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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. FAA-2024-1477; Project Identifier AD-2023-01015-R; Amendment 39-22880; AD 2024-23-01]

RIN 2120-AA64

#### Airworthiness Directives; Robinson Helicopter Company

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain Robinson Helicopter Company Model R44 and R44 II helicopters. This AD was prompted by several reports of failed clutch actuators and failed rivets attaching the belt tension clutch actuator brackets (bracket) to the fan scroll housing. This AD requires inspecting each bracket and, depending on the results, accomplishing additional inspections or taking any necessary corrective actions. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective January 7, 2025.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of January 7, 2025.

**ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-1477; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

*Material Incorporated by Reference:*

- For Robinson Helicopter Company material identified in this AD, contact Robinson Helicopter Company, Technical Support Department, 2901 Airport Drive, Torrance, CA 90505; phone: (310) 539-0508; fax: (310) 539-5198; email: [ts1@robinsonheli.com](mailto:ts1@robinsonheli.com); or at [robinsonheli.com](https://www.robinsonheli.com).

- You may view this material at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Parkway, Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-1477.

*Other Related Material:* For other related Robinson Helicopter Company material identified in this AD, use the Robinson Helicopter Company contact information under *Material Incorporated by Reference* above.

**FOR FURTHER INFORMATION CONTACT:**

Charles Ayala, Aviation Safety Engineer, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712; phone: (562) 627-5226; email: [Charles.L.Ayala@faa.gov](mailto:Charles.L.Ayala@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain serial-numbered Robinson Helicopter Company Model R44 and Model R44 II helicopters. The NPRM published in the **Federal Register** on June 27, 2024 (89 FR 53534). The NPRM was prompted by five reports of failed clutch actuators and failed rivets attaching the clutch actuator bracket, part number A185-1, A185-2, and A185-5 (bracket), to the fan scroll housing on Robinson Helicopter Company Model R44 II helicopters. According to Robinson Helicopter Company, in all of these occurrences, the bracket separated from the fan scroll housing. In four of the reports, this separation of the bracket caused a failure of the belt tension actuator. Further investigation revealed the failure of the rivets attaching the bracket to the fan scroll housing was caused by excessive vibration of the fan scroll housing due to the design of the fan scroll housing, including the quantity and size of the rivets. Because of design similarity, Robinson Helicopter Company Model R44

helicopters are also affected by this unsafe condition.

In the NPRM, the FAA proposed to require, with the fanwheel removed, inspecting each bracket for looseness and fretting. Depending on the results of the inspection in the NPRM, the FAA proposed to require additional actions such as inspecting the fiberglass and rivet holes of the fan scroll housing for delamination, inspecting the quantity and size of the fan scroll housing rivets, replacing the fan scroll housing, replacing brackets and rivets, and applying a horizontal torque stripe to each rivet. The FAA is issuing this AD to address the unsafe condition on these products.

**Discussion of Final Airworthiness Directive**

**Comments**

The FAA received a comment from one commenter, Robinson Helicopter Company. The following presents the comment received on the NPRM and the FAA's response to the comment.

**Request To Change the Applicability**

Robinson Helicopter Company requested the FAA revise the applicability paragraph to identify only riveted A185-1, A185-2, and A185-5 brackets. Robinson Helicopter Company stated that some helicopters within the applicable serial number ranges have been retrofitted with the latest design installation that utilizes screws as the method of attachment to the fan scroll housing instead of rivets and are not subject to this AD.

The FAA agrees and has revised the applicability paragraph of this AD to clarify that only certain riveted brackets are applicable. The FAA also added a note to the applicability paragraph of this AD to further clarify that brackets installed to the fan scroll housing with screws are not applicable to this AD.

**Conclusion**

The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes and other changes described previously, this AD is adopted as proposed in the NPRM. None of the



changes will increase the economic burden on any operator.

### Material Incorporated by Reference Under 1 CFR Part 51

The FAA reviewed Robinson Helicopter Company R22 Service Letter SL-74B (SL-74B), and R44 Service Letter SL-61B (SL-61B), each Revision B and dated March 16, 2023 (co-published as one document). This material specifies procedures for inspecting the A185 brackets for looseness and ensuring that a total of 12 rivets attach the A185 brackets to the fan scroll housing, and corrective actions as necessary including repairing rivet holes; replacing the scroll; replacing any 1/8-inch rivets with 5/32-inch rivets; enlarging rivet holes; and applying a torque seal. SL-61B is incorporated by reference in this AD. SL-74B is not incorporated by reference in this AD because this AD does not apply to Robinson Helicopter Company Model R22 helicopters.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

### Other Related Material

The FAA reviewed Robinson Helicopter Company R44 Service Bulletin SB-113, dated March 16, 2023 (SB-113). This material specifies procedures for inspecting the A185 brackets to ensure the brackets are attached to the fan scroll housing with 5/32-inch rivets. This material also specifies repairing the scroll if there are less than 12 rivets, if 5/32-inch rivets are not installed, if the brackets are loose, or if there is any fretting.

### Differences Between This AD and the Referenced Material

This AD requires inspecting the brackets for fretting, and the fiberglass and rivet holes for delamination, whereas SL-61B does not contain those actions. SL-61B specifies procedures for repairing the fan scroll housing rivet holes, whereas this AD requires making that repair in accordance with FAA-approved procedures.

### Costs of Compliance

The FAA estimates that this AD affects 1,686 of U.S. registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Inspecting the brackets (three brackets per helicopter) for looseness and fretting will take 0.25 work-hour, for an

estimated cost of \$21 per helicopter and \$35,406 for the U.S. fleet.

If required, inspecting the fiberglass for delamination will take 0.25 work-hour, for an estimated cost of \$21 per helicopter.

If required, replacing the fan scroll housing will take 5 work-hours and parts will cost \$3,720, for an estimated cost of \$4,145 per helicopter.

If required, inspecting all brackets, each inner plate, and each fan scroll housing rivet hole will take 1 work-hour, for an estimated cost of \$85 per helicopter.

If required, replacing a bracket or inner plate will take 1 work-hour and parts will cost \$175, for an estimated cost of \$260 per part replacement.

If required, repairing each rivet hole (per bracket) will take 1.5 work-hours for an estimated cost of \$128 per bracket.

Replacing a rivet (if required) and applying a torque stripe to each rivet will each take a minimal amount of time with a nominal parts cost.

### Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701.

#### § 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2024-23-01 Robinson Helicopter Company:**  
Amendment 39-22880; Docket No. FAA-2024-1477; Project Identifier AD-2023-01015-R.

#### (a) Effective Date

This airworthiness directive (AD) is effective January 7, 2025.

#### (b) Affected ADs

None.

#### (c) Applicability

This AD applies to Robinson Helicopter Company Model R44 helicopters serial numbers (S/Ns) up to 2480 inclusive and 30001 through 30022 inclusive, and Model R44 II helicopters S/Ns up to 14089 inclusive, certificated in any category, with riveted belt tension clutch actuator brackets part number A185-1, A185-2, or A185-5 (bracket(s)), installed.

**Note 1 to paragraph (c):** Helicopters with an R44 Cadet designation are Model R44 helicopters.

**Note 2 to paragraph (c):** Brackets attached to the fan scroll housing with screws are not applicable to this AD.

#### (d) Subject

Joint Aircraft System Component (JASC) Code: 6300, Main rotor drive system and 6700, Rotorcraft flight control.

#### (e) Unsafe Condition

This AD was prompted by several reports of failed clutch actuators and failed rivets attaching the belt tension clutch actuator brackets to the fan scroll housing. The FAA is issuing this AD to detect and address loose and missing brackets and rivets. The unsafe condition, if not addressed, could result in detachment of the bracket, causing failure of the clutch actuator assembly, loss of main and tail rotor drive, and subsequent loss of control of the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

Within 300 hours time-in-service or 12 months after the effective date of this AD, whichever occurs first, with the fanwheel removed, inspect each bracket installed on the fan scroll housing for looseness (bracket can be moved by hand) and fretting and accomplish the actions in paragraphs (g)(1) or (2) of this AD, as applicable.

(1) If there is no looseness of any bracket and no fretting, before further flight, visually inspect the fiberglass adjacent to the rivets of the fan scroll housing for delamination.

(i) If there is any delamination in the fiberglass, before further flight, remove the fan scroll housing from service and install an airworthy fan scroll housing using  $\frac{5}{32}$ -inch rivets (3 rivets on each top bracket and 6 rivets on the bottom bracket). Figure 1 of Robinson Helicopter Company R44 Service Letter SL-61B, Revision B, dated March 16, 2023 (SL-61B) depicts the location of each bracket and rivet.

(ii) If there is no delamination in the fiberglass, before further flight, inspect for the installation of  $\frac{5}{32}$ -inch rivets in all 12 locations (3 rivets on each top bracket and 6 rivets on the bottom bracket) depicted in Figure 1 of SL-61B. If a  $\frac{5}{32}$ -inch rivet is not installed in all 12 locations, before further flight, replace each incorrectly sized rivet and each missing rivet with a  $\frac{5}{32}$ -inch rivet.

(iii) Apply a horizontal torque stripe to each rivet.

(2) If any bracket is loose or has any fretting, before further flight, remove all brackets and inner plates from the fan scroll housing and accomplish the actions in paragraphs (g)(2)(i) through (iv) of this AD.

(i) For each bracket with fretting, before further flight, remove the bracket from service and replace it with an airworthy bracket.

(ii) Visually inspect each bracket and inner plate for cracks and deformation, visually inspect the fiberglass adjacent to the rivets of the fan scroll housing for delamination, and visually inspect each fan scroll housing rivet hole for delamination and other damage, which may be indicated by fretting.

(A) If a bracket or inner plate has any cracks or deformation, before further flight, remove the affected part from service and replace it with an airworthy part.

(B) If there is any delamination in the fiberglass or in any fan scroll housing rivet hole, before further flight, remove the fan scroll housing from service and install an airworthy fan scroll housing using  $\frac{5}{32}$ -inch rivets (3 rivets on each top bracket and 6 rivets on the bottom bracket). Figure 1 of SL-61B depicts the location of each bracket and rivet.

(C) If there is other damage in any fan scroll housing rivet hole, before further flight, repair the rivet hole in accordance with FAA-approved procedures.

(iii) After accomplishing the actions in paragraphs (g)(2)(i) and (ii) of this AD, when installing or reinstalling the brackets and inner plates on the fan scroll housing, use

$\frac{5}{32}$ -inch rivets in all 12 locations depicted in Figure 1 of SL-61B (3 rivets on each top bracket and 6 rivets on the bottom bracket).

(iv) Apply a horizontal torque stripe to each rivet.

**(h) Special Flight Permits**

A one-time special flight permit may be issued in accordance with 14 CFR 21.197 and 21.199 to fly the aircraft to a location where the actions required by this AD can be accomplished. This flight must be a non-revenue flight and limited to only essential flight crew.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, West Certification Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the West Certification Branch, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: *AMOC@faa.gov*.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

For more information about this AD, contact Charles Ayala, Aviation Safety Engineer, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712; phone: (562) 627-5226; email: *Charles.L.Ayala@faa.gov*.

**(k) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the material listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this material as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Robinson Helicopter Company R44 Service Letter SL-61B, Revision B, dated March 16, 2023.

**Note 3 to paragraph (k)(2)(i):** The material identified in paragraph (k)(2)(i) of this AD is co-published as one document along with Robinson Helicopter Company R22 Service Letter SL-74B, Revision B, dated March 16, 2023, which is not incorporated by reference in this AD.

(ii) [Reserved]

(3) For Robinson Helicopter Company material identified in this AD, contact Robinson Helicopter Company, Technical Support Department, 2901 Airport Drive, Torrance, CA 90505; phone: (310) 539-0508; fax: (310) 539-5198; email: *ts1@robinsonheli.com*; or at *robinsonheli.com*.

(4) You may view this material at the FAA, Office of Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(5) You may view this material at the National Archives and Records

Administration (NARA). For information on the availability of this material at NARA, visit [www.archives.gov/federal-register/cfr/ibr-locations](http://www.archives.gov/federal-register/cfr/ibr-locations) or email: *fr.inspection@nara.gov*.

Issued on November 4, 2024.

**Victor Wicklund,**

*Deputy Director, Compliance & Airworthiness Division, Aircraft Certification Service.*

[FR Doc. 2024-28178 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-13-P**

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 71**

[Docket No. FAA-2023-1624; Airspace Docket No. 24-ACE-7]

**RIN 2120-AA66**

**Establishment of Class E Airspace; Rose Hill, KS**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule, delay of effective date.

**SUMMARY:** This action delays the effective date of a final rule published in the **Federal Register** on November 18, 2024, establishing Class E airspace at Rose Hill, KS to support new public instrument procedures. The FAA is delaying the effective date to allow sufficient time for charting cut-off date compliance.

**DATES:** The effective date of the final rule published on November 18, 2024 (89 FR 90578) is delayed from December 26, 2024, to February 20, 2025. The Director of the Federal Register approved this incorporation by reference action under 1 CFR part 51, subject to the annual revision of FAA Order JO 7400.11 and publication of conforming amendments.

**FOR FURTHER INFORMATION CONTACT:** Raul Garza Jr., Federal Aviation Administration, Operations Support Group, Central Service Center, 10101 Hillwood Parkway, Fort Worth, TX 76177; telephone (817) 222-5874.

**SUPPLEMENTARY INFORMATION:****Background**

The FAA published a final rule in the **Federal Register** for Docket No. FAA-2023-1624 (89 FR 90578, November 18, 2024) establishing Class E airspace at Rose Hill, KS to support new public instrument procedures. The effective date for that final rule is December 26, 2024. After the final rule was published, the FAA determined that the effective date did not coincide with the FAA's charting cut-off date.

Class E airspace designations are published in paragraph 6005 of FAA Order JO 7400.11, Airspace Designations and Reporting Points, which is incorporated by reference in 14 CFR 71.1 on an annual basis. This document amends the current version of that order, FAA Order JO 7400.11J, dated July 31, 2024, and effective September 15, 2024. FAA Order JO 7400.11J is publicly available online at [www.faa.gov/air\\_traffic/publications/](http://www.faa.gov/air_traffic/publications/). You may also contact the Rules and Regulations Group, Office of Policy, Federal Aviation Administration, 600 Independence Avenue SW, Washington, DC 20597; telephone: (202) 267-8783.

FAA Order JO 7400.11J lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

### Good Cause for No Notice and Comment

Section 553(b)(3)(B) of Title 5, United States Code, (the Administrative Procedure Act) authorizes agencies to dispense with notice and comment procedures for rules when the agency for “good cause” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without seeking comment prior to the rulemaking. The FAA finds that prior notice and public comment to this final rule is unnecessary due to the brief length of the extension of the effective date and the fact that there is no substantive change to the rule.

### Delay of Effective Date

Accordingly, pursuant to the authority delegated to me, the effective date of the final rule for Airspace Docket 24-ACE-7, as published in the **Federal Register** on November 18, 2024 (89 FR 90578), FR Doc. 2024-26734, is hereby delayed until February 20, 2025.

**Authority:** 49 U.S.C. 106(f), 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959-1963 Comp., P. 389.

Issued in Fort Worth, Texas, on November 26, 2024.

**Steven Phillips,**

*Acting Manager, Operations Support Group, ATO Central Service Center.*

[FR Doc. 2024-28224 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-13-P**

## DEPARTMENT OF HOMELAND SECURITY

### Coast Guard

#### 33 CFR Part 165

[Docket Number USCG-2024-0956]

RIN 1625-AA00

### Safety Zone; Glen Island Approach Bridge, Long Island Sound, New Rochelle, NY

**AGENCY:** Coast Guard, DHS.

**ACTION:** Temporary interim rule and request for comments.

**SUMMARY:** The Coast Guard is establishing a temporary safety zone for certain waters of Long Island Sound in the vicinity of the Glen Island Approach Bridge, New Rochelle, NY, for construction vessels and machinery involved in the rehabilitation project of the bridge. The safety zone is needed to protect personnel, vessels, and the marine environment from potential hazards associated with the bridge construction between December 2, 2024, through May 27, 2027. When enforced, this regulation prohibits persons and vessels from being in the safety zone unless authorized by the Captain of the Port New York or a designated representative.

**DATES:** This rule is effective without notice from December 3, 2024, through 5 p.m. on May 27, 2027. For the purposes of enforcement, actual notice will be used from midnight on December 2, 2024, until December 3, 2024. This rule will only be enforced during periods when construction operations at the bridge are in progress.

Comments and related material must be received by the Coast Guard on or before March 3, 2025.

**ADDRESSES:** To view documents mentioned in this preamble as being available in the docket, go to <https://www.regulations.gov>, type USCG-2024-0956 in the search box and click “Search.” Next, in the Document Type column, select “Supporting & Related Material.”

**FOR FURTHER INFORMATION CONTACT:** If you have questions about this rule, call or email Jeffrey Yunker, Waterways Management Division, U.S. Coast Guard Sector New York; telephone 718-354-4195, email [Jeffrey.M.Yunker@uscg.mil](mailto:Jeffrey.M.Yunker@uscg.mil).

#### SUPPLEMENTARY INFORMATION:

##### I. Table of Abbreviations

CFR Code of Federal Regulations  
COTP Captain of the Port New York  
DHS Department of Homeland Security

FR Federal Register  
NPRM Notice of proposed rulemaking  
§ Section  
U.S.C. United States Code

## II. Background Information and Regulatory History

On August 26, 2024, the Westchester County Department of Public Works and Transportation notified the U.S. Coast Guard of the Glen Island Bridge rehabilitation project and the need for waterway closures on the Long Island Sound. This project will establish a temporary bridge to Glen Island while the current bridge undergoes repairs. The Westchester County and the New Rochelle Harbor Master have provided information to the public and interested stakeholders through an established project page maintained by the county located at <https://publicworks.westchestergov.com/glen-island-approach-bridge-rehabilitation>. This project page has been updated throughout the project and will be maintained to provide updated information to the public until the bridge rehabilitation project is finished. The contractor Kiewit Infrastructure Company has already conducted public outreach meetings with affected mariners and plans additional meetings to address any concerns with regards to the waterway closures in the future.

The Coast Guard is issuing this temporary rule under the authority in 5 U.S.C. 553(b)(B). This statutory provision authorizes an agency to issue a rule without prior notice and opportunity to comment when the agency for good cause finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” The Coast Guard finds that good cause exists for not publishing a notice of proposed rulemaking (NPRM) with respect to this rule because prompt action is needed to respond to the potential safety hazards associated with the establishment of a temporary bridge and bridge repairs to the existing Glen Island Bridge. Publishing an NPRM would be impracticable and contrary to public interest because a safety zone must be established by December 2, 2024, to ensure that the construction project is not delayed. Any delay in the project would adversely impact vehicle users and mariners in the future.

Also, under 5 U.S.C. 553(d)(3), the Coast Guard finds that good cause exists for making this rule effective less than 30 days after publication in the **Federal Register**. Delaying the effective date of this rule would be impracticable because prompt action is needed to respond to the potential safety hazards associated with the establishment of a

temporary bridge and the construction associated with the rehabilitation of the existing Glen Island Bridge.

Although this regulation is published as an interim rule without prior notice, public comment is nevertheless desirable to ensure that the regulation is both workable and reasonable.

Accordingly, persons wishing to comment may do so by submitting written comments as set out under

**ADDRESSES** in this preamble.

Commenters should include their names and addresses, identify the docket number for the regulation, and give reasons for their comments. If the Coast Guard determines that changes to the temporary interim rule are necessary, we will publish a temporary final rule or other appropriate document.

### III. Legal Authority and Need for Rule

The Coast Guard is issuing this rule under authority in 46 U.S.C. 70034. The Captain of the Port New York (COTP) has determined that potential safety hazards associated with the establishment of a temporary bridge and bridge repairs to the existing Glen Island Bridge from December 2, 2024, through May 27, 2027, constitutes a safety concern for anyone near the waters of Glen Island and in the vicinity of bridge repair vessels and machinery. This rule is needed to protect personnel, vessels, and the marine environment in the navigable waters within the safety zone while the bridge is being repaired.

### IV. Discussion of the Rule

This rule establishes a safety zone from 7 a.m. until 5 p.m. each day starting on midnight December 2, 2024, through May 27, 2027. The safety zone will only be enforced during periods when construction operations at the Glen Island Bridge rehabilitation project are in progress. The anticipated dates for the windows of full channel closures are from 7 a.m. on December 2, 2024, through 5 p.m. on December 20, 2024; from 7 a.m. on February 3, 2025, through 5 p.m. on May 22, 2025; and from 7 a.m. on October 2, 2025, through 5 p.m. on April 29, 2026. Additionally, the schedule from 7 a.m. on August 11, 2026, through 5 p.m. on August 17, 2026; 7 a.m. on October 2, 2026, through 5 p.m. on October 29, 2026, is being considered. The Coast Guard will make notice of the safety zone via the Local Notice to Mariners and issue a Broadcast Notice to Mariners via marine channel 16 (VHF-FM) as soon as practicable in advance of these scheduled closures. All these dates are tentative and subject to change due to weather, supply chain delays, or other unforeseen circumstances. This rule

remains effective through May 27, 2027, in case the project is delayed due to unforeseen circumstances. The area regulated by the safety zone will encompass the waters around the Glen Island Bridge and will cover all navigable waters, from surface to bottom, within the area formed by connecting the following latitude and longitude points in the following order:

40°53'18.58" N 73°46'56.26" W; thence to 40°53'22.08" N 73°46'59.39" W; thence north along the shore to 40°53'23.8" N 73°46'57.51" W; thence to 40°53'19.15" N 73°46'52.54" W and thence south along the shore back to the point of origin. This area is intended for the vessels and machinery being used by personnel for the Glen Island Bridge rehabilitation project. The duration of the zone is intended to ensure the safety of personnel, vessels, and these navigable waters during the bridge construction. No vessel or person will be permitted to enter the safety zone without obtaining permission from the COTP or a designated representative.

The Coast Guard will make notice of the safety zone via the Local Notice to Mariners and issue a Broadcast Notice to Mariners via marine channel 16 (VHF-FM) as soon as practicable in response to an emergency or hazardous condition. In addition, if the project is completed before May 27, 2027, enforcement of the safety zone will be suspended, and notice given via Local Notice to Mariners. The First Coast Guard District Local Notice to Mariners can be found at: <http://www.navcen.uscg.gov>.

### V. Regulatory Analyses

We developed this rule after considering numerous statutes and Executive orders related to rulemaking. Below we summarize our analyses based on a number of these statutes and Executive orders, and we discuss First Amendment rights of protestors.

#### A. Regulatory Planning and Review

Executive Orders 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits. This rule has not been designated a "significant regulatory action," under section 3(f) of Executive Order 12866, as amended by Executive Order 14094 (Modernizing Regulatory Review). Accordingly, this rule has not been reviewed by the Office of Management and Budget (OMB).

This regulatory action determination is based on the size, location, duration and time of year of the planned

enforcement periods of the safety zone. The bridge owner and contractor are coordinating the full waterway closures with Westchester County and New Rochelle Harbor Master. The safety zone will impact a small, designated area underneath and around the Glen Island Bridge and will not cause major impacts to vessel traffic. The impact to these entities would be minimal because mariners are able to make a short transit (approximately 20 minutes) around Glen Island to reach any destination on the other side to Long Island Sound. The Coast Guard will notify the public of the enforcement of this rule through appropriate means, which may include, but are not limited to, publication in the Local Notice to Mariners and Broadcast Notice to Mariners via VHF-FM marine channel 16.

#### B. Impact on Small Entities

The Regulatory Flexibility Act of 1980, 5 U.S.C. 601–612, as amended, requires Federal agencies to consider the potential impact of regulations on small entities during rulemaking. The term "small entities" comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. The Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities.

While some owners or operators of vessels intending to transit the safety zone may be small entities, for the reasons stated in section V.A above, this rule will not have a significant economic impact on any vessel owner or operator.

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this rule. If the rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by

employees of the Coast Guard, call 1-888-REG-FAIR (1-888-734-3247). The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

#### C. Collection of Information

This rule will not call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501-3520).

#### D. Federalism and Indian Tribal Governments

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect on the States, on the relationship between the National Government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this rule under that Order and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

Also, this rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it does not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

#### E. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531-1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of \$100,000,000 (adjusted for inflation) or more in any one year. Though this rule will not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

#### F. Environment

We have analyzed this rule under Department of Homeland Security Directive 023-01, Rev. 1, associated implementing instructions, and Environmental Planning COMDTINST 5090.1 (series), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4370f), and have determined that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human

environment. This rule involves a safety zone in vicinity of the Glen Island Bridge on the navigable waters within Long Island Sound that will limit entry to the project area without authorization from the Captain of the Port or their designated representatives. It is categorically excluded from further review under paragraph L60(a) of Appendix A, Table 1 of DHS Instruction Manual 023-01-001-01, Rev. 1. A Record of Environmental Consideration supporting this determination is available in the docket. For instructions on locating the docket, see the **ADDRESSES** section of this preamble.

#### G. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places, or vessels.

#### List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, Waterways.

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR 165 as follows:

#### **PART 165—REGULATED NAVIGATION AREAS AND LIMITED ACCESS AREAS**

- 1. The authority citation for part 165 continues to read as follows:

**Authority:** 46 U.S.C. 70034, 70051, 70124; 33 CFR 1.05-1, 6.04-1, 6.04-6, and 160.5; Department of Homeland Security Delegation No. 00170.1, Revision No. 01.3.

- 2. Add § 165.T01-0956 to read as follows:

#### **§ 165.T01-0956 Safety Zone; Glen Island Approach Bridge, Long Island Sound, New Rochelle, NY.**

(a) *Location.* The following area is a safety zone: All the navigable waters of the Long Island Sound in the vicinity of the Glen Island Approach Bridge, New Rochelle, NY, from surface to bottom, encompassed by a line connecting the following points beginning at 40°53'18.58" N 73°46'56.26" W; thence to 40°53'22.08" N 73°46'59.39" W; thence north along the shore to 40°53'23.8" N 73°46'57.51" W; thence to 40°53'19.15" N 73°46'52.54" W and thence south along the shore back to the point of origin. These coordinates are based on the 1984 World Geodetic System (WGS 84).

(b) *Definitions.* As used in this section, *designated representative* means a Coast Guard Patrol Commander, including a Coast Guard coxswain, petty officer, or other officer operating a Coast Guard vessel and a Federal, State, and local officer designated by or assisting the Captain of the Port New York (COTP) in the enforcement of the safety zone.

(c) *Regulations.* (1) Under the general safety zone regulations in subpart C of this part, you may not enter the safety zone described in paragraph (a) of this section unless authorized by the COTP or the COTP's designated representative.

(2) To seek permission to enter, contact the COTP or the COTP's representative via VHF Channel 16 or by phone at (844) 692-8724 (Sector New York Command Center). Those in the safety zone must comply with all lawful orders or directions given to them by the COTP or the COTP's designated representative.

(d) *Enforcement period.* This section is effective from December 2, 2024, through May 27, 2027, but will only be enforced during periods when construction operations at the Glen Island Approach Bridge are in progress. The Coast Guard will make notice of this safety zone via the Local Notice to Mariners and issue a Broadcast Notice to Mariners via marine channel 16 (VHF-FM) as soon as practicable in advance of these scheduled closures and in response to any emergency or hazardous condition. In addition, if the project is completed before May 27, 2027, enforcement of the safety zone will be suspended, and notice given via Local Notice to Mariners. The First Coast Guard District Local Notice to Mariners can be found at: <http://www.navcen.uscg.gov>.

**Jonathan A. Andrechik,**  
Captain, U.S. Coast Guard, Captain of the Port Sector New York.

[FR Doc. 2024-28295 Filed 12-2-24; 8:45 am]

**BILLING CODE 9110-04-P**

**DEPARTMENT OF COMMERCE****National Oceanic and Atmospheric Administration****50 CFR Part 648**

[Docket No. 231221–0314; RTID 0648–XE503]

**Fisheries of the Northeastern United States; Atlantic Bluefish Fishery; Quota Transfer From Rhode Island to North Carolina**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Temporary rule; quota transfer.

**SUMMARY:** NMFS announces that the State of Rhode Island is transferring a portion of their 2024 commercial bluefish quota to the State of North Carolina. This quota adjustment is necessary to comply with the Atlantic Bluefish Fishery Management Plan (FMP) quota transfer provisions. This announcement informs the public of the revised 2024 commercial bluefish quotas for Rhode Island and North Carolina.

**DATES:** Effective December 2, 2024 through December 31, 2024.

**FOR FURTHER INFORMATION CONTACT:** Matthew Rigdon, Fishery Management Specialist, (978) 281–9336.

**SUPPLEMENTARY INFORMATION:** Regulations governing the Atlantic bluefish fishery are found in 50 CFR 648.160 through 648.167. These regulations require annual specification of a commercial quota that is apportioned among the coastal states from Maine through Florida. The process to set the annual commercial quota and the percent allocated to each state is described in § 648.162, and the final 2024 allocations were published on January 2, 2024 (89 FR 34).

The final rule implementing amendment 1 to the FMP, as published in the **Federal Register** on July 26, 2000 (65 FR 45844), provided a mechanism for transferring bluefish commercial quota from one state to another. Two or more states, under mutual agreement and with the concurrence of the NMFS Greater Atlantic Regional Administrator, can request approval to transfer or combine bluefish commercial quota under § 648.162(e). The Regional Administrator is required to consider three criteria in the evaluation of requests for quota transfers or combinations: (1) the transfers would not preclude the overall annual quota from being fully harvested; (2) the transfers address an unforeseen variation or contingency in the fishery;

and (3) the transfers are consistent with the objectives of the FMP and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The Regional Administrator has determined these criteria have been met for the transfers approved in this notification.

Rhode Island is transferring 50,000 pounds (lb) (22,680 kilograms (kg)) to North Carolina through mutual agreement of the states. This transfer was requested to ensure North Carolina would not exceed its 2024 state quota. The revised bluefish quotas for 2024 are: Rhode Island, 166,401 lb (75,478 kg) and North Carolina, 1,080,996 lb (490,332 kg).

**Classification**

NMFS issues this action pursuant to section 305(d) of the Magnuson-Stevens Act. This action is required by 50 CFR 648.162(e)(1)(i) through (iii), which was issued pursuant to section 304(b), and is exempted from review under Executive Order 12866.

**Authority:** 16 U.S.C. 1801 *et seq.*

Dated: November 27, 2024.

**Kelly Denit,**

*Director, Office of Sustainable Fisheries,  
National Marine Fisheries Service.*

[FR Doc. 2024–28328 Filed 12–2–24; 8:45 am]

**BILLING CODE 3510–22–P**

# Proposed Rules

Federal Register

Vol. 89, No. 232

Tuesday, December 3, 2024

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

## DEPARTMENT OF AGRICULTURE

### Food and Nutrition Service

#### 7 CFR Part 273

[FNS–2024–0029]

RIN 0584–AF04

#### Supplemental Nutrition Assistance Program: Thrifty Food Plan Cost Adjustment for the Price of Food in Hawaii

**AGENCY:** Food and Nutrition Service (FNS), USDA.

**ACTION:** Proposed rule.

**SUMMARY:** The Food and Nutrition Service (FNS) is proposing changes to Supplemental Nutrition Assistance Program (SNAP) regulations in accordance with the Food and Nutrition Act of 2008, which calls for a cost adjustment in the Thrifty Food Plan (TFP) for Hawaii to reflect the cost of food in Hawaii. The proposal would update the method for calculating this cost adjustment to incorporate food prices from throughout the State of Hawaii rather than from Honolulu alone, ensuring that SNAP benefit allotments better reflect food prices faced by participants throughout the State of Hawaii.

**DATES:** Written comments must be received on or before February 3, 2025 to be assured of consideration.

**ADDRESSES:** The Food and Nutrition Service, USDA, invites interested persons to submit written comments on this proposed rule. Comments may be submitted in writing by one of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.

- *Mail:* Send comments to Kevin Meyers Mathieu, Economic Advisor, Nutrition Guidance and Analysis Division, Center for Nutrition Policy and Promotion, Food and Nutrition Service, U.S. Department of Agriculture,

1320 Braddock Place, Fourth Floor, Alexandria, VA 22314.

- *Website:* Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.

- *Email:* Send comments to [FNS.FoodPlans@usda.gov](mailto:FNS.FoodPlans@usda.gov).

- All written comments submitted in response to this proposed rule will be included in the record and will be made available to the public. Please be advised that the substance of the comments and the identity of the individuals or entities submitting the comments will be subject to public disclosure. FNS will make the written comments publicly available on the internet via <http://www.regulations.gov>.

#### FOR FURTHER INFORMATION CONTACT:

Kevin Meyers Mathieu, Economic Advisor, Nutrition Guidance and Analysis Division, Center for Nutrition Policy and Promotion, Food and Nutrition Service, U.S. Department of Agriculture, 1320 Braddock Place, Fourth Floor, Alexandria, VA 22314, 703–946–7619 or [FNS.FoodPlans@usda.gov](mailto:FNS.FoodPlans@usda.gov).

#### SUPPLEMENTARY INFORMATION:

##### Background

The Thrifty Food Plan (TFP) is one of four Food Plans the Department of Agriculture (USDA or the Department) develops that estimates the cost of a healthy diet across various price points—the Thrifty, Low-Cost, Moderate-Cost and Liberal Food Plans. The TFP is the lowest cost of the four and represents a nutritious, practical, and cost-effective diet. The foundation of the TFP is a set of market baskets applicable to various age-sex groups that outline nutrient-dense foods and beverages, their amounts, and associated costs that can be purchased on a limited budget to support a healthy diet through nutritious meals and snacks at home. The cost of the TFP is based on a reference family of four, defined by the Food and Nutrition Act of 2008 (the Act) (7 U.S.C. 2012(u)) as consisting of a man and a woman twenty through fifty, a child six through eight, and a child nine through eleven years of age.

The TFP is used to determine Supplemental Nutrition Assistance Program (SNAP) benefit amounts. The Act (7 U.S.C. 2012(u)(4)) requires the cost of the TFP in June to serve as the basis for setting maximum SNAP benefit allotments in the following Federal

fiscal year (October 1 through September 30). SNAP allotments for households of different sizes are calculated proportional to the allotments for the reference family of four with economies-of-scale adjustments.

The Act (7 U.S.C. 2012(u)(2)) also calls for cost adjustments to the TFP to reflect the cost of food in Hawaii. Requirements at 7 CFR 273.10(e)(4)(i) further specify that this cost adjustment reflect the price of food in Honolulu. The calculation and implementation of this cost adjustment are separate from the reevaluation of the TFP market basket; the cost adjustment is not required to be updated when the TFP market basket is reevaluated every five years. The extent of regional food price variation may vary across different foods and beverages. As a result, changes to the underlying TFP market basket resulting from the required 2021 TFP reevaluation present an opportunity to update the cost adjustment for Hawaii. Although not required, updating the cost adjustment for Hawaii following the TFP reevaluation is intended to maintain equivalence between the purchasing power of SNAP benefit allotments in Hawaii and in the mainland United States.

Beginning in the early 1970s, TFP costs for Hawaii were calculated as the cost of the TFP in the contiguous 48 States and the District of Columbia (hereafter referred to as the “mainland United States”) adjusted for the price of food in Honolulu. Evidence suggests that Honolulu was used as the basis for the original price-of-food adjustments because it was the only location in Hawaii where the Bureau of Labor Statistics (BLS) routinely collected food price information. FNS subsequently used BLS food price information collected for the Consumer Price Index (CPI) as the basis for the TFP cost for Hawaii through 1977.

In 1978, BLS made major changes in the methods for collecting food price data in the United States, thereby hindering the construction of price-of-food adjustments for Honolulu using BLS data. With the need for an alternate data source, FNS incorporated data collected in Hawaii from the 1977–1978 Nationwide Food Consumption Survey (NFCS) into a reevaluation of the TFP in the early 1980s. The NFCS-based



Hawaii TFP cost was subsequently updated for inflation using the semiannual CPIs for Urban Hawaii through June 2021.

As directed by Congress in the Agricultural Improvement Act of 2018, FNS published an evidence-driven reevaluation of the TFP to reflect current food prices, food composition data, consumption patterns, and dietary guidance. The reevaluation, published in August 2021,<sup>1</sup> defined the content of the TFP market baskets for 15 age-sex groups, as well as their costs in the mainland United States. After accounting for inflation, the reevaluation led to a 21.03 percent increase in the TFP cost for the mainland United States.

FNS used the 21.03-percent increase in the inflation-adjusted cost of the TFP in the mainland United States associated with the 2021 TFP reevaluation as the basis for a temporary adjustment to the TFP cost for Hawaii beginning in June 2021. The application of the temporary adjustment effectively held the cost adjustment for Hawaii (*i.e.*, the percentage difference between the TFP cost for Hawaii and the TFP cost for the mainland United States) constant despite the change in underlying market baskets. This TFP cost for Hawaii, inclusive of the temporary adjustment, was subsequently adjusted for inflation to reflect June 2022 price levels using the CPIs for Urban Hawaii while FNS conducted additional analysis of the TFP cost for Hawaii.

In July 2023, FNS published the *Thrifty Food Plan Cost Estimates for Alaska and Hawaii* report,<sup>2</sup> which calculated a TFP cost estimate for Hawaii based on the most current information available. The report detailed the identification of a data source and the development and application of a price index to these data in alignment with the statutory and regulatory framework. The report was peer reviewed by experts at USDA as well as six researchers outside of the Federal Government with demonstrated knowledge and expertise in price indexes, scanner data, and the TFP. The report provides detailed information on the four existing price indexes and the four existing food price data sources that FNS considered, as well as FNS' approach for evaluating each option. FNS identified Circana (formerly Information Resources Inc., or IRI) retail scanner data as the best available data to support the calculation of new TFP cost estimates based on sample size;

applicability to the TFP, 2021; data quality and documentation; appropriateness as a price-of-food adjustment; and the applicability to future updates and reevaluations. FNS used Circana retail scanner data from over 40,000 stores in the mainland United States and 32 stores in Honolulu, including sales at these stores for over 11,000 unique food and beverage products, to calculate an updated TFP cost estimate for Hawaii using a bilateral, fixed-basket price index. FNS used this index-based approach to calculate an updated TFP cost for Hawaii rather than the optimization model approach used to conduct TFP reevaluations because the use of an optimization model would have resulted in the creation of a new market basket, which would not align with the Act (7 U.S.C. 2012(u)(2)), which calls for an adjustment for the cost of food, exclusively. The analysis resulted in an updated estimate of the percent difference in the cost of purchasing the foods and beverages in the TFP, 2021 market basket between Honolulu and the mainland United States, which was applied to the cost of the TFP in the mainland United States to yield an updated TFP cost estimate for Hawaii. FNS is currently transitioning to using the updated TFP cost estimate for Hawaii published in the 2023 report as the basis of the maximum SNAP allotment in Hawaii.

On January 19, 2024, FNS posted a Request for Information (RFI) in the **Federal Register** (89 FR 3633) requesting comments from the public—including the food industry and research community—to help inform future policy and decisions about potentially updating TFP cost estimates for the State of Hawaii. Concurrent with its publication, FNS conducted extensive outreach to stakeholders in Hawaii to spread awareness of and encourage responses to the RFI, including by notifying national and local organizations, universities, Federal agencies, and every SNAP-approved retailer in the State for which SNAP had a valid email address (approximately 510 retailers). The comment period closed on March 4, 2024, with FNS receiving a total of 12 comments from a Federal agency, an academic, a SNAP participant, three advocacy/non-profit organizations, an industry association, three retailers (with one retailer providing two comments), and one anonymous respondent.

The comments consistently indicated that food prices are higher in the Neighbor Islands than in Honolulu. A key rationale for the higher relative prices in the Neighbor Islands provided

by the comments is that nearly all foods and beverages sold in Hawaii are imported from out of State, with these shipments first arriving in Honolulu and then being distributed out to the Neighbor Islands. This additional distribution step adds to the cost of foods and beverages in the Neighbor Islands which is then reflected in retail prices. Several comments suggested that many residents of the Neighbor Islands in rural and remote areas of the State do not live in proximity to club stores, which tend to offer lower unit prices for foods and beverages purchased in larger quantities. While club stores operate in urban areas on the Neighbor Islands, the comments noted that not all residents of the Neighbor Islands are able to consistently access these stores.

The comments also consistently expressed that a TFP cost for the State of Hawaii based on data from Honolulu alone underestimates the true cost of a healthy, practical, cost-effective diet in the State. Therefore, the respondents argued, current SNAP regulations that adjust for the cost of food in Honolulu lead to an inequitable maximum allotment level for SNAP participants in the Neighbor Islands.

FNS proposes to revise regulations at 7 CFR 273.10(e)(4)(i) to align with the Act (7 U.S.C. 2012(u)(2)) and base the cost of the TFP in Hawaii on an adjustment for the price of food in the State of Hawaii rather than an adjustment for the price of food in Honolulu.

FNS conducted analyses to develop a TFP cost estimate for Hawaii that would align with the proposed regulatory framework using the best currently available data on food prices. The analysis, which uses the same peer-reviewed methodology as the original Honolulu analysis published in 2023, is documented in a separately published scientific report.<sup>3</sup> The analysis is also based on Circana retail scanner data, which provides sales data from the 32 stores included in FNS' original analysis of food prices in Honolulu and 65 additional stores from throughout the State of Hawaii. Including these additional stores also enables the analysis to consider food prices for approximately 700 (6%) more unique food and beverage products.

The proposed changes at 7 CFR 273.10(e)(4)(i) would revise the regulatory framework for Hawaii's TFP cost without establishing a specific dollar value or a specific price-of-food adjustment for Hawaii. The Hawaii TFP cost will continue to be based on the

<sup>1</sup> <https://www.fns.usda.gov/cnpp/thrifty-food-plan-2021>.

<sup>2</sup> <https://www.fns.usda.gov/cnpp/tpf-akhi>.

<sup>3</sup> <https://www.fns.usda.gov/cnpp/statewide-tpf-hi-2024>.



best available food price data and may be updated in the future at the Secretary's discretion. To support continuous quality advancement, FNS continues to explore food price data sources for the State of Hawaii.

#### Procedural Matters

##### Executive Order 12866, 13563 and 14094

Executive Orders 12866, 13563, and 14094 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This proposed rule has been determined to be not significant and was not reviewed by the Office of Management and Budget (OMB) in conformance with Executive Order 12866.

##### Regulatory Impact Analysis

This rule has been designated as not significant by the Office of Management and Budget, therefore, no Regulatory Impact Analysis is required.

##### Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601–612) requires Agencies to analyze the impact of rulemaking on small entities and consider alternatives that would minimize any significant impacts on a substantial number of small entities. Pursuant to that review, it has been certified that this rule would not have a significant impact on a substantial number of small entities.

##### Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), the Office of Information and Regulatory Affairs designated this rule as not a 'major rule', as defined by 5 U.S.C. 804(2).

##### Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local and tribal governments and the private sector. Under section 202 of the UMRA, the Department generally must prepare a written statement, including a cost benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures by State, local or tribal governments, in the aggregate, or

the private sector, of \$100 million or more in any one year. When such a statement is needed for a rule, Section 205 of the UMRA generally requires the Department to identify and consider a reasonable number of regulatory alternatives and adopt the most cost effective or least burdensome alternative that achieves the objectives of the rule.

This proposed rule does not contain Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local and tribal governments or the private sector of \$100 million or more in any one year. Thus, the rule is not subject to the requirements of sections 202 and 205 of the UMRA.

##### Executive Order 12372

This Supplemental Nutrition Assistance Program is listed in the Catalog of Federal Domestic Assistance under Number 10.551 and is subject to Executive Order 12372, which requires intergovernmental consultation with State and local officials. (See 2 CFR chapter IV.)

##### Federalism Summary Impact Statement

Executive Order 13132 requires Federal agencies to consider the impact of their regulatory actions on State and local governments. Where such actions have federalism implications, agencies are directed to provide a statement for inclusion in the preamble to the regulations describing the agency's considerations in terms of the three categories called for under Section (6)(b)(2)(B) of Executive Order 13132.

The Department has considered the impact of this rule on State and local governments and has determined that this rule does not have federalism implications. Therefore, under section 6(b) of the Executive Order, a federalism summary is not required.

##### Executive Order 12988, Civil Justice Reform

This proposed rule has been reviewed under Executive Order 12988, Civil Justice Reform. This rule is intended to have preemptive effect with respect to any State or local laws, regulations or policies which conflict with its provisions or which would otherwise impede its full and timely implementation. This rule/is not intended to have retroactive effect unless so specified in the Effective Dates section of the final rule. Prior to any judicial challenge to the provisions of the final rule, all applicable administrative procedures must be exhausted.

##### Civil Rights Impact Analysis

FNS has reviewed this proposed rule in accordance with USDA Regulation 4300–4, "Civil Rights Impact Analysis," to identify any major civil rights impacts the rule might have on program participants on the basis of age, race, color, national origin, sex or disability. After a careful review of the rule's intent and provisions, FNS has determined that this rule is not expected to affect the participation of protected individuals in SNAP.

##### Executive Order 13175

Executive Order 13175 requires Federal agencies to consult and coordinate with Tribes on a government-to-government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes, or on the distribution of power and responsibilities between the Federal Government and Indian Tribes.

- We are unaware of any current Tribal laws that could be in conflict with this rule.

##### Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. Chap. 35; 5 CFR 1320) requires the Office of Management and Budget (OMB) approve all collections of information by a Federal agency before they can be implemented. Respondents are not required to respond to any collection of information unless it displays a current valid OMB control number.

This rule does not contain information collection requirements subject to approval by the Office of Management and Budget under the Paperwork Reduction Act of 1994.

##### E-Government Act Compliance

The Department is committed to complying with the E-Government Act, to promote the use of the internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.

##### List of Subjects in 7 CFR Part 273

Administrative practice and procedure, Supplemental Nutrition Assistance Program, Thrifty Food Plan.

Accordingly, 7 CFR part 273 is proposed to be amended as follows:

## PART 273.10—DETERMINING HOUSEHOLD ELIGIBILITY AND BENEFIT LEVELS

■ 1. The authority citation for part 273 continues to read as follows:

**Authority:** 7 U.S.C. 2011–2036.

■ 2. In § 273.10, amend paragraph (e)(4)(i) to remove the word “Honolulu” and adding in its place “Hawaii”.

**Tameka Owens,**

*Acting Administrator and Assistant Administrator, Food and Nutrition Service.*

[FR Doc. 2024–27853 Filed 12–2–24; 8:45 am]

**BILLING CODE 3410–30–P**

## DEPARTMENT OF THE TREASURY

### Internal Revenue Service

#### 26 CFR Part 1

[REG–106595–22]

RIN 1545–BQ83

#### Substantiation Requirements and Qualified Nonpersonal Use Vehicles

**AGENCY:** Internal Revenue Service (IRS), Treasury.

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** This document sets forth proposed regulations relating to the definition of qualified nonpersonal use vehicles. Qualified nonpersonal use vehicles are excepted from the substantiation requirements that apply to certain listed property. These proposed regulations add unmarked vehicles used by firefighters or members of a rescue squad or ambulance crew as a new type of qualified nonpersonal use vehicle. These regulations affect governmental units that provide firefighter or rescue squad or ambulance crew member employees with unmarked qualified nonpersonal use vehicles and the employees who use those vehicles.

**DATES:** Written or electronic comments and requests for a public hearing must be received by March 3, 2025.

**ADDRESSES:** Commenters are strongly encouraged to submit public comments electronically via the Federal eRulemaking Portal at <http://www.regulations.gov> (indicate IRS and REG–106595–22) by following the online instructions for submitting comments. Requests for a public hearing must be submitted as prescribed in the “Comments and Requests for a Public Hearing” section. Once submitted to the Federal Rulemaking Portal, comments cannot be edited or withdrawn. The Department of the Treasury (Treasury

Department) and the IRS will publish for public availability any comment submitted electronically or on paper, to the IRS’s public docket. Send paper submissions to CC:PA:01:PR (REG–106595–22), Room 5203, Internal Revenue Service, P.O. Box 7604, Ben Franklin Station, Washington, DC 20044.

#### FOR FURTHER INFORMATION CONTACT:

Concerning the proposed regulations, Stephanie Caden at (202) 317–4750; concerning submissions of comments or requests for a public hearing, the Publications and Regulations section by email at [publichearings@irs.gov](mailto:publichearings@irs.gov) (preferred) or (202) 317–6901 (not toll-free numbers).

#### SUPPLEMENTARY INFORMATION:

##### Authority

This notice of proposed rulemaking contains proposed regulations issued under the authority granted to the Secretary of the Treasury or her delegate (Secretary) by sections 274(p) and 132(o) of the Internal Revenue Code (Code) that would amend the Income Tax Regulations (26 CFR part 1) under sections 274(i) and 132(d) related to qualified nonpersonal use vehicles. Section 274(p) provides the Secretary with an express grant of regulatory authority with respect to section 274 as the Secretary may deem necessary to carry out the purposes of that section. Section 132(o) provides the Secretary with an express grant of regulatory authority with respect to section 132 to prescribe such regulations as may be necessary or appropriate to carry out the purposes of that section. In addition, section 7805(a) authorizes the Secretary to prescribe all needful rules and regulations for the enforcement of the Code.

##### Background

In general, section 274 limits or disallows deductions for certain expenditures that otherwise would be allowable under chapter 1 of the Code, primarily under section 162(a), which allows a deduction for ordinary and necessary expenses paid or incurred during the taxable year in carrying on any trade or business.

Section 274(d), as relevant to these proposed regulations, provides that a taxpayer is not allowed a deduction or credit for certain expenses unless the expenses are substantiated by adequate records or by sufficient evidence corroborating the taxpayer’s own statement as to the amount, time and place, business purposes of the expenditure, and the business relationship to the taxpayer of the

person receiving the benefit. These substantiation requirements apply to expenses incurred in the use of any listed property, as defined in section 280F(d)(4), which includes any passenger automobile and any other property used as a means of transportation.

In 1985, Congress modified section 274(d) and added section 274(i), creating an exception from the substantiation requirements for qualified nonpersonal use vehicles. Public Law 99–44 2, 99 Stat. 77 (1985). Section 274(i) provides that the term “qualified nonpersonal use vehicle” means any vehicle, which by reason of its nature, is not likely to be used more than a de minimis amount for personal purposes.

Both the business and personal use of an employer-provided vehicle that is a qualified nonpersonal use vehicle under section 274(i) qualifies under section 132(d) as a working condition fringe benefit that is excluded from the employee’s income. Thus, if an employer provides an employee with a qualified nonpersonal use vehicle, the employee does not need to keep records of how the vehicle is used, and the total use of the vehicle is excluded from the employee’s income as a working condition fringe benefit under section 132(d). See §§ 1.132–5(h) and 1.274–5(k).

The legislative history to section 274(i) includes examples of qualified nonpersonal use vehicles such as school buses, qualified specialized utility repair trucks, qualified moving vans, clearly marked police and fire vehicles, and unmarked law enforcement vehicles. H.R. Rep. No. 99–67, at 16 (1985) (Conf. Rep.). The legislative history indicates that Congress intended the IRS and the Treasury Department to expand the list to include other vehicles that, by reason of their nature, are highly unlikely to be used more than a very minimal amount for personal purposes. H.R. Rep. No. 99–34, at 11 (1985).

Temporary Regulations § 1.274–5T(k) and (l) were issued in 1985, identifying categories of qualified nonpersonal use vehicles and providing definitions (by cross reference) of terms such as “automobile,” “vehicle,” and “personal use.” TD 8061, 50 FR 46006, 46033, and 46036. Police and fire vehicles that are clearly marked and law enforcement vehicles that are unmarked were included as categories of qualified nonpersonal use vehicles. However, clearly marked vehicles provided to Federal, State, and local government workers who respond to emergency situations as public safety officers but

who are not employed by either a fire department or police department were not included as qualified nonpersonal use vehicles.

In 2008, proposed regulations were issued to incorporate the text of § 1.274–5T(k) and add clearly marked public safety officer vehicles as a new type of qualified nonpersonal use vehicle. 73 FR 32500. An example illustrating the application of the rules to a clearly marked public safety officer vehicle was included at § 1.274–5(k)(8) as *Example 3*.

In 2010, final regulations were published adding clearly marked public safety officer vehicles to the list of qualified nonpersonal use vehicles. TD 9483, 75 FR 27934 (current regulations). As a result, emergency responders who are provided a clearly marked vehicle receive the same tax treatment whether they work for the police department, fire department, or other governmental unit, or any agency or instrumentality thereof.

### Explanation of Provisions

The Treasury Department and the IRS have become aware that certain emergency responders not covered by the current regulations are provided unmarked vehicles by a governmental unit or an agency or instrumentality thereof (governmental unit). In particular, stakeholders have commented that fire chiefs or members of rescue squads or ambulance crews who, when not on a regular shift, need to be on call at all times to respond to emergencies will often be assigned unmarked command vehicles to travel safely and quickly to a scene and perform emergency services. While the authorized use of unmarked vehicles by law enforcement officers employed on a full-time basis by a governmental unit that is responsible for the prevention or investigation of crime involving injury to persons or property (including apprehension or detention of persons for such crimes) satisfies the current regulations governing qualified nonpersonal use vehicles, the use of unmarked vehicles provided to firefighters or members of a rescue squad or ambulance crew does not satisfy the current regulations.

Section 274(i) defines a qualified nonpersonal use vehicle as one which, by reason of its nature, “is not likely to be used more than a de minimis amount for personal purposes.” The current regulations define qualified nonpersonal use vehicles to include clearly marked police, fire, or public safety officer vehicles that are owned or leased by a governmental unit and required to be used for commuting by a police officer,

firefighter, or public safety officer (as defined in section 402(l)(4)(C)) who, when not on a regular shift, is on call at all times. Any personal use (other than commuting) of the vehicle outside the limit of the police officer’s arrest powers or the firefighter’s or public safety officer’s obligation to respond to an emergency must be prohibited by the governmental unit. See § 1.274–5(k)(2)(ii)(A) and (k)(3). The various examples included in § 1.274–5(k)(8) illustrate that a prohibition on personal use (other than commuting) is intended to exist in situations where both commuting and only de minimis personal use, such as personal errands, are permitted.

The current regulations also define qualified nonpersonal use vehicles as including unmarked law enforcement vehicles owned or leased by Federal, State, county, or local governmental agencies or departments that officially authorize the business and personal use of the vehicle by law enforcement officers whom they employ, provided any personal use is incidental to law enforcement functions. See § 1.274–5(k)(2)(ii)(R) and (k)(6). The regulations define law enforcement officers as individuals who are employed on a full-time basis by a governmental unit that is responsible for the prevention or investigation of crime involving injury to persons or property (including apprehension or detention of persons for those crimes), who are authorized by law to carry firearms, execute search warrants, and to make arrests (other than merely a citizen’s arrest), and who regularly carry firearms (except when it is not possible to do so because of the requirements of undercover work). See § 1.274–5(k)(6)(ii). Unmarked law enforcement vehicles allow law enforcement officers to operate inconspicuously, e.g., so that they can conduct these duties while performing undercover work.

Historically, firefighters and rescue squad and ambulance crew members were provided with vehicles that had markings to indicate their status as emergency response vehicles. More recently, the IRS and Treasury Department have become aware that some governmental units are assigning these emergency responders unmarked vehicles due to increased incidents of harassment of first responders and vandalism of clearly marked fire and emergency vehicles and equipment.

Generally, fire and emergency response departments retain the title to the unmarked vehicles and maintain policies that limit the use of the vehicles for personal, non-work purposes. Because firefighters and members of a

rescue squad or ambulance crew respond to a wide variety of emergencies at all hours, including fires, medical crises, vehicular accidents, natural disasters, and terrorist attacks, these vehicles typically are specially equipped to allow firefighters and members of rescue squads or ambulance crews who, even when not on a regular shift, are on call at all times to travel safely and efficiently to the scene of an emergency and provide emergency services. Onboard equipment may include lights and sirens, medical emergency equipment, life-saving devices such as defibrillators, and radios that assist firefighters, rescue squads, or ambulance crews in communicating with a central source and other emergency response crews related, for example, to traffic or hospital capacity. Onboard equipment may also include items such as personal protective equipment (helmet, coat, boots), emergency oxygen tanks, reference books, and laptop computers that enable workers to access important information related to the emergency. Under the current regulations, emergency responders must substantiate all of the time they spend using these unmarked vehicles for work related purposes, and the value of any personal use of these vehicles, even if minimal, must be included in the employees’ taxable income.

Unmarked firefighter and rescue squad or ambulance crew vehicles are less likely to be utilized in undercover work than unmarked law enforcement vehicles. However, the use of unmarked vehicles allows firefighters and other emergency personnel who commute and are required to be on call at all times, even when not on a regular shift, to travel inconspicuously, thereby reducing risk of harassment and vandalism. Also, as described above, unmarked firefighter and rescue squad or ambulance crew vehicles typically are specially outfitted with onboard equipment, which is used by firefighters and emergency personnel to suppress fires, conduct rescue activities, or provide emergency medical services as part of an official emergency response system. Because these vehicles are generally specially outfitted with such equipment, any personal use of these vehicles is likely to be minimal. Thus, adding unmarked firefighter, rescue squad or ambulance crew vehicles as a new category of qualified nonpersonal use vehicle is consistent with the underlying intent of section 274(i).

Accordingly, the proposed regulations would amend § 1.274–5(k)(2)(ii) to add unmarked vehicles used by firefighters, members of rescue squads, or

ambulance crews to the list of qualified nonpersonal use vehicles that are exempt from the substantiation requirements of section 274(d). In addition, the proposed regulations would amend § 1.274–5(k) to add a new § 1.274–5(k)(7) providing definitions for the terms “unmarked firefighter, rescue squad or ambulance crew vehicles”, “firefighter,” and “member of a rescue squad or ambulance crew,” and add § 1.274–5(k)(9)(v) (*Example 5*) illustrating the new provision.

The proposed regulations provide that the substantiation requirements of section 274(d) do not apply to an unmarked firefighter, rescue squad, or ambulance crew vehicle that is required to be used for commuting by the firefighter or member of a rescue squad or ambulance crew, who, when not on a regular shift, is on call at all times. Because any personal use of an unmarked firefighter, rescue squad, or ambulance crew vehicle should be minimal and incidental to its main purpose in providing emergency services, the proposed regulations also provide that personal use of the vehicle, other than commuting and personal errands, that is outside the firefighter’s or rescue squad or ambulance crew member’s obligation to respond to an emergency must be prohibited by the governmental unit that owns or leases the vehicle and employs the firefighter or rescue squad or ambulance crew member.

The proposed regulations define an “unmarked firefighter, rescue squad, or ambulance crew vehicle” as a vehicle, that is owned or leased by a governmental unit, or any agency or instrumentality thereof, and that is specially outfitted to allow firefighters or members of rescue squads and ambulance crews to travel safely and efficiently to the scene of an emergency and provide emergency services. The description of the types of special equipment found in the unmarked vehicles is derived from information provided by stakeholders requesting updates to the current regulations. The proposed regulations also provide that a license plate marking or insignia do not disqualify a vehicle from being an unmarked firefighter, rescue squad, or ambulance crew vehicle.

The definition of “firefighter” for purposes of these proposed regulations, is modeled in part on the definition of “law enforcement officer” in § 1.274–5(k)(6)(ii) and draws from relevant language in the Public Safety Officers’ Benefits Act (PSOB Act)’s definition of “action outside of jurisdiction” in 34 U.S.C. 10284(1)(C), as well as from outside sources. The definition of

“member of a rescue squad or ambulance crew” in these proposed regulations is the same definition that is set forth in 34 U.S.C. 10284(10), which was enacted as an amendment to the PSOB Act that establishes a framework for the expeditious and fair processing of claims brought by disabled law enforcement officers, firefighters, and other first responders or their survivors. H. Rep. No. 112–548 (2012).

These proposed regulations provide an example of circumstances in which a member of a rescue squad or ambulance crew assigned an unmarked vehicle would qualify for the exclusion under this new provision.

Finally, these proposed regulations provide conforming amendments to §§ 1.132–1(g) and 1.132–5(h)(1).

The purpose of these proposed regulations is to ensure that firefighters and members of rescue squads and ambulance crews who are officially authorized to use specially equipped unmarked vehicles to respond to emergencies are accorded the same tax treatment as other first responders who use qualified nonpersonal use vehicles. The Treasury Department and the IRS request comments on whether the definitions of “unmarked firefighter, rescue squad or ambulance crew vehicles,” “firefighter,” and “member of a rescue squad or ambulance crew,” are sufficient to accomplish the intended purpose of these proposed regulations or whether any of them might lead to potential abuse.

#### Applicability Date

Proposed § 1.274–5(k)(2)(ii)(S), (k)(7), (k)(9)(v) and references to § 1.274–5(k)(9) in § 1.132–5(h) are proposed to apply to tax years beginning on or after the date of publication of final regulations in the **Federal Register**. Until the date of publication of final regulations in the **Federal Register**, for purposes of proposed § 1.274–5(k)(2)(ii)(S), (k)(7), (k)(9)(v) and references to § 1.274–5(k)(9) in § 1.132–5(h), taxpayers may rely on the guidance provided in these proposed regulations.

#### Special Analyses

##### *I. Regulatory Planning and Review—Economic Analysis*

Pursuant to the Memorandum of Agreement, Review of Treasury Regulations under Executive Order 12866 (June 9, 2023), tax regulatory actions issued by the IRS are not subject to the requirements of section 6 of Executive Order 12866, as amended. Therefore, a regulatory impact assessment is not required.

##### *II. Paperwork Reduction Act*

This proposed regulation does not create new collection requirements, as defined under the Paperwork Reduction Act (44 U.S.C. 35); and does not alter any previously approved Office of Management and Budget information collection requirements and their associated burden.

##### *III. Regulatory Flexibility Act*

It is hereby certified that these proposed regulations will not have a significant economic impact on a substantial number of small entities pursuant to the Regulatory Flexibility Act (5 U.S.C. chapter 6). This certification is based on the fact that these proposed regulations do not impose any new or different requirements on small entities. The proposed regulations would apply only to employers that utilize unmarked firefighter, rescue squad, or ambulance vehicles and therefore would affect a relatively small number of entities, most of which would be public entities. In addition, these proposed regulations would not affect employment tax reporting or require any additional substantiation. Rather, the proposed regulations exempt affected entities from substantiation requirements and for this reason do not add any economic burden to affected entities. Therefore, a Regulatory Flexibility Analysis under the Regulatory Flexibility Act (5 U.S.C. chapter 6) is not required.

##### *IV. Section 7805(f)*

Pursuant to section 7805(f), this notice of proposed rulemaking has been submitted to the Chief Council for the Office of Advocacy of the Small Business Administration for comment on its impact on small business.

##### *V. Unfunded Mandates Reform Act*

Section 202 of the Unfunded Mandates Reform Act of 1995 requires that agencies assess anticipated costs and benefits and take certain other actions before issuing a final rule that includes any Federal mandate that may result in expenditures in any one year by a State, local, or Tribal government, in the aggregate, or by the private sector, of \$100 million in 1995 dollars, updated annually for inflation. These proposed regulations do not include any Federal mandate that may result in expenditures by State, local, or Tribal governments, or by the private sector, in excess of that threshold.

##### *VI. Executive Order 13132: Federalism*

Executive Order 13132 (Federalism) prohibits an agency from publishing any rule that has federalism implications if

the rule either imposes substantial, direct compliance costs on State and local governments, and is not required by statute, or preempts State law, unless the agency meets the consultation and funding requirements of section 6 of the Executive order. These proposed regulations do not have federalism implications, do not impose substantial direct compliance costs on State and local governments, and do not preempt State law within the meaning of the Executive order.

**Comments and Request for a Public Hearing**

Before final regulations regarding the definition of qualified nonpersonal use vehicles are adopted, consideration will be given to any written or electronic comments on these proposed amendments that are submitted timely (in the manner described under the ADDRESSES heading) to the IRS. The Treasury Department and the IRS request comments on all aspects of the proposed regulations. Any electronic or paper comments submitted, will be made available at <https://www.regulations.gov> or upon request.

A public hearing will be scheduled if requested in writing by any person who timely submits electronic or written comments. Requests for a hearing are strongly encouraged to be submitted electronically. If a public hearing is scheduled, notice of the date and time for the public hearing will be published in the **Federal Register**.

**Drafting Information**

The principal author of these regulations is Stephanie L. Caden of the Office of the Associate Chief Counsel (Employee Benefits, Exempt Organizations, and Employment Taxes). However, other personnel from the Treasury Department and the IRS participated in their development.

**List of Subjects in 26 CFR Part 1**

Income taxes, Reporting and recordkeeping requirements.

**Proposed Amendments to the Regulations**

Accordingly, the Treasury Department and IRS propose to amend 26 CFR part 1 as follows:

**PART 1—INCOME TAXES**

■ **Paragraph 1.** The authority citation for part 1 is amended by revising the entries for §§ 1.132–0 through 1.132–8T and § 1.274–5 to read in part as follows:

Authority: 26 U.S.C. 7805 \* \* \*  
\* \* \* \* \*

Sections 1.132–0 through 1.132–8T also issued under 26 U.S.C. 132(o).  
\* \* \* \* \*

Section 1.274–5 also issued under 26 U.S.C. 274(p).  
\* \* \* \* \*

■ **Par. 2.** Section 1.132–1 is amended by adding a sentence to the end of paragraph (g) to read as follows:

**§ 1.132–1 Exclusion from gross income for certain fringe benefits.**

\* \* \* \* \*

(g) \* \* \* In addition, references to § 1.274–5(k)(9) in § 1.132–5(h) are applicable as of [date of publication of final regulations in the **Federal Register**].

■ **Par. 3.** Section 1.132–5 is amended by revising paragraph (h)(1) to read as follows:

**§ 1.132–5 Working condition fringes.**

\* \* \* \* \*

(h) \* \* \* (1) *In general.* Except as provided in paragraph (h)(2) of this section, 100 percent of the value of the use of a qualified nonpersonal use vehicle (as described in § 1.274–5(k)) is excluded from gross income as a working condition fringe, provided that, in the case of a vehicle described in § 1.274–5(k)(3) through (9), the use of the vehicle conforms to the requirements of § 1.274–5(k)(3) through (9).

\* \* \* \* \*

■ **Par. 4.** Section 1.274–5 is amended by:

- 1. Redesignating paragraph (k)(2)(ii)(S) as paragraph (k)(2)(ii)(T) and adding new paragraph (k)(2)(ii)(S);
  - 2. Redesignating paragraph (k)(8) as paragraph (k)(9);
  - 3. Redesignating paragraph (k)(7) as new paragraph (k)(8) and adding new paragraph (k)(7);
  - 4. In newly redesignated paragraph (k)(9), designating *Examples 1* through 4 as paragraphs (k)(9)(i) through (k)(9)(iv), respectively.
  - 5. Adding paragraph (k)(9)(v); and
  - 6. Revising paragraph (m).
- The additions read as follows:

**§ 1.274–5 Substantiation requirements.**

\* \* \* \* \*

- (k) \* \* \*
- (2) \* \* \*
- (ii) \* \* \*

(S) Unmarked firefighter, rescue squad, or ambulance crew vehicles (as defined in paragraph (k)(7) of this section).

\* \* \* \* \*

(7) *Unmarked firefighter, rescue squad, or ambulance crew vehicles—(i) In general.* The substantiation requirements of section 274(d) and this

section do not apply to an unmarked firefighter, rescue squad, or ambulance crew vehicle required to be used for commuting by the firefighter or member of a rescue squad or ambulance crew, who, when not on a regular shift, is on call at all times. Personal use (other than commuting) of the vehicle outside the firefighter's or rescue squad or ambulance crew member's obligation to respond to an emergency must be prohibited by the governmental unit, or any agency or instrumentality thereof, that owns or leases the vehicle and employs the firefighter, rescue squad, or ambulance crew member.

(ii) *Unmarked firefighter, rescue squad, or ambulance crew vehicle defined.* An *unmarked firefighter, rescue squad, or ambulance crew vehicle* is an unmarked vehicle used by a firefighter, or member of a rescue squad or ambulance crew, that is owned or leased by a governmental unit, or any agency or instrumentality thereof, and that is specially outfitted to allow firefighters or members of rescue squads and ambulance crews to travel safely and efficiently to the scene of an emergency and provide emergency services. Onboard equipment on the vehicles includes but is not limited to lights and sirens, medical emergency equipment, life-saving devices such as defibrillators, and radios that assist firefighters, rescue squads, or ambulance crews in communicating with a central source or other emergency response crews related, for example, to traffic or hospital capacity. Onboard equipment may also include items such as personal protective equipment (helmet, coat, boots), emergency oxygen tanks, reference books, and laptop computers that enable workers to access important information related to the emergency. A license plate marking or insignia does not disqualify a vehicle from being an unmarked firefighter, rescue squad, or ambulance crew vehicle for purposes of this paragraph (k)(7).

(iii) *Firefighter.* The term *firefighter* means an individual who is employed by a governmental unit, or any agency or instrumentality thereof, that is responsible for firefighting, rescue activity, or the provision of emergency medical care, and other related emergency services to prevent injury to persons or property and has the official authority to engage in fire suppression and provide related emergency services.

(iv) *Member of a rescue squad or ambulance crew.* For purposes of this paragraph (k)(7), the term *member of a*

*rescue squad or ambulance crew* has the same meaning as in 34 U.S.C. 10284(10).

\* \* \* \* \*

(9) \* \* \*

(v) *Example 5.* Emergency medical technician, X, is a *member of a rescue squad* employed by City M. X is provided with an unmarked vehicle (equipped with sirens and medical equipment) for use in responding to emergencies. X, along with other members of the rescue squad, is ordinarily on duty for a regular shift, and on call during the other hours of the day. X is required to use the unmarked rescue squad vehicle to commute to X's home in City M. The rescue squad's official policy regarding unmarked rescue squad vehicles prohibits personal

use (other than commuting) of the vehicles outside the city limits. When not using the vehicle on the job, X uses the vehicle only for commuting, personal errands on the way between work and home, and personal errands within City M. All use of the vehicle by X conforms to the requirements of paragraph (k)(7) of this section. Therefore, the value of that use is excluded from X's gross income as a working condition fringe and the vehicle is not subject to the substantiation requirements of section 274(d).

\* \* \* \* \*

(m) *Applicability date.* This section applies to expenses paid or incurred after December 31, 1997. However,

paragraph (j)(3) of this section applies to expenses paid or incurred after September 30, 2002, and paragraph (k) of this section applies to clearly marked public safety officer vehicles, as defined in paragraph (k)(3) of this section, only with respect to uses occurring after May 19, 2010. The rules of paragraphs (k)(2)(ii)(S), (k)(7) and (k)(9)(v) of this section apply to taxable years ending on or after [date of publication of final regulations in the **Federal Register**].

**Douglas W. O'Donnell,**

*Deputy Commissioner.*

[FR Doc. 2024-28040 Filed 12-2-24; 8:45 am]

**BILLING CODE 4830-01-P**

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

## DEPARTMENT OF AGRICULTURE

### Submission for OMB Review; Comment Request

The Department of Agriculture has submitted the following information collection requirement(s) to OMB for review and clearance under the Paperwork Reduction Act of 1995, Public Law 104–13. Comments are requested regarding; whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; the accuracy of the agency's estimate of burden including the validity of the methodology and assumptions used; ways to enhance the quality, utility and clarity of the information to be collected; and ways to minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Comments regarding this information collection received by January 2, 2025 will be considered. Written comments and recommendations for the proposed information collection should be submitted within 30 days of the publication of this notice on the following website [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting "Currently under 30-day Review—Open for Public Comments" or by using the search function. An agency may not conduct or sponsor a collection of information unless the collection of information displays a currently valid OMB control number and the agency informs potential persons who are to respond to the collection of information that such persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

### Animal Plant and Health Inspection Service

*Title:* Unified website for Biotechnology Regulation; Contact Page. *OMB Control Number:* 0579–NEW.

*Summary:* In 1986, the Coordinated Framework for the Regulation of Biotechnology (Coordinated Framework) was published by the Office of Science and Technology Policy and explained the regulatory roles for the U.S. Department of Agriculture, the U.S. Environmental Protection Agency (EPA), and the U.S. Food and Drug Administration (FDA), (herein, the Agencies) and how Federal agencies use existing Federal statutes to ensure public health and environmental safety while maintaining regulatory flexibility to avoid impeding the growth of the biotechnology industry. The Coordinated Framework was subsequently updated in 1992 (57 FR 6753–6762; February 27, 1992) and 2017, taking into account advances that had occurred in the field of biotechnology.

Within the USDA, the Animal and Plant Health Inspection Service's (APHIS') Biotechnology Regulatory Services unit is responsible for ensuring that organisms developed using genetic engineering, such as genetically modified plants, insects, and microbes do not pose a plant pest risk. APHIS derives its authority to promulgate its biotechnology regulations from provisions of the Plant Protection Act (PPA, 7 U.S.C. 7701 *et seq.*) and the Virus-Serum-Toxin Act (VRTA, 21 U.S.C. 151–159). The EPA is charged with protecting human health and the environment through ensuring the safety of pesticides and other chemicals, including those developed using genetic engineering. The EPA derives its regulatory authority from provisions of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA, 7 U.S.C. 136 *et seq.*) and the Toxic Substances Control Act (TSCA, 15 U.S.C. 2601 *et seq.*). The FDA is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices; and by ensuring the safety of our nation's food supply, cosmetics, and products that emit radiation, which includes oversight of food and feed. FDA derives its regulatory authority from provisions of the Federal Food, Drug and Cosmetic

Act (FFDCA, 21 U.S.C. 301–392). Together with the USDA's Food Safety and Inspection Service (FSIS), FDA has oversight of certain chemicals modified using genetic engineering. FSIS derives its regulatory authority from the Federal Meat Inspection Act (FMIA, 21 U.S.C. 601 *et seq.*) and the Poultry Products Protection Act (PPIA, 21 U.S.C. ch.10, 451 *et seq.*).

On September 12, 2022, Executive Order (E.O.) 14081, *Advancing Biotechnology and Biomanufacturing Innovation for a Sustainable, Safe, and Secure American Bioeconomy*, was published and directed the Agencies, among other things, to build on the Unified website for Biotechnology Regulation developed pursuant to E.O. 13874, *Modernizing the Regulatory Framework for Agricultural Biotechnology Products*, June 11, 2019, by including on the website the information developed under subsection (b) of section 8 of E.O. 14081, and by enabling developers of biotechnology products to submit inquiries about a particular product and promptly receive a single, coordinated response that provides, to the extent practicable, information and, when appropriate, informal guidance regarding the process that the developers must follow for Federal regulatory review.

*Need and Use of Information:* The necessity for this information collection arises from E.O. 13874, Section 5, *Unified Biotechnology Web-Based Platform*, and E.O. 14081, Section 8(d). These provisions seek to ensure that innovators can easily navigate the Federal regulatory system for products of biotechnology by directing USDA, EPA, and FDA to jointly establish a web-based platform that contains and provides links to relevant United States Government regulatory information for biotechnology products. USDA–APHIS, EPA, and FDA will use a web-form on the contact page of the Unified website to enable site visitors to ask questions, make comments, or request a meeting with one or all of the sponsoring agencies. The web-form will collect basic contact information such as the name and email address of contact page respondents, as well as the respondents' questions or comments and their meeting requests. Respondent use of the contact page is voluntary.

*Description of Respondents:* Business. *Number of Respondents:* 30.

*Frequency of Responses:* Reporting:  
On occasion; Annual.  
*Total Burden Hours:* 15.

**Rachelle Ragland-Greene,**  
*Departmental Information Collection  
Clearance Officer.*

[FR Doc. 2024-28350 Filed 12-2-24; 8:45 am]

**BILLING CODE 3410-34-P**

## DEPARTMENT OF COMMERCE

### Census Bureau

#### Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; Spatial, Address, and Imagery Data Program

The Department of Commerce will submit the following information collection request to the Office of Management and Budget (OMB) for review and clearance in accordance with the Paperwork Reduction Act of 1995, on or after the date of publication of this notice. We invite the general public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public's reporting burden. Public comments were previously requested via the **Federal Register** on Tuesday, July 2, 2024, during a 60-day comment period. This notice allows for an additional 30 days for public comments.

*Agency:* U.S. Census Bureau,  
Commerce.

*Title:* Spatial, Address, and Imagery  
Data Program.

*OMB Control Number:* 0607-1008.

*Form Number(s):* Feedback Form.

*Type of Request:* Regular submission,  
request for a revision of a currently  
approved collection.

*Number of Respondents:*

- Census Bureau Contact with Respondents: 1,500 (500/year).
- Census Bureau Acquisition of Respondent Geographic Data and Content Clarification: 750 (250/year).
- Feedback: 75 (25/year).

*Average Hours per Response:*

- Census Bureau Contact with Respondents: 1 hour.
- Census Bureau Acquisition of Respondent Geographic Data and Content Clarification: 1.5 hours.

- Feedback: 1 hour.

*Burden Hours:* 2,700 hours.

- Census Bureau Contact with Respondents: 1,500 hours.
- Census Bureau Acquisition of Respondent Geographic Data and Content Clarification: 1,125 hours.

- Feedback: 75 hours.

*Needs and Uses:* The Spatial, Address, and Imagery Data (SAID) Program is one of many voluntary geographic partnership programs that collects data to update and maintain the U.S. Census Bureau's geographic database, known as the Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) System. The MAF/TIGER System is vital for the Census Bureau to collect, process, tabulate, and disseminate data.

The geographic framework within the MAF/TIGER System enables the Census Bureau field personnel to navigate to the appropriate locations for data collection. It enables the Census Bureau to define geographic boundaries, including census blocks, and accurately link demographic data from surveys and the decennial census to census blocks, locations, and areas, such as counties, cities, and school districts for data tabulation and dissemination.

The SAID Program supports the Census Bureau's ongoing demographic surveys and 2030 Census planning efforts by continuing to improve address coverage, collect and update street centerlines, and enhance the overall quality and integrity of the MAF/TIGER System after major census update programs have concluded. The SAID Program provides the Census Bureau with a continuous method to obtain current, accurate, and complete address, street centerline, and imagery data.

Since its inception, the SAID Program has allowed the Census Bureau to update addresses and street centerlines across the country. Moving forward, the SAID Program will continue to acquire addresses, street centerlines, and imagery in areas identified with housing unit growth or change or where the Census Bureau has inadequate coverage or data, to continue updating and improving the MAF/TIGER System.

The Census Bureau is adding a feedback component to its geographic partnership programs to improve the administration of the respective program and potentially reduce the future burden. Participants may be asked to provide their feedback on materials, method(s) of data collection, manner of communications, and the usability of the program applications and tools.

The SAID Program follows the process below:

- The Census Bureau invites partners in targeted areas to participate each fiscal year, including Tribal, State, county, and local governments; Federal agencies; and other authoritative organizations.

- Partners are asked to provide a current address list with associated location points and attributes, a street centerline file, and/or imagery data for their jurisdiction that is no more than two years old.

- Partners upload the requested data files using the Secure Web Incoming Module (SWIM) or equivalent file transfer module, deliver large imagery datasets on hard drives, or the Census Bureau acquires the files/data through direct download. If the data file size is too large to submit through SWIM, a hard drive will be sent to the participant for file upload and sent back to the Census Bureau.

- The Census Bureau validates, then updates the MAF/TIGER System with the address and street centerline data provided by partners and uses the provided imagery for quality control and change detection.

- The Census Bureau uses these updated addresses, streets, and imagery to support Census Bureau field operations, decennial census operations, ongoing demographic survey response collection, and data tabulation.

- The Census Bureau provides partners feedback regarding the data they supplied.

*Affected Public:* Tribal, State, county, and local governments, and organizations as well as other Federal agencies.

*Frequency:* Annual.

*Respondent's Obligation:* Voluntary.

*Legal Authority:* 13 U.S.C. 6, 16, 141, and 193.

This information collection request may be viewed at [www.reginfo.gov](http://www.reginfo.gov). Follow the instructions to view the Department of Commerce collections currently under review by OMB.

Written comments and recommendations for the proposed information collection should be submitted within 30 days of the publication of this notice on the following website [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting "Currently under 30-day Review—Open for Public Comments" or by using the search function and entering either the title of the collection or the OMB Control Number 0607-1008.

**Sheleen Dumas,**

*Departmental PRA Clearance Officer, Office of the Under Secretary for Economic Affairs, Commerce Department.*

[FR Doc. 2024-28269 Filed 12-2-24; 8:45 am]

**BILLING CODE 3510-07-P**



**DEPARTMENT OF COMMERCE****Economic Development Administration****Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; Amend an Investment Award and Project Service Maps**

**AGENCY:** Economic Development Administration, Department of Commerce.

**ACTION:** Notice of information collection, request for comment.

**SUMMARY:** The Department of Commerce, in accordance with the Paperwork Reduction Act of 1995 (PRA), invites the general public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public's reporting burden. The purpose of this notice is to allow for 60 days of public comment preceding submission of the collection to OMB.

**DATES:** To ensure consideration, comments regarding this proposed information collection must be received on or before February 3, 2025.

**ADDRESSES:** Interested persons are invited to submit written comments by mail to Jeff Roberson, Chief Counsel, U.S. Department of Commerce, via email at [jroberson@eda.gov](mailto:jroberson@eda.gov) or via phone at (202) 482-1315. You may also submit comments to [PRAcomments@doc.gov](mailto:PRAcomments@doc.gov). Please reference OMB Control Number 0610-0102 in the subject line of your comments. Do not submit Confidential Business Information or otherwise sensitive or protected information.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or specific questions related to collection activities should be directed to Jeff Roberson, Chief Counsel, Economic Development Administration, U.S. Department of Commerce, via email at [jroberson@eda.gov](mailto:jroberson@eda.gov) or via phone at (202) 482-1315.

**SUPPLEMENTARY INFORMATION:****I. Abstract**

The Economic Development Administration (EDA) leads the Federal economic development agenda by promoting innovation and competitiveness, preparing American regions for growth and success in the worldwide economy. Guided by the basic principle that sustainable economic development should be locally-driven, EDA works directly with communities and regions to help them

build the capacity for economic development based on local business conditions and needs. The Public Works and Economic Development Act of 1965 (PWEDA) (42 U.S.C. 3121 *et seq.*) is EDA's organic authority and is the primary legal authority under which EDA awards financial assistance. Under PWEDA, EDA provides financial assistance to both rural and urban distressed communities by fostering entrepreneurship, innovation, and productivity through investments in infrastructure development, capacity building, and business development to attract private capital investments and new and better jobs to regions experiencing economic distress. Further information on EDA programs and financial assistance opportunities can be found at [www.eda.gov](http://www.eda.gov).

To effectively administer and monitor its economic development assistance programs, EDA collects certain information from applicants for, and recipients of, EDA investment assistance. The purpose of this notice is to seek comments from the public and other Federal agencies on a request for an extension of this information collection where a recipient must submit a written request to EDA to amend an investment award and provide such information and documentation as EDA deems necessary to determine the merit of altering the terms of an award (see 13 CFR 302.7(a)). Additionally, EDA *may* require a recipient to submit a project service map and information from which to determine whether services are provided to all segments of the region being assisted (see 13 CFR 302.16(c)). This information collection is scheduled to expire on January 31, 2025.

**II. Method of Collection**

Amendments and project service maps are collected via both paper or electronic submissions, including email. A recipient must submit a written request to EDA to amend an investment award and provide such information and documentation as EDA deems necessary to determine the merit of altering the terms of an award (see 13 CFR 302.7(a)). EDA *may* require a recipient to submit a project service map and information from which to determine whether services are provided to all segments of the region being assisted (see CFR 302.16(c)). EDA is not proposing any changes to the current information collection request.

**III. Data**

*OMB Control Number:* 0610-0102.  
*Form Number(s):* None.

*Type of Review:* Regular submission; Revision of a currently approved collection.

*Affected Public:* Current recipients of EDA awards, including: (1) cities or other political subdivisions of a State, including a special purpose unit of State or local government engaged in economic or infrastructure development activities, or a consortium of political subdivisions; (2) States; (3) institutions of higher education; (4) public or private non-profit organizations or associations; (5) District Organizations; (6) Indian Tribes; and (7) (for training, research, and technical assistance awards only) individuals and for-profit businesses.

*Estimated Number of Respondents:* 632 (600 requests for amendments to construction awards, 30 requests for amendments to non-construction awards, 2 project service maps).

*Estimated Time per Response:* 2 hours for an amendment to a construction award, 1 hour for an amendment to a non-construction award, 6 hours for a project service map.

*Estimated Total Annual Burden Hours:* 1,242 hours.

*Estimated Total Annual Cost to Public:* \$85,201 (cost assumes application of U.S. Bureau of Labor Statistics September 2024 hourly employer costs for employee compensation for professional and related occupations of \$68.60).

*Legal Authority:* The Public Works and Economic Development Act of 1965 (42 U.S.C. 3121 *et seq.*).

**IV. Request for Comments**

We are soliciting public comments to permit the Department/Bureau to: (a) Evaluate whether the proposed information collection is necessary for the proper functions of the Department, including whether the information will have practical utility; (b) Evaluate the accuracy of our estimate of the time and cost burden for this proposed collection, including the validity of the methodology and assumptions used; (c) Evaluate ways to enhance the quality, utility, and clarity of the information to be collected; and (d) Minimize the reporting burden on those who are to respond, including the use of automated collection techniques or other forms of information technology.

Comments that you submit in response to this notice are a matter of public record. We will include or summarize each comment in our request to OMB to approve this ICR. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your

personal identifying information—may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

**Sheleen Dumas,**

*Departmental PRA Clearance Officer, Office of the Under Secretary for Economic Affairs, Commerce Department.*

[FR Doc. 2024–28292 Filed 12–2–24; 8:45 am]

BILLING CODE 3510–34-P

## DEPARTMENT OF COMMERCE

### First Responder Network Authority

#### Public Combined Board and Board Committees Meeting

**AGENCY:** First Responder Network Authority (FirstNet Authority), National Telecommunications and Information Administration (NTIA), U.S. Department of Commerce.

**ACTION:** Announcement of meeting.

**SUMMARY:** The FirstNet Authority Board will convene an open public meeting of the Board and Board Committees.

**DATES:** December 11, 2024; 9:30 a.m. to 10:30 a.m. mountain time (MT); Boulder, Colorado.

**ADDRESSES:** The meeting will be held at the Boulder County Sheriff's Office—5600 Flatiron Pkwy, Boulder, CO 80301. Members of the public are not able to attend in-person but may listen to the meeting and view the presentation by joining from the Microsoft Teams meeting link: [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_ywjhymvnmjgtyzhhs00mtlmltk4mtctmjy4n2izyme4mzy5%40thread.v2/0?context=%7b%22tid%22%3a%22db2827d-3655-460f-9157-5f2e4f5219d9%22%2c%22oid%22%3a%22b5fc9bbe-689b-4d3e-8fd6-82c8c77497e1%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ywjhymvnmjgtyzhhs00mtlmltk4mtctmjy4n2izyme4mzy5%40thread.v2/0?context=%7b%22tid%22%3a%22db2827d-3655-460f-9157-5f2e4f5219d9%22%2c%22oid%22%3a%22b5fc9bbe-689b-4d3e-8fd6-82c8c77497e1%22%7d).

Meeting ID: 237 467 598 911.

Passcode: zFQQdS.

If you experience technical difficulty, contact the FirstNet Authority Customer Support Service Desk at [CCSD@FirstNet.gov](mailto:CCSD@FirstNet.gov). Teams link and information can also be found on the FirstNet Authority website ([FirstNet.gov](https://www.firstnet.gov)).

#### FOR FURTHER INFORMATION CONTACT:

*General information:* Jennifer Watts, (571) 665–6178, [Jennifer.Watts@FirstNet.gov](mailto:Jennifer.Watts@FirstNet.gov).

*Media inquiries:* Ryan Oremland, (571) 665–6186, [Ryan.Oremland@FirstNet.gov](mailto:Ryan.Oremland@FirstNet.gov).

#### SUPPLEMENTARY INFORMATION:

*Background:* The Middle-Class Tax Relief and Job Creation Act of 2012 (codified at 47 U.S.C. 1401 *et seq.*) (Act) established the FirstNet Authority as an independent authority within NTIA. The Act directs the FirstNet Authority to ensure the building, deployment, and operation of a nationwide interoperable public safety broadband network. The FirstNet Authority Board is responsible for making strategic decisions regarding the operations of the FirstNet Authority.

*Matters to be Considered:* The FirstNet Authority will post a detailed agenda for the Combined Board and Board Committees Meeting on [FirstNet.gov](https://www.firstnet.gov) prior to the meeting. The agenda topics are subject to change. Please note that the subjects discussed by the Board and Board Committees may involve commercial or financial information that is privileged or confidential, or other legal matters affecting the FirstNet Authority. As such, the Board may, by majority vote, close the meeting only for the time necessary to preserve the confidentiality of such information, pursuant to 47 U.S.C. 1424(e)(2).

*Other Information:* The public Combined Board and Board Committees Meeting is accessible to people with disabilities. Individuals requiring accommodations, such as sign language interpretation or other ancillary aids, are asked to notify Jennifer Watts at (571) 665–6178 or email: [Jennifer.Watts@FirstNet.gov](mailto:Jennifer.Watts@FirstNet.gov) before the meeting.

*Records:* The FirstNet Authority maintains records of all Board proceedings. Minutes of the Combined Board and Board Committees Meeting will be available on [FirstNet.gov](https://www.firstnet.gov).

Dated: November 27, 2024.

**Jennifer Watts,**

*Board Secretary, First Responder Network Authority.*

[FR Doc. 2024–28359 Filed 12–2–24; 8:45 am]

BILLING CODE P

## DEPARTMENT OF COMMERCE

### International Trade Administration

[A–588–869]

#### Diffusion-Annealed, Nickel-Plated Flat-Rolled Steel Products From Japan: Final Results of Antidumping Duty Administrative Review; 2022–2023

**AGENCY:** Enforcement and Compliance, International Trade Administration, Department of Commerce.

**SUMMARY:** The U.S. Department of Commerce (Commerce) determines that certain producers/exporters subject to

this administrative review made sales of subject merchandise at less than normal value during the period of review (POR) May 1, 2022, through April 30, 2023.

**DATES:** Applicable December 3, 2024.

**FOR FURTHER INFORMATION CONTACT:** Lilit Astvatsatrian, AD/CVD Operations, Office IX, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Washington, DC 20230; telephone: (202) 482–6412.

#### SUPPLEMENTARY INFORMATION:

##### Background

On May 23, 2024, Commerce published the *Preliminary Results* and invited comments from interested parties.<sup>1</sup> On June 21, 2024, Toyo Kohan Co., Ltd. (Toyo Kohan), the sole mandatory respondent, submitted its case brief. On June 27, 2024, Thomas Steel Strip Corporation (the petitioner) submitted its rebuttal brief. On July 22, 2024, Commerce tolled certain deadlines in this administrative proceeding by seven days.<sup>2</sup> On August 27, 2024, Commerce extended the deadline for these final results until November 26, 2024.<sup>3</sup> For a complete description of the events that occurred since the *Preliminary Results*, see the Issues and Decision Memorandum.<sup>4</sup> Commerce conducted this administrative review in accordance with section 751 of the Tariff Act of 1930, as amended (the Act).

##### Scope of the Order<sup>5</sup>

The products subject to the *Order* are nickel-plated steel products. For a full description of the scope of the *Order*, see the Issues and Decision Memorandum.

##### Analysis of Comments Received

All issues raised in the case and rebuttal briefs are listed in the appendix

<sup>1</sup> See *Diffusion-Annealed, Nickel-Plated Flat-Rolled Steel Products from Japan: Preliminary Results and Partial Rescission of Antidumping Duty Administrative Review; 2022–2023*, 89 FR 45638 (May 23, 2024) (*Preliminary Results*), and accompanying Preliminary Decision Memorandum (PDM).

<sup>2</sup> See Memorandum, “Tolling of Deadlines for Antidumping and Countervailing Duty Proceedings,” dated July 22, 2024.

<sup>3</sup> See Memorandum, “Extension of Deadline for Final Results of 2022–2023 Antidumping Duty Administrative Review,” dated August 27, 2024.

<sup>4</sup> See Memorandum, “Issues and Decision Memorandum for the Final Results of the 2022–2023 Administrative Review of the Antidumping Duty Order on Diffusion-Annealed, Nickel-Plated Flat-Rolled Steel Products from Japan,” dated concurrently with, and hereby adopted by, this notice (Issues and Decision Memorandum).

<sup>5</sup> See *Diffusion-Annealed, Nickel-Plated Flat-Rolled Steel Products from Japan: Antidumping Duty Order*, 79 FR 30816 (May 29, 2014) (*Order*).

to this notice and addressed in the Issues and Decision Memorandum. The Issues and Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance’s Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). ACCESS is available to registered users at <https://access.trade.gov>. In addition, a complete version of the Issues and Decision Memorandum can be accessed directly at <https://access.trade.gov/public/FRNoticesListLayout.aspx>.

**Changes Since the Preliminary Results**

Based on a review of the record and comments received from interested parties regarding our *Preliminary Results*, we made certain changes to the weighted-average dumping margin calculations for Toyo Kohan.<sup>6</sup>

**Final Results of Review**

For these final results, we determine the following estimated weighted-average dumping margin exists for the period May 1, 2022, through April 30, 2023:

Producer or exporter	Weighted-average dumping margin (percent)
Toyo Kohan Co., Ltd .....	4.44

**Disclosure**

Commerce intends to disclose the calculations performed for Toyo Kohan in connection with these final results to interested parties within five days of any public announcement or, if there is no public announcement, within five days of the date of publication of this notice in the **Federal Register**, in accordance with 19 CFR 351.224(b).

**Assessment Rates**

Pursuant to section 751(a)(2)(C) of the Act and 19 CFR 351.212(b)(1), Commerce has determined, and U.S. Customs and Border Protection (CBP) shall assess, antidumping duties on all appropriate entries of subject merchandise in accordance with the final results of this review.

For Toyo Kohan, we calculated importer-specific *ad valorem* duty assessment rates on the basis of the ratio of the total amount of dumping calculated for each importer’s examined sales and the total entered value of those sales in accordance with 19 CFR 351.212(b)(1). Where either the respondent’s weighted-average dumping

margin is zero or *de minimis* within the meaning of 19 CFR 351.106(c)(1), or an importer-specific assessment rate is zero or *de minimis* (*i.e.*, less than 0.5 percent), we will instruct CBP to liquidate the appropriate entries without regard to antidumping duties.

Commerce’s “automatic assessment” practice will apply to entries of subject merchandise during the POR produced by Toyo Kohan for which it did not know that the merchandise it sold to an intermediary (*e.g.*, a reseller, trading company, or exporter) was destined for the United States. In such instances, we will instruct CBP to liquidate unreviewed entries at the all-others rate established in the less-than-fair-value (LTFV) investigation of 45.42 percent *ad valorem*,<sup>7</sup> if there is no rate for the intermediate company(ies) involved in the transaction.

Commerce intends to issue assessment instructions to CBP no earlier than 35 days after the date of publication of the final results of this review in the **Federal Register**. If a timely summons is filed at the U.S. Court of International Trade, the assessment instructions will direct CBP not to liquidate relevant entries until the time for parties to file a request for a statutory injunction has expired (*i.e.*, within 90 days of publication).

**Cash Deposit Requirements**

The following cash deposit requirements will be effective for all shipments of the subject merchandise entered, or withdrawn from warehouse, for consumption on or after the publication date of the final results of this administrative review, as provided by section 751(a)(2)(C) of the Act: (1) the cash deposit rate for the company listed above will be equal to the weighted-average dumping margin that is established in the final results of this review, except if the rate is less than 0.50 percent and, therefore, *de minimis* within the meaning of 19 CFR 351.106(c)(1), in which case the cash deposit rate will be zero; (2) for previously investigated or reviewed companies not listed above, the cash deposit rate will continue to be the company-specific rate published for the most recently completed segment of this proceeding in which the company participated; (3) if the exporter is not a firm covered in this review, a prior review, or the LTFV investigation, but the producer is, the cash deposit rate will be the cash deposit rate established for the most recently completed segment for the producer of the subject merchandise; and (4) the cash deposit

rate for all other producers or exporters will continue to be 45.42 percent, the all-others rate established in the LTFV investigation.<sup>8</sup> These deposit requirements, when imposed, shall remain in effect until further notice.

**Administrative Protective Order**

This notice serves as the only reminder to parties subject to administrative protective order (APO) of their responsibility concerning the disposition of proprietary information disclosed under APO in accordance with 19 CFR 351.305(a)(3), which continues to govern business proprietary information in this segment of the proceeding. Timely written notification of return/destruction of APO materials or conversion to judicial protective order is hereby requested. Failure to comply with the regulations and the terms of an APO is a sanctionable violation.

**Notification to Importers**

This notice serves as a final reminder to importers of their responsibility under 19 CFR 351.402(f)(2) to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement could result in Commerce’s presumption that reimbursement of antidumping duties occurred and the subsequent assessment of doubled antidumping duties.

**Notification to Interested Parties**

This notice is issued and published in accordance with sections 751(a)(1) and 777(i)(1) of the Act.

Dated: November 25, 2024.

**Abdelali Elouaradia,**

*Deputy Assistant Secretary for Enforcement and Compliance.*

**Appendix**

**List of Topics Discussed in the Issues and Decision Memorandum**

- I. Summary
- II. Background
- III. Scope of the *Order*
- IV. Changes Since the *Preliminary Results*
- V. Discussion of the Issues
  - Comment 1: Date of Sale
  - Comment 2: Incorrect Comparison Market Datasets Used in *Preliminary Results*
- VI. Recommendation

[FR Doc. 2024–28275 Filed 12–2–24; 8:45 am]

**BILLING CODE 3510–DS–P**

<sup>6</sup> For a full description of these changes, see Issues and Decision Memorandum.

<sup>7</sup> See *Order*, 79 FR 30816.

<sup>8</sup> See *Order*, 79 FR 30816.

**DEPARTMENT OF COMMERCE****International Trade Administration****Antidumping or Countervailing Duty Order, Finding, or Suspended Investigation; Opportunity To Request Administrative Review and Join Annual Inquiry Service List**

**AGENCY:** Enforcement and Compliance, International Trade Administration, Department of Commerce.

**FOR FURTHER INFORMATION CONTACT:**

Brenda E. Brown, Office of AD/CVD Operations, Customs Liaison Unit, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Washington, DC 20230, telephone: (202) 482-4735.

**SUPPLEMENTARY INFORMATION:****Background**

Each year during the anniversary month of the publication of an antidumping duty (AD) or countervailing duty (CVD) order, finding, or suspended investigation, an interested party, as defined in section 771(9) of the Tariff Act of 1930, as amended (the Act), may request, in accordance with 19 CFR 351.213, that the U.S. Department of Commerce (Commerce) conduct an administrative review of that AD or CVD order, finding, or suspended investigation.

All deadlines for the submission of comments or actions by Commerce discussed below refer to the number of calendar days from the applicable starting date.

**Respondent Selection**

In the event Commerce limits the number of respondents for individual examination for administrative reviews initiated pursuant to requests made for the orders identified below, Commerce intends to select respondents based on U.S. Customs and Border Protection (CBP) data for U.S. imports during the period of review (POR). We intend to release the CBP data under Administrative Protective Order (APO) to all parties having an APO within five days of publication of the initiation notice and to make our decision regarding respondent selection within 35 days of publication of the initiation **Federal Register** notice. Therefore, we encourage all parties interested in commenting on respondent selection to submit their APO applications on the date of publication of the initiation

notice, or as soon thereafter as possible. Commerce invites comments regarding the CBP data and respondent selection within five days of placement of the CBP data on the record of the review.

In the event Commerce decides it is necessary to limit individual examination of respondents and conduct respondent selection under section 777A(c)(2) of the Act:

In general, Commerce finds that determinations concerning whether particular companies should be “collapsed” (*i.e.*, treated as a single entity for purposes of calculating AD rates) require a substantial amount of detailed information and analysis, which often require follow-up questions and analysis. Accordingly, Commerce will not conduct collapsing analyses at the respondent selection phase of a review and will not collapse companies at the respondent selection phase unless there has been a determination to collapse certain companies in a previous segment of this AD proceeding (*i.e.*, investigation, administrative review, new shipper review, or changed circumstances review). For any company subject to a review, if Commerce determined, or continued to treat, that company as collapsed with others, Commerce will assume that such companies continue to operate in the same manner and will collapse them for respondent selection purposes.

Otherwise, Commerce will not collapse companies for purposes of respondent selection. Parties are requested to: (a) identify which companies subject to review previously were collapsed; and (b) provide a citation to the proceeding in which they were collapsed. Further, if companies are requested to complete a Quantity and Value Questionnaire for purposes of respondent selection, in general each company must report volume and value data separately for itself. Parties should not include data for any other party, even if they believe they should be treated as a single entity with that other party. If a company was collapsed with another company or companies in the most recently completed segment of a proceeding where Commerce considered collapsing that entity, complete quantity and value data for that collapsed entity must be submitted.

**Deadline for Withdrawal of Request for Administrative Review**

Pursuant to 19 CFR 351.213(d)(1), a party that requests a review may

withdraw that request within 90 days of the date of publication of the notice of initiation of the requested review. The regulation provides that Commerce may extend this time if it is reasonable to do so. Determinations by Commerce to extend the 90-day deadline will be made on a case-by-case basis.

**Deadline for Particular Market Situation Allegation**

Section 504 of the Trade Preferences Extension Act of 2015 amended the Act by adding the concept of particular market situation (PMS) for purposes of constructed value under section 773(e) of the Act.<sup>1</sup> Section 773(e) of the Act states that “if a particular market situation exists such that the cost of materials and fabrication or other processing of any kind does not accurately reflect the cost of production in the ordinary course of trade, the administering authority may use another calculation methodology under this subtitle or any other calculation methodology.” When an interested party submits a PMS allegation pursuant to section 773(e) of the Act, Commerce will respond to such a submission consistent with 19 CFR 351.301(c)(2)(v). If Commerce finds that a PMS exists under section 773(e) of the Act, then it will modify its dumping calculations appropriately.

Neither section 773(e) of the Act nor 19 CFR 351.301(c)(2)(v) set a deadline for the submission of PMS allegations and supporting factual information. However, in order to administer section 773(e) of the Act, Commerce must receive PMS allegations and supporting factual information with enough time to consider the submission. Thus, should an interested party wish to submit a PMS allegation and supporting new factual information pursuant to section 773(e) of the Act, it must do so no later than 20 days after submission of initial Section D responses.

*Opportunity to Request a Review:* Not later than the last day of December 2024,<sup>2</sup> interested parties may request administrative review of the following orders, findings, or suspended investigations, with anniversary dates in December for the following periods:

<sup>1</sup> See Trade Preferences Extension Act of 2015, Public Law 114-27, 129 Stat. 362 (2015).

<sup>2</sup> Or the next business day, if the deadline falls on a weekend, Federal holiday or any other day when Commerce is closed.

	Period
<b>Antidumping Duty Proceedings</b>	
BRAZIL: Carbon Steel Butt-Weld Pipe Fittings, A-351-602 .....	12/1/23-11/30/24
CHILE: Certain Preserved Mushrooms, A-337-804 .....	12/1/23-11/30/24
GERMANY: Non-Oriented Electrical Steel, A-428-843 .....	12/1/23-11/30/24
INDIA: Carbazole Violet Pigment 23, A-533-838 .....	12/1/23-11/30/24
INDIA: Certain Hot-Rolled Carbon Steel Flat Products, A-533-820 .....	12/1/23-11/30/24
INDIA: Commodity Matchbooks, A-533-848 .....	12/1/23-11/30/24
INDIA: Forged Steel Fittings, A-533-891 .....	12/1/23-11/30/24
INDIA: Stainless Steel Wire Rod, A-533-808 .....	12/1/23-11/30/24
INDIA: Utility Scale Wind Towers, A-533-897 .....	12/1/23-11/30/24
INDONESIA: Certain Hot-Rolled Carbon Steel Flat Products, A-560-812 .....	12/1/23-11/30/24
INDONESIA: Polyester Textured Yarn, A-560-838 .....	12/1/23-11/30/24
JAPAN: Non-Oriented Electrical Steel, A-588-872 .....	12/1/23-11/30/24
JAPAN: Prestressed Concrete Steel Wire Strand, A-588-068 .....	12/1/23-11/30/24
JAPAN: Welded Large Diameter Line Pipe, A-588-857 .....	12/1/23-11/30/24
OMAN: Circular Welded Carbon-Quality Steel Pipe, A-523-812 .....	12/1/23-11/30/24
MALAYSIA: Utility Scale Wind Towers, A-557-821 .....	12/1/23-11/30/24
MALAYSIA: Polyester Textured Yarn, A-557-823 .....	12/1/23-11/30/24
PAKISTAN: Circular Welded Carbon-Quality Steel Pipe, A-535-903 .....	12/1/23-11/30/24
REPUBLIC OF KOREA: Certain Superabsorbent Polymers, A-580-914 .....	12/1/23-11/30/24
REPUBLIC OF KOREA: Forged Steel Fittings, A-580-904 .....	12/1/23-11/30/24
REPUBLIC OF KOREA: Non-Oriented Electrical Steel, A-580-872 .....	12/1/23-11/30/24
REPUBLIC OF KOREA: Welded ASTM A-312 Stainless Steel Pipe, A-580-810 .....	12/1/23-11/30/24
REPUBLIC OF KOREA: Welded Line Pipe, A-580-876 .....	12/1/23-11/30/24
RUSSIA: Certain Hot-Rolled Flat-Rolled Carbon-Quality Steel Products, A-821-809 .....	12/1/23-11/30/24
SINGAPORE: Acetone, A-559-808 .....	12/1/23-11/30/24
SOCIALIST REPUBLIC OF VIETNAM: Polyester Textured Yarn, A-552-832 .....	12/1/23-11/30/24
SOCIALIST REPUBLIC OF VIETNAM: Uncovered Innerspring Units, A-552-803 .....	12/1/23-11/30/24
SOUTH AFRICA: Uncovered Innerspring Units, A-791-821 .....	12/1/23-11/30/24
SPAIN: Acetone, A-469-819 .....	12/1/23-11/30/24
SWEDEN: Non-Oriented Electrical Steel, A-401-809 .....	12/1/23-11/30/24
TAIWAN: Carbon Steel Butt-Weld Pipe Fittings, A-583-605 .....	12/1/23-11/30/24
TAIWAN: Non-Oriented Electrical Steel, A-583-851 .....	12/1/23-11/30/24
TAIWAN: Steel Wire Garment Hangers, A-583-849 .....	12/1/23-11/30/24
TAIWAN: Welded ASTM A-312 Stainless Steel Pipe, A-583-815 .....	12/1/23-11/30/24
THAILAND: Carbon and Alloy Steel Threaded Rod, A-549-840 .....	12/1/23-11/30/24
THAILAND: Polyester Textured Yarn, A-549-843 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Aluminum Wire and Cable, A-570-095 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Carbazole Violet Pigment 23, A-570-892 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Cased Pencils, A-570-827 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Crystalline Silicon Photovoltaic Cells, Whether Or Not Assembled Into Modules, A-570-979 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Hand Trucks and Certain Parts Thereof, A-570-891 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Honey, A-570-863 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Malleable Cast Iron Pipe Fittings, A-570-881 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Mattresses, A-570-092 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Melamine, A-570-020 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Multilayered Wood Flooring, A-570-970 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Non-Oriented Electrical Steel, A-570-996 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Refillable Stainless Steel Kegs, A-570-093 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Silicomanganese, A-570-828 .....	12/1/23-11/30/24
THE PEOPLE'S REPUBLIC OF CHINA: Vertical Metal File Cabinets, A-570-110 .....	12/1/23-11/30/24
TURKEY: Welded Line Pipe, A-489-822 .....	12/1/23-11/30/24
UNITED ARAB EMIRATES: Circular Welded Carbon-Quality Steel Pipe, A-520-807 .....	12/1/23-11/30/24
<b>Countervailing Duty Proceedings</b>	
INDIA: Carbazole Violet Pigment 23, C-533-839 .....	1/1/23-12/31/23
INDIA: Certain Hot-Rolled Carbon Steel Flat Products, C-533-821 .....	1/1/23-12/31/23
INDIA: Commodity Matchbooks, C-533-849 .....	1/1/23-12/31/23
INDIA: Forged Steel Fittings, C-533-892 .....	1/1/23-12/31/23
INDIA: Utility Scale Wind Towers, C-533-898 .....	1/1/23-12/31/23
INDONESIA: Certain Hot-Rolled Carbon Steel Flat Products, C-560-813 .....	1/1/23-12/31/23
TAIWAN: Non-Oriented Electrical Steel, C-583-852 .....	1/1/23-12/31/23
THAILAND: Certain Hot-Rolled Carbon Steel Flat Products, C-549-818 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Aluminum Wire and Cable, C-570-096 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Crystalline Silicon Photovoltaic Cells, Whether Or Not Assembled Into Modules, C-570-980 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Melamine, C-570-021 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Mobile Access Equipment and Subassemblies Thereof, C-570-140 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Non-Oriented Electrical Steel, C-570-997 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Multilayered Wood Flooring, C-570-971 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Refillable Stainless Steel Kegs, C-570-094 .....	1/1/23-12/31/23
THE PEOPLE'S REPUBLIC OF CHINA: Vertical Metal File Cabinets, C-570-111 .....	1/1/23-12/31/23
TURKEY: Welded Line Pipe, C-489-823 .....	1/1/23-12/31/23

	Period
<b>Suspension Agreements</b>	
MEXICO: Sugar, A–201–845 .....	12/1/23–11/30/24
MEXICO: Sugar, C–201–846 .....	1/1/24–12/31/24

In accordance with 19 CFR 351.213(b), an interested party as defined by section 771(9) of the Act may request in writing that Commerce conduct an administrative review. For both AD and CVD reviews, the interested party must specify the individual producers or exporters covered by an AD finding or an AD or CVD order or suspension agreement for which it is requesting a review. In addition, a domestic interested party or an interested party described in section 771(9)(B) of the Act must state why it desires Commerce to review those particular producers or exporters. If the interested party intends for Commerce to review sales of merchandise by an exporter (or a producer if that producer also exports merchandise from other suppliers) which was produced in more than one country of origin and each country of origin is subject to a separate order, then the interested party must state specifically, on an order-by-order basis, which exporter(s) the request is intended to cover.

Note that, for any party Commerce was unable to locate in prior segments, Commerce will not accept a request for an administrative review of that party absent new information as to the party's location. Moreover, if the interested party who files a request for review is unable to locate the producer or exporter for which it requested the review, the interested party must provide an explanation of the attempts it made to locate the producer or exporter at the same time it files its request for review, in order for Commerce to determine if the interested party's attempts were reasonable, pursuant to 19 CFR 351.303(f)(3)(ii).

As explained in *Antidumping and Countervailing Duty Proceedings: Assessment of Antidumping Duties*, 68 FR 23954 (May 6, 2003), and *Non-Market Economy Antidumping Proceedings: Assessment of Antidumping Duties*, 76 FR 65694 (October 24, 2011), Commerce clarified its practice with respect to the collection of final antidumping duties on imports of merchandise where intermediate firms are involved. The public should be aware of this clarification in determining whether to request an administrative review of

merchandise subject to antidumping findings and orders.<sup>3</sup>

Commerce no longer considers the non-market economy (NME) entity as an exporter conditionally subject to an AD administrative review.<sup>4</sup> Accordingly, the NME entity will not be under review unless Commerce specifically receives a request for, or self-initiates, a review of the NME entity.<sup>5</sup> In administrative reviews of AD orders on merchandise from NME countries where a review of the NME entity has not been initiated, but where an individual exporter for which a review was initiated does not qualify for a separate rate, Commerce will issue a final decision indicating that the company in question is part of the NME entity. However, in that situation, because no review of the NME entity was conducted, the NME entity's entries were not subject to the review and the rate for the NME entity is not subject to change as a result of that review (although the rate for the individual exporter may change as a function of the finding that the exporter is part of the NME entity). Following initiation of an AD administrative review when there is no review requested of the NME entity, Commerce will instruct CBP to liquidate entries for all exporters not named in the initiation notice, including those that were suspended at the NME entity rate.

All requests must be filed electronically in Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS) on Enforcement and Compliance's ACCESS website at <https://access.trade.gov>.<sup>6</sup> Further, in accordance with 19 CFR 351.303(f)(1)(i), a copy of each request must be served on the petitioner and each exporter or producer specified in

<sup>3</sup> See the Enforcement and Compliance website at <https://www.trade.gov/us-antidumping-and-countervailing-duties>.

<sup>4</sup> See *Antidumping Proceedings: Announcement of Change in Department Practice for Respondent Selection in Antidumping Duty Proceedings and Conditional Review of the Nonmarket Economy Entity in NME Antidumping Duty Proceedings*, 78 FR 65963 (November 4, 2013).

<sup>5</sup> In accordance with 19 CFR 351.213(b)(1), parties should specify that they are requesting a review of entries from exporters comprising the entity, and to the extent possible, include the names of such exporters in their request.

<sup>6</sup> See *Antidumping and Countervailing Duty Proceedings: Electronic Filing Procedures; Administrative Protective Order Procedures*, 76 FR 39263 (July 6, 2011).

the request. Note that Commerce has amended certain of its requirements pertaining to the service of documents in 19 CFR 351.303(f).<sup>7</sup>

Commerce will publish in the **Federal Register** a notice of "Initiation of Administrative Review of Antidumping or Countervailing Duty Order, Finding, or Suspended Investigation" for requests received by the last day of December 2024. If Commerce does not receive, by the last day of December 2024, a request for review of entries covered by an order, finding, or suspended investigation listed in this notice and for the period identified above, Commerce will instruct CBP to assess antidumping or countervailing duties on those entries at a rate equal to the cash deposit of estimated antidumping or countervailing duties required on those entries at the time of entry, or withdrawal from warehouse, for consumption and to continue to collect the cash deposit previously ordered.

For the first administrative review of any order, there will be no assessment of antidumping or countervailing duties on entries of subject merchandise entered, or withdrawn from warehouse, for consumption during the relevant provisional-measures "gap" period of the order, if such a gap period is applicable to the period of review.

#### **Establishment of and Updates to the Annual Inquiry Service List**

On September 20, 2021, Commerce published the final rule titled "*Regulations to Improve Administration and Enforcement of Antidumping and Countervailing Duty Laws*" in the **Federal Register**.<sup>8</sup> On September 27, 2021, Commerce also published the notice entitled "*Scope Ruling Application; Annual Inquiry Service List; and Informational Sessions*" in the **Federal Register**.<sup>9</sup> The *Final Rule* and *Procedural Guidance* provide that Commerce will maintain an annual

<sup>7</sup> See *Administrative Protective Order, Service, and Other Procedures in Antidumping and Countervailing Duty Proceedings; Final Rule*, 88 FR 67069 (September 29, 2023).

<sup>8</sup> See *Regulations to Improve Administration and Enforcement of Antidumping and Countervailing Duty Laws*, 86 FR 52300 (September 20, 2021) (*Final Rule*).

<sup>9</sup> See *Scope Ruling Application; Annual Inquiry Service List; and Informational Sessions*, 86 FR 53205 (September 27, 2021) (*Procedural Guidance*).

inquiry service list for each order or suspended investigation, and any interested party submitting a scope ruling application or request for circumvention inquiry shall serve a copy of the application or request on the persons on the annual inquiry service list for that order, as well as any companion order covering the same merchandise from the same country of origin.<sup>10</sup>

In accordance with the *Procedural Guidance*, for orders published in the **Federal Register** before November 4, 2021, Commerce created an annual inquiry service list segment for each order and suspended investigation. Interested parties who wished to be added to the annual inquiry service list for an order submitted an entry of appearance to the annual inquiry service list segment for the order in ACCESS and, on November 4, 2021, Commerce finalized the initial annual inquiry service lists for each order and suspended investigation. Each annual inquiry service list has been saved as a public service list in ACCESS, under each case number, and under a specific segment type called “AISL-Annual Inquiry Service List.”<sup>11</sup>

As mentioned in the *Procedural Guidance*, beginning in January 2022, Commerce will update these annual inquiry service lists on an annual basis when the *Opportunity Notice* for the anniversary month of the order or suspended investigation is published in the **Federal Register**.<sup>12</sup> Accordingly, Commerce will update the annual inquiry service lists for the above-listed AD and CVD proceedings. All interested parties wishing to appear on the updated annual inquiry service list must take one of the two following actions: (1) new interested parties who did not previously submit an entry of appearance must submit a new entry of appearance at this time; (2) interested parties who were included in the preceding annual inquiry service list must submit an amended entry of appearance to be included in the next year’s annual inquiry service list. For these interested parties, Commerce will

change the entry of appearance status from “Active” to “Needs Amendment” for the annual inquiry service lists corresponding to the above-listed proceedings. This will allow those interested parties to make any necessary amendments and resubmit their entries of appearance. If no amendments need to be made, the interested party should indicate in the area on the ACCESS form requesting an explanation for the amendment that it is resubmitting its entry of appearance for inclusion in the annual inquiry service list for the following year. As mentioned in the *Final Rule*,<sup>13</sup> once the petitioners and foreign governments have submitted an entry of appearance for the first time, they will automatically be added to the updated annual inquiry service list each year.

Interested parties have 30 days after the date of this notice to submit new or amended entries of appearance. Commerce will then finalize the annual inquiry service lists five business days thereafter. For ease of administration, please note that Commerce requests that law firms with more than one attorney representing interested parties in a proceeding designate a lead attorney to be included on the annual inquiry service list.

Commerce may update an annual inquiry service list at any time as needed based on interested parties’ amendments to their entries of appearance to remove or otherwise modify their list of members and representatives, or to update contact information. Any changes or announcements pertaining to these procedures will be posted to the ACCESS website at <https://access.trade.gov>.

#### Special Instructions for Petitioners and Foreign Governments

In the *Final Rule*, Commerce stated that, “after an initial request and placement on the annual inquiry service list, both petitioners and foreign governments will automatically be placed on the annual inquiry service list in the years that follow.”<sup>14</sup>

Accordingly, as stated above and pursuant to 19 CFR 351.225(n)(3), the petitioners and foreign governments will not need to resubmit their entries of appearance each year to continue to be included on the annual inquiry service list. However, the petitioners and foreign governments are responsible for making amendments to their entries of appearance during the annual update to the annual inquiry service list in

accordance with the procedures described above.

This notice is not required by statute but is published as a service to the international trading community.

Dated: November 26, 2024.

**Scot Fullerton,**

*Acting Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations.*

[FR Doc. 2024–28276 Filed 12–2–24; 8:45 am]

BILLING CODE 3510–DS–P

## DEPARTMENT OF COMMERCE

### International Trade Administration

[C–489–854]

#### Certain Brake Drums From the Republic of Türkiye: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination

**AGENCY:** Enforcement and Compliance, International Trade Administration, Department of Commerce.

**SUMMARY:** The U.S. Department of Commerce (Commerce) preliminarily determines that countervailable subsidies are being provided to producers and exporters of certain brake drums (brake drums) from the Republic of Türkiye (Türkiye). The period of investigation is January 1, 2023, through December 31, 2023. Interested parties are invited to comment on this preliminary determination.

**DATES:** Applicable December 3, 2024.

**FOR FURTHER INFORMATION CONTACT:** Charles Doss or Samuel Brummitt, AD/CVD Operations, Office III, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Washington, DC 20230; telephone: (202) 482–4474 or (202) 482–7851, respectively.

#### SUPPLEMENTARY INFORMATION:

##### Background

This preliminary determination is made in accordance with section 703(b) of the Tariff Act of 1930, as amended (the Act). Commerce published the notice of initiation of this countervailing duty (CVD) investigation on July 17, 2024.<sup>1</sup> On July 22, 2024, Commerce tolled certain deadlines in this administrative proceeding by seven

<sup>1</sup> See *Certain Brake Drums from the People’s Republic of China and the Republic of Türkiye: Initiation of Countervailing Duty Investigations*, 89 FR 58106 (July 17, 2024) (*Initiation Notice*).

<sup>10</sup> *Id.*

<sup>11</sup> This segment has been combined with the ACCESS Segment Specific Information (SSI) field which will display the month in which the notice of the order or suspended investigation was published in the **Federal Register**, also known as the anniversary month. For example, for an order under case number A–000–000 that was published in the **Federal Register** in January, the relevant segment and SSI combination will appear in ACCESS as “AISL-January Anniversary.” Note that there will be only one annual inquiry service list segment per case number, and the anniversary month will be pre-populated in ACCESS.

<sup>12</sup> See *Procedural Guidance*, 86 FR 53206.

<sup>13</sup> See *Final Rule*, 86 FR 52335.

<sup>14</sup> *Id.*



days.<sup>2</sup> On September 6, 2024, Commerce postponed the preliminary determination of this investigation until November 25, 2024.<sup>3</sup>

For a complete description of the events that followed the initiation of this investigation, see the Preliminary Decision Memorandum.<sup>4</sup> A list of topics discussed in the Preliminary Decision Memorandum is included as Appendix II to this notice. The Preliminary Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance’s Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). ACCESS is available to registered users at <https://access.trade.gov>. In addition, a complete version of the Preliminary Decision Memorandum can be accessed directly at <https://access.trade.gov/public/FRNoticesListLayout.aspx>.

**Scope of the Investigation**

The products covered by this investigation are brake drums from Türkiye. For a complete description of the scope of this investigation, see Appendix I.

**Scope Comments**

In accordance with the *Preamble* to Commerce’s regulations,<sup>5</sup> the *Initiation Notice* set aside a period of time for parties to raise issues regarding product coverage, (i.e., scope).<sup>6</sup> Certain interested parties commented on the scope of the investigation as it appeared in the *Initiation Notice*. Commerce intends to issue its preliminary decision regarding comments concerning the scope of the antidumping (AD) and CVD investigations in the preliminary determinations of the companion AD investigations. We will incorporate the scope decisions from the AD investigations into the scope of the final CVD determination for this investigation

after considering any relevant comments submitted in scope case and rebuttal briefs.<sup>7</sup>

**Methodology**

Commerce is conducting this investigation in accordance with section 701 of the Act. For each of the subsidy programs found countervailable, Commerce preliminarily determines that there is a subsidy, i.e., a financial contribution by an “authority” that gives rise to a benefit to the recipient, and that the subsidy is specific.<sup>8</sup> For a full description of the methodology underlying our preliminary determination, see the Preliminary Decision Memorandum.

Commerce notes that, in making its findings, it relied, in part, on facts available and, because it finds that one or more entities did not act to the best of their ability to respond to Commerce’s requests for information, it drew an adverse inference where appropriate in selecting from among the facts otherwise available.<sup>9</sup> For further information, see the “Use of Facts Otherwise Available and Adverse Inferences” section in the Preliminary Decision Memorandum.

**Alignment**

As noted in the Preliminary Decision Memorandum, in accordance with section 705(a)(1) of the Act and 19 CFR 351.210(b)(4), Commerce is aligning the final CVD determination in this investigation with the final determination in the concurrent AD investigation of brake drums from Türkiye based on a request made by the petitioner.<sup>10</sup> Consequently, the final CVD determination will be issued on the same date as the final AD determination, which is currently scheduled to be issued no later than April 8, 2025 unless postponed.<sup>11</sup>

**All-Others Rate**

Sections 703(d) and 705(c)(5)(A) of the Act provide that in the preliminary determination, Commerce shall determine an estimated all-others rate for companies not individually examined. Section 705(c)(5)(A)(i) of the Act states that for companies not individually investigated, Commerce will determine an “all-others” rate equal to the weighted average countervailable subsidy rates established for exporters and producers individually investigated, excluding any zero and *de minimis* countervailable subsidy rates, and any rates determined entirely under section 776 of the Act. If the rates established for all exporters and producers individually investigated are zero, *de minimis*, or determined entirely under facts available, Commerce may use any reasonable method to establish an all-others rate.<sup>12</sup>

In this investigation, Commerce preliminarily calculated an individual countervailable subsidy rate for EKU Fren ve Dok. San. A.S. (EKU) that is *de minimis*. Further, Commerce has preliminarily determined Akkus Dokum San.Ve Tic.Ltd.Sti.’s, Buyuk Eker Bijon Sanayi Ve Ticaret’s, and Genk Otomotiv San.Dis Tic.Ltd.Sti.’s rates entirely under facts available with an adverse inference pursuant to section 776 of the Act. Therefore, in accordance with section 705(c)(5)(A)(ii) of the Act, we are preliminarily applying a simple average of the subsidy rates calculated for Akkus Dokum San.Ve Tic.Ltd.Sti, Buyuk Eker Bijon Sanayi Ve Ticaret, Genk Otomotiv San.Dis Tic.Ltd.Sti., and EKU as the all-others rate.<sup>13</sup>

**Preliminary Determination**

Commerce preliminarily determines that the following estimated countervailable subsidy rates exist:

Company	Subsidy rate (percent <i>ad valorem</i> )
EKU Fren ve Dok. San. A.S .....	0.89 ( <i>de minimis</i> ).
Akkus Dokum San.Ve Tic.Ltd.Sti .....	131.39*.
Buyuk Eker Bijon Sanayi Ve Ticaret .....	131.39*.

<sup>2</sup> See Memorandum, “Tolling of Deadlines for Antidumping and Countervailing Duty Proceedings,” dated July 22, 2024.

<sup>3</sup> See *Certain Brake Drums from the People’s Republic of China and the Republic of Türkiye: Postponement of Preliminary Determinations in the Countervailing Duty Investigations*, 89 FR 72827 (September 6, 2024).

<sup>4</sup> See Memorandum, “Decision Memorandum for the Preliminary Determination of the Countervailing Duty Investigation of Certain Brake Drums from the Republic of Türkiye,” dated concurrently with, and hereby adopted by, this notice (Preliminary Decision Memorandum).

<sup>5</sup> See *Antidumping Duties; Countervailing Duties, Final Rule*, 62 FR 27296, 27323 (May 19, 1997) (*Preamble*).

<sup>6</sup> See *Initiation Notice*, 89 FR at 58106.

<sup>7</sup> The deadline for interested parties to submit scope case and rebuttal briefs will be established in the preliminary scope decision memorandum.

<sup>8</sup> See sections 771(5)(B) and (D) of the Act regarding financial contribution; section 771(5)(E) of the Act regarding benefit; and section 771(5A) of the Act regarding specificity.

<sup>9</sup> See sections 776(a) and (b) of the Act.

<sup>10</sup> See Petitioner’s Letter, “Request to Align Final Antidumping and Countervailing Duty Determinations,” dated November 7, 2024.

<sup>11</sup> See *Certain Brake Drums from the Republic of Türkiye and the People’s Republic of China: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*, 89 FR 91675 (November 20, 2024).

<sup>12</sup> See sections 705(c)(5)(A)(i) and (ii) of the Act.

<sup>13</sup> See, e.g., *Non-Oriented Electrical Steel from Taiwan: Final Affirmative Countervailing Duty Determination*, 79 FR 71602 (October 14, 2014), and accompanying Issues and Decision Memorandum at Comment 11.



Company	Subsidy rate (percent <i>ad valorem</i> )
Genk Otomotiv San.Dis Tic.Ltd.Sti .....	131.39*.
All Others .....	98.77.

\* Rate based on facts available with adverse inferences.

**Disclosure**

Commerce intends to disclose its calculations and analysis performed to interested parties in this preliminary determination within five days of its public announcement, or if there is no public announcement, within five days of the date of this notice in accordance with 19 CFR 351.224(b).

Consistent with 19 CFR 351.224(e), Commerce will analyze and, if appropriate, correct any timely allegations of significant ministerial errors by amending the preliminary determination. However, consistent with 19 CFR 351.224(d), Commerce will not consider incomplete allegations that do not address the significance standard under 19 CFR 351.224(g) following the preliminary determination. Instead, Commerce will address such allegations in the final determination together with issues raised in the case briefs or other written comments.

**Suspension of Liquidation**

With the exception of entries from EKU, in accordance with sections 703(d)(1)(B) and (d)(2) of the Act, Commerce will direct U.S. Customs and Border Protection (CBP) to suspend liquidation of entries of subject merchandise as described in Appendix I entered, or withdrawn from warehouse, for consumption on or after the date of the publication of this notice in the **Federal Register**. Further, pursuant to 19 CFR 351.205(d), Commerce will instruct CBP to require a cash deposit equal to the rates indicated above. Because we preliminarily determine that the CVD rate in this investigation for EKU is *de minimis*, we will not direct CBP to suspend liquidation of entries of the subject merchandise from Türkiye produced and exported by EKU.

**Verification**

As provided in section 782(i)(1) of the Act, Commerce intends to verify the information relied upon in making its final determination.

**Public Comment**

All interested parties will have the opportunity to submit scope case and rebuttal briefs on the preliminary decision regarding the scope of the AD and CVD investigations. The deadlines

to submit scope case and rebuttal briefs will be provided in the preliminary scope decision memorandum. For all scope case and rebuttal briefs, parties must file identical documents simultaneously on the records of the ongoing AD and CVD brake drums investigations. No new factual information or business proprietary information may be included in either scope case or rebuttal briefs.

Case briefs or other written comments on non-scope issues may be submitted to the Assistant Secretary for Enforcement and Compliance no later than seven days after the date on which the last verification report is issued in this investigation. Rebuttal briefs, limited to issues raised in the case briefs, may be filed not later than five days after the date for filing case briefs.<sup>14</sup> Interested parties who submit case briefs or rebuttal briefs in this proceeding must submit: (1) a table of contents listing each issue; and (2) a table of authorities.<sup>15</sup>

As provided under 19 CFR 351.309(c)(2) and (d)(2), in prior proceedings we have encouraged interested parties to provide an executive summary of their brief that should be limited to five pages total, including footnotes. In this investigation, we instead request that interested parties provide at the beginning of their briefs a public, executive summary for each issue raised in their briefs.<sup>16</sup> Further, we request that interested parties limit their executive summary of each issue to no more than 450 words, not including citations. We intend to use the executive summaries as the basis of the comment summaries included in the issues and decision memorandum that will accompany the final determination in this investigation. We request that interested parties include footnotes for relevant citations in the executive summary of each issue. Note that Commerce has amended certain of its requirements pertaining to

<sup>14</sup> See 19 CFR 351.309(d); see also *Administrative Protective Order, Service, and Other Procedures in Antidumping and Countervailing Duty Proceedings*, 88 FR 67069, 67077 (September 29, 2023) (*APO and Service Final Rule*).

<sup>15</sup> See 19 CFR 351.309(c)(2) and (d)(2)

<sup>16</sup> We use the term “issue” here to describe an argument that Commerce would normally address in a comment of the Issues and Decision Memorandum.

the service of documents in 19 CFR 351.303(f).<sup>17</sup>

Pursuant to 19 CFR 351.310(c), interested parties who wish to request a hearing, limited to issues raised in the case and rebuttal briefs, must submit a written request to the Assistant Secretary for Enforcement and Compliance, U.S. Department of Commerce within 30 days after the date of publication of this notice. Requests should contain the party’s name, address, and telephone number, the number of participants, whether any participant is a foreign national, and a list of the issues to be discussed. If a request for a hearing is made, Commerce intends to hold the hearing at a time and date to be determined. Parties should confirm by telephone the date, time, and location of the hearing two days before the scheduled date. All submissions, including case and rebuttal briefs, as well as hearing requests, should be filed using ACCESS. An electronically-filed document must be received successfully in its entirety by ACCESS by 5:00 p.m. Eastern Time on the established deadline.

**U.S. International Trade Commission Notification**

In accordance with section 703(f) of the Act, Commerce will notify the U.S. International Trade Commission (ITC) of its determination. If the final determination is affirmative, the ITC will determine before the later of 120 days after the date of this preliminary determination or 45 days after the final determination whether imports of brake drums from Türkiye are materially injuring, or threaten material injury to, the U.S. industry.

**Notification to Interested Parties**

This determination is issued and published pursuant to sections 703(f) and 777(i) of the Act and 19 CFR 351.205(c).

Dated: November 25, 2024.

**Abdelali Elouaradia**,  
*Deputy Assistant Secretary for Enforcement and Compliance.*

**Appendix I—Scope of the Investigation**

The merchandise covered by this investigation is certain brake drums made of

<sup>17</sup> See *APO and Service Final Rule*.

gray cast iron, whether finished or unfinished, with an actual or nominal inside diameter of 14.75 inches or more but not over 16.6 inches, weighing more than 50 pounds. Unfinished brake drums are those which have undergone some turning or machining but are not ready for installation. Subject brake drums are included within the scope whether imported individually or with non-subject merchandise (for example, a hub), whether assembled or unassembled, or if joined with non-subject merchandise. When a subject drum is imported together with non-subject merchandise, such as, but not limited to, a drum-hub assembly, only the subject drum is covered by the scope.

Subject merchandise also includes finished and unfinished brake drums that are further processed in a third country or in the United States, including, but not limited to, assembly or any other processing that would not otherwise remove the merchandise from the scope of this investigation if performed in the country of manufacture of the subject brake drums. The inclusion, attachment, joining, or assembly of non-subject merchandise with subject drums either in the country of manufacture of the subject drum or in a third country does not remove the subject drum from the scope. Specifically excluded is merchandise covered by the scope of the antidumping and countervailing duty orders on certain chassis and subassemblies thereof from the People's Republic of China. See *Certain Chassis and Subassemblies Thereof from the People's Republic of China: Antidumping Duty Order*, 86 FR 36093 (July 8, 2021) and *Certain Chassis and Subassemblies Thereof From the People's Republic of China: Countervailing Duty Order and Amended Final Affirmative Countervailing Duty Determination*, 86 FR 24844 (May 10, 2021).

The scope also excludes composite brake drums that contain more than 40 percent steel by weight.

The merchandise covered by this investigation is classifiable under Harmonized Tariff Schedule of the United States (HTSUS) subheading 8708.30.5020. The merchandise covered by this investigation may be classifiable under HTSUS subheading 8708.30.5090 when entered as part of an assembly. Subject merchandise may also enter under HTSUS subheading 8716.90.5060. Although the HTSUS subheadings are provided for convenience and customs purposes, the written description of the merchandise covered by this investigation is dispositive.

## Appendix II—List of Topics Discussed in the Preliminary Decision Memorandum

- I. Summary
- II. Background
- III. Diversification of Türkiye's Economy
- IV. Injury Test
- V. Subsidies Valuation
- VI. Benchmarks Interest Rates and Discount Rates
- VII. Use of Facts Otherwise Available and Adverse Inferences
- VIII. Analysis of Programs
- IX. Calculation of the All-Others Rate

## X. Recommendation

[FR Doc. 2024–28239 Filed 12–2–24; 8:45 am]

**BILLING CODE 3510–DS–P**

## DEPARTMENT OF COMMERCE

### International Trade Administration

#### Notice of Scope Ruling Applications Filed in Antidumping and Countervailing Duty Proceedings

**AGENCY:** Enforcement and Compliance, International Trade Administration, Department of Commerce.

**SUMMARY:** The U.S. Department of Commerce (Commerce) received scope ruling applications, requesting that scope inquiries be conducted to determine whether identified products are covered by the scope of antidumping duty (AD) and/or countervailing duty (CVD) orders and that Commerce issue scope rulings pursuant to those inquiries. In accordance with Commerce's regulations, we are notifying the public of the filing of the scope ruling applications listed below in the month of October 2024.

**DATES:** Applicable December 3, 2024.

**FOR FURTHER INFORMATION CONTACT:** Terri Monroe, AD/CVD Operations, Customs Liaison Unit, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Washington, DC 20230, telephone: (202) 482–1384.

#### SUPPLEMENTARY INFORMATION:

#### Notice of Scope Ruling Applications

In accordance with 19 CFR 351.225(d)(3), we are notifying the public of the following scope ruling applications related to AD and CVD orders and findings filed in or around the month of October 2024. This notification includes, for each scope application: (1) identification of the AD and/or CVD orders at issue (19 CFR 351.225(c)(1)); (2) concise public descriptions of the products at issue, including the physical characteristics (including chemical, dimensional and technical characteristics) of the products (19 CFR 351.225(c)(2)(ii)); (3) the countries where the products are produced and the countries from where the products are exported (19 CFR 351.225(c)(2)(i)(B)); (4) the full names of the applicants; and (5) the dates that the scope applications were filed with Commerce and the name of the ACCESS scope segment where the scope applications can be found.<sup>1</sup> This notice

<sup>1</sup> See *Regulations to Improve Administration and Enforcement of Antidumping and Countervailing*

does not include applications which have been rejected and not properly resubmitted. The scope ruling applications listed below are available on Commerce's online e-filing and document management system, Antidumping and Countervailing Duty Electronic Service System (ACCESS), at <https://access.trade.gov>.

#### Scope Ruling Applications

Aluminum Extrusions from the People's Republic of China (China) (A–570–967/C–570–968); Heat sinks;<sup>2</sup> produced in and exported from China; submitted by IPG Photonics Corporation (IPG Photonics); October 4, 2024; ACCESS scope segment “IPG Photonics Heat Sink.”

Hand Trucks from China (A–570–891); Flatbed utility carts;<sup>3</sup> produced in and exported from China; submitted by Utility Transportation Carts, Inc. (UTC); October 17, 2024; ACCESS scope segment “UTC Flatbed Utility Cart.”

Large Diameter Welded Carbon and Alloy Steel Line Pipe from India (A–533–881/C–533–882); large diameter welded pipe with 18 inch outside diameter, 0.688 inches or greater wall thickness;<sup>4</sup> produced in and exported from India; submitted by Shawcor Pipe Protection Acquisition Corp.; October

*Duty Laws*, 86 FR 52300, 52316 (September 20, 2021) (*Final Rule*) (“It is our expectation that the **Federal Register** list will include, where appropriate, for each scope application the following data: (1) identification of the AD and/or CVD orders at issue; (2) a concise public summary of the product's description, including the physical characteristics (including chemical, dimensional and technical characteristics) of the product; (3) the country(ies) where the product is produced and the country from where the product is exported; (4) the full name of the applicant; and (5) the date that the scope application was filed with Commerce.”)

<sup>2</sup> The products are aluminum heat sinks manufactured using aluminum extrusions and designed to meet certain thermal performance requirements. The heat sinks are used to dissipate heat from pump diodes and fiber components of the fiber laser modules manufactured by IPG Photonics. The heat sinks are made from series AL 6063–5 aluminum. The heat sinks have a flat surface tolerance of  $\leq 0.0079$  inches.

<sup>3</sup> The products are wheeled 30" x 60" platform or flatbed utility carts with a rated load capacity of 2,000 lbs. that are ergonomically designed for worker safety and constructed of lightweight extruded aluminum tubes, aluminum plate, handles, and steel and rubber or polyurethane wheels. Cargo is loaded on the cargo deck and the cart is operated by pushing or pulling the cart in an orientation horizontal to the ground. The cart is not designed and cannot operate to transport cargo vertically, or in an upright orientation. The products are packaged and imported as complete kits, to be assembled by the purchaser/end user.

<sup>4</sup> The products are large diameter welded pipe with 18 inches outside diameter, 0.688 inches or greater wall thickness, and steel grade L450, for use of conveyance of gas, oil, and other liquids, generally in a pipeline or utility distribution system.

21, 2024; ACCESS scope segment “Shawcor Pipe.”

Aluminum Extrusions from China (A–570–967/C–570–968); Flatbed utility cart;<sup>5</sup> produced in and exported from China; submitted by UTC; October 22, 2024; ACCESS scope segment “UTC Flatbed Utility Cart.”

#### Notification to Interested Parties

This list of scope ruling applications is not an identification of scope inquiries that have been initiated. In accordance with 19 CFR 351.225(d)(1), if Commerce has not rejected a scope ruling application nor initiated the scope inquiry within 30 days after the filing of the application, the application will be deemed accepted and a scope inquiry will be deemed initiated the following day—day 31.<sup>6</sup> Commerce’s practice generally dictates that where a deadline falls on a weekend, Federal holiday, or other non-business day, the appropriate deadline is the next business day.<sup>7</sup> Accordingly, if the 30th day after the filing of the application falls on a non-business day, the next business day will be considered the “updated” 30th day, and if the application is not rejected or a scope inquiry initiated by or on that particular business day, the application will be deemed accepted and a scope inquiry will be deemed initiated on the next business day which follows the “updated” 30th day.<sup>8</sup>

In accordance with 19 CFR 351.225(m)(2), if there are companion AD and CVD orders covering the same merchandise from the same country of origin, the scope inquiry will be

<sup>5</sup> The products are wheeled 30” x 60” platform or flatbed utility carts with a rated load capacity of 2,000 lbs. that are ergonomically designed for worker safety and constructed of lightweight extruded aluminum tubes, aluminum plate, handles, and steel and rubber or polyurethane wheels. Cargo is loaded on the cargo deck and the cart is operated by pushing or pulling the cart in an orientation horizontal to the ground. The cart is not designed and cannot operate to transport cargo vertically, or in an upright orientation. The products are packaged and imported as complete kits, to be assembled by the purchaser/end user.

<sup>6</sup> In accordance with 19 CFR 351.225(d)(2), within 30 days after the filing of a scope ruling application, if Commerce determines that it intends to address the scope issue raised in the application in another segment of the proceeding (such as a circumvention inquiry under 19 CFR 351.226 or a covered merchandise inquiry under 19 CFR 351.227), it will notify the applicant that it will not initiate a scope inquiry, but will instead determine if the product is covered by the scope at issue in that alternative segment.

<sup>7</sup> See *Notice of Clarification: Application of “Next Business Day” Rule for Administrative Determination Deadlines Pursuant to the Tariff Act of 1930, As Amended*, 70 FR 24533 (May 10, 2005).

<sup>8</sup> This structure maintains the intent of the applicable regulation, 19 CFR 351.225(d)(1), to allow day 30 and day 31 to be separate business days.

conducted on the record of the AD proceeding. Further, please note that pursuant to 19 CFR 351.225(m)(1), Commerce may either apply a scope ruling to all products from the same country with the same relevant physical characteristics, (including chemical, dimensional, and technical characteristics) as the product at issue, on a country-wide basis, regardless of the producer, exporter, or importer of those products, or on a company-specific basis.

For further information on procedures for filing information with Commerce through ACCESS and participating in scope inquiries, please refer to the Filing Instructions section of the Scope Ruling Application Guide, at [https://access.trade.gov/help/Scope\\_Ruling\\_Guidance.pdf](https://access.trade.gov/help/Scope_Ruling_Guidance.pdf). Interested parties, apart from the scope ruling applicant, who wish to participate in a scope inquiry and be added to the public service list for that segment of the proceeding must file an entry of appearance in accordance with 19 CFR 351.103(d)(1) and 19 CFR 351.225(n)(4). Interested parties are advised to refer to the case segment in ACCESS as well as 19 CFR 351.225(f) for further information on the scope inquiry procedures, including the timelines for the submission of comments.

Please note that this notice of scope ruling applications filed in AD and CVD proceedings may be published before any potential initiation, or after the initiation, of a given scope inquiry based on a scope ruling application identified in this notice. Therefore, please refer to the case segment on ACCESS to determine whether a scope ruling application has been accepted or rejected and whether a scope inquiry has been initiated.

Interested parties who wish to be served scope ruling applications for a particular AD or CVD order may file a request to be included on the annual inquiry service list during the anniversary month of the publication of the AD or CVD order in accordance with 19 CFR 351.225(n) and Commerce’s procedures.<sup>9</sup>

Interested parties are invited to comment on the completeness of this monthly list of scope ruling applications received by Commerce. Any comments should be submitted to Scot Fullerton, Acting Deputy Assistant Secretary for AD/CVD Operations, Enforcement and Compliance, International Trade Administration, via email to [CommerceCLU@trade.gov](mailto:CommerceCLU@trade.gov).

<sup>9</sup> See *Scope Ruling Application; Annual Inquiry Service List; and Informational Sessions*, 86 FR 53205 (September 27, 2021).

This notice of scope ruling applications filed in AD and CVD proceedings is published in accordance with 19 CFR 351.225(d)(3).

Dated: November 26, 2024.

**Scot Fullerton,**

*Acting Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations.*

[FR Doc. 2024–28277 Filed 12–2–24; 8:45 am]

**BILLING CODE 3510–DS–P**

## DEPARTMENT OF COMMERCE

### International Trade Administration

[C–570–175]

#### **Certain Brake Drums From the People’s Republic of China: Preliminary Affirmative Countervailing Duty Determination and Alignment of Final Determination With Final Antidumping Duty Determination**

**AGENCY:** Enforcement and Compliance, International Trade Administration, Department of Commerce.

**SUMMARY:** The U.S. Department of Commerce (Commerce) preliminarily determines that countervailable subsidies are being provided to producers and exporters of certain brake drums (brake drums) from the People’s Republic of China (China). The period of investigation is January 1, 2023, through December 31, 2023. Interested parties are invited to comment on this preliminary determination.

**DATES:** Applicable February 3, 2024.

**FOR FURTHER INFORMATION CONTACT:** Nathan James or Olivia Woolverton, AD/CVD Operations, Office V, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Washington, DC 20230; telephone: (202) 482–5305 or (202) 482–7452, respectively.

#### **SUPPLEMENTARY INFORMATION:**

##### **Background**

This preliminary determination is made in accordance with section 703(b) of the Tariff Act of 1930, as amended (the Act). Commerce published the notice of initiation of this countervailing duty (CVD) investigation on July 17, 2024.<sup>1</sup> On July 22, 2024, Commerce tolled certain deadlines in this administrative proceeding by seven

<sup>1</sup> See *Certain Brake Drums from the People’s Republic of China and the Republic of Türkiye: Initiation of Countervailing Duty Investigations*, 89 FR 58106 (July 17, 2024) (*Initiation Notice*).

days.<sup>2</sup> On September 6, 2024, Commerce postponed the preliminary determination until November 25, 2024.<sup>3</sup>

For a complete description of events that followed the initiation of this investigation, *see* the Preliminary Decision Memorandum.<sup>4</sup> A list of topics discussed in the Preliminary Decision Memorandum is included as Appendix II to this notice. The Preliminary Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). ACCESS is available to registered users at <https://access.trade.gov>. In addition, a complete version of the Preliminary Decision Memorandum can be accessed directly at <https://access.trade.gov/public/FRNoticesListLayout.aspx>.

### Scope of the Investigation

The products covered by this investigation are brake drums from China. For a complete description of the scope of this investigation, *see* Appendix I.

### Scope Comments

In accordance with the *Preamble* to Commerce's regulations,<sup>5</sup> the *Initiation Notice* set aside a period of time for parties to raise issues regarding product coverage (*i.e.*, scope).<sup>6</sup> Certain interested parties commented on the scope of the investigation as it appeared in the *Initiation Notice*. Commerce intends to issue its preliminary decision regarding comments concerning the scope of the antidumping (AD) and CVD investigations in the preliminary determination of the companion AD investigations. We will incorporate the scope decisions from the AD investigations into the scope of the final CVD determination for this investigation after considering any relevant comments

<sup>2</sup> *See* Memorandum, "Tolling of Deadlines for Antidumping and Countervailing Duty Proceedings," dated July 22, 2024.

<sup>3</sup> *See Certain Brake Drums from the People's Republic of China and the Republic of Türkiye: Postponement of Preliminary Determinations in the Countervailing Duty Investigations*, 89 FR 72827 (September 6, 2024).

<sup>4</sup> *See* Memorandum, "Decision Memorandum for the Preliminary Affirmative Determination of the Countervailing Duty Investigation of Certain Brake Drums from the People's Republic of China," dated concurrently with, and hereby adopted by, this notice (Preliminary Decision Memorandum).

<sup>5</sup> *See Antidumping Duties; Countervailing Duties, Final Rule*, 62 FR 27296, 27323 (May 19, 1997) (*Preamble*).

<sup>6</sup> *See Initiation Notice*, 89 FR at 58109.

submitted in scope case and rebuttal briefs.<sup>7</sup>

### Methodology

Commerce is conducting this investigation in accordance with section 701 of the Act. For each of the subsidy programs found to be countervailable, Commerce preliminarily determines that there is a subsidy, *i.e.*, a financial contribution by an "authority" that gives rise to a benefit to the recipient, and that the subsidy is specific.<sup>8</sup> For a full description of the methodology underlying our preliminary determination, *see* the Preliminary Decision Memorandum.

Commerce notes that, in making these findings, it relied, in part, on facts available, and, because it finds that certain companies that failed to timely respond to Commerce's quantity and value (Q&V) questionnaire, as well as the Government of China, did not act to the best of their abilities to respond to Commerce's requests for information, it drew an adverse inference where appropriate in selecting from among the facts otherwise available.<sup>9</sup> For further information, *see* the "Use of Facts Otherwise Available and Adverse Inferences" section in the Preliminary Decision Memorandum.

### Alignment

In accordance with section 705(a)(1) of the Act and 19 CFR 351.210(b)(4), Commerce is aligning the final CVD determination in this investigation with the final determination in the concurrent AD investigation of brake drums from China, based on a request made by the petitioner.<sup>10</sup> Consequently, the final CVD determination will be issued on the same date as the final AD determination, which is currently scheduled to be issued no later than April 8, 2025, unless postponed.<sup>11</sup>

### All-Others Rate

Sections 703(d) and 705(c)(5)(A) of the Act provide that, in the preliminary determination, Commerce shall determine an estimated all-others rate for companies not individually

<sup>7</sup> The deadline for interested parties to submit scope case and rebuttal briefs will be established in the preliminary scope decision memorandum.

<sup>8</sup> *See* sections 771(5)(B) and (D) of the Act regarding financial contribution; section 771(5)(E) of the Act regarding benefit; and section 771(5A) of the Act regarding specificity.

<sup>9</sup> *See* sections 776(a) and (b) of the Act.

<sup>10</sup> *See* Petitioner's Letter, "Request to Align Final Antidumping and Countervailing Duty Determination," dated November 7, 2024.

<sup>11</sup> *See Certain Brake Drums from the Republic of Türkiye and the People's Republic of China: Postponement of Preliminary Determinations in the Less-Than-Fair-Value Investigations*, 89 FR 91675 (November 20, 2024).

examined. This rate shall be an amount equal to the weighted average of the estimated subsidy rates established for those companies individually examined, excluding any rates that are zero, *de minimis*, or based entirely under section 776 of the Act.

In this investigation, Commerce preliminarily calculated total net subsidy rates for CAIEC Trailer Master Co., Ltd. (CAIEC Trailer) and Shandong ConMet Mechanical, Ltd. (Shandong ConMet) that are not zero, *de minimis*, or based entirely on the facts otherwise available. Because Commerce calculated individual estimated countervailable subsidy rates for CAIEC Trailer and Shandong ConMet that are not zero, *de minimis*, or based entirely on the facts otherwise available, we have preliminarily calculated the all-others rate using a weighted-average of the individual estimated subsidy rates calculated for the examined respondents using each company's publicly-ranged sales values.<sup>12</sup>

### Rate for Non-Responsive Companies

Thirteen potential exporters and/or producers of brake drums from China did not timely respond to Commerce's Q&V questionnaire.<sup>13</sup> We find that, by not timely responding to the Q&V questionnaire, these companies withheld requested information and significantly impeded this proceeding. Thus, in reaching our preliminary determination, pursuant to sections 776(a)(2)(A) and (C) of the Act, we are basing the subsidy rate for the non-responsive companies on facts otherwise available.

We further preliminarily determine that an adverse inference is warranted, pursuant to section 776(b) of the Act. By failing to submit responses to Commerce's Q&V questionnaire, the non-responsive companies did not cooperate to the best of their abilities in this investigation. Accordingly, we preliminarily find that an adverse inference is warranted to ensure that the non-responsive companies will not obtain a more favorable result than had they fully complied with our request for information. For more information on

<sup>12</sup> *See* Memorandum, "Calculation of Subsidy Rate for All Others," dated concurrently with this notice.

<sup>13</sup> These companies are: (1) Guangzhou Joyhand Import & Export Co.; (2) Hebei Iruijin Auto Parts Co., Ltd.; (3) Henan Broad Top Metal Work, LLC.; (4) Henan Valiant Braking System Co.; (5) HTS (Tianjin) Supply Chain Co., Ltd.; (6) Panasia CVS (HK), Ltd.; (7) Raw King Brake Parts Co., Ltd.; (8) Tianjin Textile Group Import and Export Inc.; (9) Xiamen Timmy Industrial Co., Ltd.; (10) Xingtai Xunchiyoute Auto Parts Co.; (11) Yancheng Terbon Auto Parts Co.; (12) Yantai Hongtian Autoparts Co., Ltd.; and (13) Zhejiang Firsrd Group Co., Ltd.

the application of adverse facts available to the non-responsive companies, *see* “Use of Facts Otherwise Available and Adverse Inferences” in the Preliminary Determination Memorandum.

**Preliminary Determination**

Commerce preliminarily determines that the following estimated countervailable subsidy rates exist:

Company	Subsidy rate (percent <i>ad valorem</i> )
CAIEC Trailer Master Co., Ltd./Trailer Master CVS Inc <sup>14</sup> .....	41.51
Shandong ConMet Mechanical, Ltd./Weifang ConMet Mechanical Products Co., Ltd. <sup>15</sup> .....	6.76
Guangzhou Joyhand Import & Export Co .....	* 303.07
Hebei Rujijin Auto Parts Co., Ltd .....	* 303.07
Henan Broad Top Metal Work, Llc .....	* 303.07
Henan Valiant Braking System Co .....	* 303.07
HTS (Tianjin) Supply Chain Co., Ltd .....	* 303.07
Panasia CVS (HK), Ltd .....	* 303.07
Raw King Brake Parts Co., Ltd .....	* 303.07
Tianjin Textile Group Import and Export Inc .....	* 303.07
Xiamen Tinmy Industrial Co., Ltd .....	* 303.07
Xingtai Xunchiyoute Auto Parts Co .....	* 303.07
Yancheng Terbon Auto Parts Co .....	* 303.07
Yantai Hongtian Autoparts Co., Ltd .....	* 303.07
Zhejiang Firsd Group Co., Ltd .....	* 303.07
All Others .....	16.17

\* Rate based on facts available with adverse inferences.

**Disclosure**

Commerce intends to disclose to interested parties the calculations performed in connection with this preliminary determination within five days of its public announcement or, if there is no public announcement, within five days of the date of publication of this notice in accordance with 19 CFR 351.224(b).

Consistent with 19 CFR 351.224(e), Commerce will analyze and, if appropriate, correct any timely allegations of significant ministerial errors by amending the preliminary determination. However, consistent

<sup>14</sup> Commerce found CAIEC Trailer Master Co., Ltd. and Trailer Master CVS Inc to be cross-owned entities.

<sup>15</sup> Commerce found Shandong ConMet Mechanical, Ltd. and Weifang ConMet Mechanical Products Co., Ltd. to be cross-owned entities.

with 19 CFR 351.224(d), Commerce will not consider incomplete allegations that do not address the significance standard under 19 CFR 351.224(g) following the preliminary determination. Instead, Commerce will address such allegations in the final determination together with issues raised in the case briefs or other written comments.

**Suspension of Liquidation**

In accordance with section 703(d)(1)(B) and (d)(2) of the Act, Commerce will direct U.S. Customs and Border Protection (CBP) to suspend liquidation of entries of subject merchandise as described in the scope of the investigation entered, or withdrawn from warehouse, for consumption on or after the date of publication of this notice in the **Federal Register**. Further, pursuant to 19 CFR 351.205(d), Commerce will instruct CBP to require a cash deposit equal to the rates indicated above.

**Verification**

As provided in section 782(i)(1) of the Act, Commerce intends to verify the information relied upon in making its final determination.

**Public Comment**

All interested parties will have the opportunity to submit scope case and rebuttal briefs on the preliminary decision regarding the scope of the AD and CVD investigations. The deadlines to submit scope case and rebuttal briefs will be provided in the preliminary scope decision memorandum. For all scope case and rebuttal briefs, parties must file identical documents simultaneously on the records of the ongoing AD and CVD brake drums investigations. No new factual information or business proprietary information may be included in either scope case or rebuttal briefs.

Case briefs or other written comments on non-scope issues may be submitted to the Assistant Secretary for Enforcement and Compliance no later than seven days after the date on which the last verification report is issued in this investigation. Rebuttal briefs, limited to issues raised in the case briefs, may be filed not later than five days after the date for filing case briefs.<sup>16</sup> Interested parties who submit case briefs or rebuttal briefs in this proceeding must submit: (1) a table of

<sup>16</sup> See 19 CFR 351.309(d); *see also Administrative Protective Order, Service, and Other Procedures in Antidumping and Countervailing Duty Proceedings*, 88 FR 67069, 67077 (September 29, 2023) (*APO and Service Final Rule*).

contents listing each issue; and (2) a table of authorities.<sup>17</sup>

As provided under 19 CFR 351.309(c)(2) and (d)(2), in prior proceedings we have encouraged interested parties to provide an executive summary of their briefs that should be limited to five pages total, including footnotes. In this investigation, we instead request that interested parties provide at the beginning of their briefs a public, executive summary for each issue raised in their briefs.<sup>18</sup> Further, we request that interested parties limit their executive summary of each issue to no more than 450 words, not including citations. We intend to use the executive summaries as the basis of the comment summaries included in the issues and decision memorandum that will accompany the final determination in this investigation. We request that interested parties include footnotes for relevant citations in the executive summary of each issue. Note that Commerce has amended certain of its requirements pertaining to the service of documents in 19 CFR 351.303(f).<sup>19</sup>

Pursuant to 19 CFR 351.310(c), interested parties who wish to request a hearing, limited to issues raised in the case and rebuttal briefs, must submit a written request to the Assistant Secretary for Enforcement and Compliance, U.S. Department of Commerce via ACCESS within 30 days after the date of publication of this notice. Requests should contain the party’s name, address, and telephone number, the number of participants and whether any participant is a foreign national, and a list of the issues to be discussed. Oral presentations at the hearing will be limited to issues raised in the briefs. If a request for a hearing is made, parties will be notified of the time and date for the hearing.<sup>20</sup> Parties should confirm by telephone the date, time, and location of the hearing two days before the scheduled date.

**U.S. International Trade Commission Notification**

In accordance with section 703(f) of the Act, Commerce will notify the U.S. International Trade Commission (ITC) of its determination. If the final determination is affirmative, the ITC will determine before the later of 120 days after the date of this preliminary

<sup>17</sup> See 19 CFR 351.309(c)(2) and (d)(2).

<sup>18</sup> We use the term “issue” here to describe an argument that Commerce would normally address in a comment of the Issues and Decision Memorandum.

<sup>19</sup> See *APO and Service Final Rule*, 88 FR at 67069.

<sup>20</sup> See 19 CFR 351.310(d).

determination or 45 days after the final determination whether imports of brake drums from China are materially injuring, or threaten material injury to, the U.S. industry.

### Notification to Interested Parties

This determination is issued and published in accordance with sections 703(f) and 777(i)(1) of the Act, and 19 CFR 351.205(c).

Dated: November 25, 2024.

**Abdelali Elouaradia,**

*Deputy Assistant Secretary for Enforcement and Compliance.*

### Appendix I

#### Scope of the Investigation

The products covered by this investigation are certain brake drums made of gray cast iron, whether finished or unfinished, with an actual or nominal inside diameter of 14.75 inches or more but not over 16.6 inches, weighing more than 50 pounds. Unfinished brake drums are those which have undergone some turning or machining but are not ready for installation. Subject brake drums are included within the scope whether imported individually or with non-subject merchandise (for example, a hub), whether assembled or unassembled, or if joined with non-subject merchandise. When a subject drum is imported together with non-subject merchandise, such as, but not limited to, a drum-hub assembly, only the subject drum is covered by the scope.

Subject merchandise also includes finished and unfinished brake drums that are further processed in a third country or in the United States, including, but not limited to, assembly or any other processing that would not otherwise remove the merchandise from the scope of the investigation if performed in the country of manufacture of the subject brake drums. The inclusion, attachment, joining, or assembly of non-subject merchandise with subject drums either in the country of manufacture of the subject drum or in a third country does not remove the subject drum from the scope. Specifically excluded is merchandise covered by the scope of the antidumping and countervailing duty orders on certain chassis and subassemblies thereof from the People's Republic of China. See *Certain Chassis and Subassemblies Thereof from the People's Republic of China: Antidumping Duty Order*, 86 FR 36093 (July 8, 2021) and *Certain Chassis and Subassemblies Thereof from the People's Republic of China: Countervailing Duty Order and Amended Final Affirmative Countervailing Duty Determination*, 86 FR 24844 (May 10, 2021).

The scope also excludes composite brake drums that contain more than 40 percent steel by weight.

The merchandise covered by this investigation is classifiable under Harmonized Tariff Schedule of the United States (HTSUS) subheading 8708.30.5020. The merchandise covered by the investigation may be classifiable under HTSUS subheading 8708.30.5090 when entered as part of an assembly. Subject

merchandise may also enter under HTSUS subheading 8716.90.5060. Although the HTSUS subheadings are provided for convenience and customs purposes, the written description of the merchandise covered by this investigation is dispositive.

### Appendix II

#### List of Topics Discussed in the Preliminary Decision Memorandum

- I. Summary
- II. Background
- III. Injury Test
- IV. Analysis of China's Financial System
- V. Diversification of China's Economy
- VI. Use of Facts Available and Adverse Inferences
- VII. Subsidies Valuation
- VIII. Benchmarks and Interest Rates
- IX. Analysis of Programs
- X. Recommendation

[FR Doc. 2024–28238 Filed 12–2–24; 8:45 am]

**BILLING CODE 3510–DS–P**

## CONSUMER PRODUCT SAFETY COMMISSION

[Docket No. CPSC–2012–0024]

### Agency Information Collection Activities; Extension of Collection; Comment Request; Notification Requirements for Coal and Wood Burning Appliances

**AGENCY:** Consumer Product Safety Commission.

**ACTION:** Notice of information collection; request for comment.

**SUMMARY:** As required by the Paperwork Reduction Act of 1995, the Consumer Product Safety Commission (CPSC or Commission) requests comments on a proposed extension of approval of information collection regarding notification requirements for coal and wood burning appliances. The Office of Management and Budget (OMB) previously approved the collection of information under control number 3041–0040. OMB's most recent extension of approval will expire on March 31, 2025. The Commission will consider all comments received in response to this notice before requesting an extension of this collection of information from OMB.

**DATES:** Submit comments on the collection of information by February 3, 2025.

**ADDRESSES:** You may submit comments, identified by Docket No. CPSC–2012–0024, within 60 days of publication of this notice by any of the following methods:

*Electronic Submissions:* Submit electronic comments to the Federal eRulemaking Portal at: [http://](http://www.regulations.gov)

[www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments. Do not submit through this website: confidential business information, trade secret information, or other sensitive or protected information that you do not want to be available to the public. The Commission typically does not accept comments submitted by email, except as described below.

*Mail/Hand Delivery/Courier/Written Submissions:* CPSC encourages you to submit electronic comments by using the Federal eRulemaking Portal. You may, however, submit comments by mail/hand delivery/courier to: Office of the Secretary, Consumer Product Safety Commission, 4330 East-West Highway, Bethesda, MD 20814; telephone (301) 504–7923.

*Instructions:* All submissions received must include the agency name and docket number for this notice. CPSC may post all comments without change, including any personal identifiers, contact information, or other personal information provided, to: <http://www.regulations.gov>. If you wish to submit confidential business information, trade secret information, or other sensitive or protected information that you do not want to be available to the public, you may submit such comments by mail, hand delivery, or courier, or you may email them to [cpsc-os@cpsc.gov](mailto:cpsc-os@cpsc.gov).

*Docket:* For access to the docket to read background documents or comments received, go to: <https://www.regulations.gov>, insert docket number CPSC–2012–0024 into the “Search” box, and follow the prompts.

**FOR FURTHER INFORMATION CONTACT:** Cynthia Gillham, Consumer Product Safety Commission, 4330 East-West Highway, Bethesda, MD 20814; (301) 504–7791, or by email to: [pra@cpsc.gov](mailto:pra@cpsc.gov).

**SUPPLEMENTARY INFORMATION:** CPSC seeks to renew the following currently approved collection of information:

*Title:* Notification Requirements for Coal and Wood Burning Appliances.

*OMB Number:* 3041–0040.

*Type of Review:* Renewal of collection.

*Frequency of Response:* On occasion.

*Affected Public:* Manufacturers and importers of coal and wood burning appliances.

*Estimated Number of Respondents:* We estimate five responses annually.

*Estimated Time per Response:* We estimate three hours per submission and 30 minutes for collecting and mailing the information to the CPSC.

*Total Estimated Annual Burden:* The total estimated annual burden is 17.5 hours (5 submissions × 3.5 hours).

*Total Estimated Annual Cost to Respondents:* The total estimated annualized respondent cost is approximately \$795, based on an average total hourly employee compensation rate of \$45.41 for private industry workers in goods producing industries (17.5 hours × \$45.41 = \$794.68) (U.S. Bureau of Labor Statistics, Employer Costs for Employee Compensation, Table 4, June 2024, [https://www.bls.gov/news.release/archives/ecec\\_09102024.pdf](https://www.bls.gov/news.release/archives/ecec_09102024.pdf).)

*General Description of Collection:* In 16 CFR part 1406, Coal and Wood Burning Appliances—Notification of Performance and Technical Data, issued under Section 27(e) of the Consumer Product Safety Act, 15 U.S.C. 2076(e), CPSC requires that certain performance and technical data be supplied on labeling attached to or accompanying each model of coal and wood burning stoves, freestanding fireplaces, similar appliances, and in instruction manuals provided with the appliances so consumers will be aware of important safety information concerning the installation, operation, and maintenance of these appliances. In addition, catalogs and other point-of-sale literature are required to contain appropriate clearances and other information.

The rule also contains a requirement that manufacturers provide to the Commission copies of the notice (label) and the directions (instruction manual). Manufacturers must also provide the Commission with a statement of the reasons supporting the manufacturer's conclusion that clearance distances stated in the notice to consumers are appropriate for preventing fires, for each stove model manufactured. This information must also be supplied when there is any change in the required data or when a new model is introduced.

All known manufacturers have already complied with the requirements for providing information in labels, manuals, catalogs, and point-of-sale literature and have met the requirements for submitting all labels and owner's manuals. For the known manufacturers, there should be no additional burden associated with the requirements of 16 CFR part 1406, except when existing models are changed, or new models are introduced. We anticipate that there will be no more than five submissions annually as a result of new stove models coming into the market or new firms entering the market.

*Request for Comments:*

The Commission solicits written comments from all interested persons about the proposed collection of information. The Commission

specifically solicits information relevant to the following topics:

- whether the collection of information described above is necessary for the proper performance of the Commission's functions, including whether the information would have practical utility;
- whether the estimated burden of the proposed collection of information is accurate;
- whether the quality, utility, and clarity of the information to be collected could be enhanced; and
- whether the burden imposed by the collection of information could be minimized by use of automated, electronic or other technological collection techniques, or other forms of information technology.

**Alberta E. Mills,**

Secretary, Consumer Product Safety Commission.

[FR Doc. 2024–28243 Filed 12–2–24; 8:45 am]

**BILLING CODE 6355–01–P**

## CONSUMER PRODUCT SAFETY COMMISSION

### Sunshine Act Meeting

**TIME AND DATE:** Wednesday, December 4, 2024—10:00 a.m. (See **MATTERS TO BE CONSIDERED**).

**PLACE:** The meeting will be held remotely, and in person at 4330 East-West Highway, Bethesda, Maryland 20814.

**STATUS:** Commission Meeting—Open to the Public.

**MATTERS TO BE CONSIDERED:**

*Briefing Matter:* Final Rule to Revise 16 CFR part 1110, Certificates of Compliance and to Implement eFiling of Certificates for Regulated, Imported Consumer Products.

*To attend the meeting remotely, please use the following link: <https://cpsc.webex.com/cpsc/j.php?MTID=m3df61e5011f7fbbb45378f5abfe9d41a>.*

**CONTACT PERSON FOR MORE INFORMATION:** Alberta E. Mills, Office of the Secretary, U.S. Consumer Product Safety Commission, 4330 East-West Highway, Bethesda, MD 20814, 301–504–7479 (Office) or 240–863–8938 (Cell).

Dated: November 27, 2024.

**Alberta Mills,**

Commission Secretary.

[FR Doc. 2024–28370 Filed 11–29–24; 11:15 am]

**BILLING CODE P**

## DEPARTMENT OF EDUCATION

### Applications for New Awards; State Personnel Development Grants

**AGENCY:** Office of Special Education and Rehabilitative Services, Department of Education.

**ACTION:** Notice.

**SUMMARY:** The Department of Education (Department) is issuing a notice inviting applications for new awards for fiscal year (FY) 2025 for the State Personnel Development Grants (SPDG) program.

**DATES:**

*Applications Available:* December 3, 2024.

*Deadline for Transmittal of Applications:* February 18, 2025.

*Deadline for Intergovernmental Review:* April 17, 2025.

*Pre-Application Webinar Information:*

No later than December 9, 2024, the Office of Special Education and Rehabilitative Services will post pre-recorded informational webinars designed to provide technical assistance (TA) to interested applicants. The webinars may be found at [www.ed.gov/about/ed-offices/osers/osep/new-osep-grant-competitions](http://www.ed.gov/about/ed-offices/osers/osep/new-osep-grant-competitions).

*Note:* For new potential grantees unfamiliar with grantmaking at the Department, please consult our “Getting Started with Discretionary Grant Applications” web page at [www.ed.gov/grants-and-programs/apply-grant/getting-started-discretionary-grant-applications](http://www.ed.gov/grants-and-programs/apply-grant/getting-started-discretionary-grant-applications).

**ADDRESSES:** For the addresses for obtaining and submitting an application, please refer to our Common Instructions for Applicants to Department of Education Discretionary Grant Programs, published in the **Federal Register** on December 7, 2022 (87 FR 75045) and available at [www.federalregister.gov/documents/2022/12/07/2022-26554/common-instructions-for-applicants-to-department-of-education-discretionary-grant-programs](http://www.federalregister.gov/documents/2022/12/07/2022-26554/common-instructions-for-applicants-to-department-of-education-discretionary-grant-programs).

**FOR FURTHER INFORMATION CONTACT:**

Jennifer Coffey, U.S. Department of Education, 400 Maryland Avenue SW, Room 4A220, Washington, DC 20202. Telephone: (202) 987–0150. Email: [jennifer.coffey@ed.gov](mailto:jennifer.coffey@ed.gov).

If you are deaf, hard of hearing, or have a speech disability and wish to access telecommunications relay services, please dial 7–1–1.

**SUPPLEMENTARY INFORMATION:**

**Full Text of Announcement**

**I. Funding Opportunity Description**

*Purpose of Program:* The purpose of the SPDG program is to assist State



educational agencies (SEAs) in reforming and improving their systems for personnel preparation and professional development in early intervention, educational, and transition services to improve results for children with disabilities.

*Assistance Listing Number:* 84.323A.

*OMB Control Number:* 1820-0028.

*Background:* “Raise the Bar: Lead the World” (RTB) is the Department’s call to action to transform prekindergarten through postsecondary learning and unite around what truly works by promoting academic excellence, boldly improving learning conditions, and preparing our Nation’s students for global competitiveness ([www.ed.gov/raisethebar/](http://www.ed.gov/raisethebar/)). A well-prepared and supported and sustainable educator workforce available to educate and support all children and youth, including children and youth with disabilities, is essential to this call to action. This competition is designed to support the Department’s RTB goals. Specifically, the priorities for this competition are designed to support projects that—

- Mitigate the barriers to improved educational opportunities and outcomes and functional results for children with disabilities by increasing the number of well-qualified, fully certified special education teachers, including paraprofessionals;
- Increase collaborative and effective instruction and services for children with disabilities;
- Expand the ability of principals to serve as instructional leaders who create an equity-based, cooperative, and inclusive environment; and
- Provide pre-service and in-service personnel with the knowledge, attitudes, skills, and aspiration to engage effectively with families.

The SPDG program, as a pre-service and in-service professional development program, is uniquely positioned to support the Department’s RTB goals by helping to ensure that children with disabilities have access to well-qualified educators and by growing the number of teachers and administrators who can use data to develop and implement standards-based individualized education programs (IEPs) and provide effective instruction in inclusive environments. The priorities specified in this notice are designed to support pathways and professional development for personnel to improve outcomes for children with disabilities. For more on the Department’s work to eliminate educator shortages, see [www.ed.gov/raisethebar/educators](http://www.ed.gov/raisethebar/educators).

This competition also includes four competitive preference priorities,

detailed later in this notice. Applicants may address up to two. We note that Competitive Preference Priority 1 encourages applications that provide pathways for becoming fully certified special education teachers that are affordable and provide for robust preservice classroom experience. By reducing the cost of earning a license and offering flexible scheduling, teacher residency, Grow Your Own (GYO), and registered teacher apprenticeships programs are designed to bring more people into the profession. These programs may open doors to the profession for those who may otherwise face barriers to entrance, including multilingual, racially, and ethnically diverse individuals, individuals who have disabilities, and paraprofessionals who may already have decades of classroom experience, but for numerous reasons, including cost, could not pursue a teaching degree or a high-quality pathway into the profession that includes significant clinical experience.

Research shows that high-quality residency models can expand the pool of well-prepared applicants entering the teaching profession, increase the diversity of the workforce and bring a wide range of experiences into the classroom to support students. A 2014 implementation study published by the Institute of Education Sciences shows that residents are more likely than nonresidents to report feeling prepared to enter the classroom and that after program completion, more than 90 percent of residents stayed in their school district for three years (Silva et al., 2014).

When aligned to high-quality, evidence-based practices for education preparation, such as those drafted by the Pathways Alliance ([www.thepathwaysalliance.org/reports](http://www.thepathwaysalliance.org/reports)) and approved by the Department of Labor, registered teacher apprenticeship programs have the potential to be an effective, high-quality “earn and learn” model that allow candidates to earn their teaching credential while earning a salary by combining coursework with structured, paid on-the-job learning experiences with a mentor teacher (Pathways Alliance, 2023). Registered teacher apprenticeship programs for K–12 teachers can be used to establish, scale, and build on existing high-quality pathways into teaching that emphasize classroom-based experience, such as teacher residencies and GYO.

GYO is an approach to developing a pipeline of educator candidates to meet specific workforce needs that seeks to eliminate any barriers that may prevent local candidates from entering or remaining in the field. GYO programs

are distinguished from other pipelines by whom they target, focusing on recruitment of high school students, career changers, paraprofessionals, non-teaching-school faculty, and community members (Espinoza et al., 2018). Offering financial aid (e.g., loan forgiveness, grants, and scholarships) to candidates completing GYO programs, targeting communication to specific populations, and establishing systems for candidates to receive continuous coaching and mentoring from entrance into the GYO program through early service can all aid in the success of these programs (Carver-Thomas, 2018; Professional Educator Standards Board, 2018; Texas Comprehensive Center, 2018). GYO programs can help address shortages in high-need areas and subjects, such as in rural schools and in special education (Jessen et al., 2020); it can also result in improved recruitment and retention of teachers of color (Gist et al., 2019).

*Priorities:* This notice contains three absolute priorities and four competitive preference priorities. In accordance with 34 CFR 75.105(b)(1), Absolute Priority 1 is from the notice of final priorities and definitions (NFP) published in the **Federal Register** on August 2, 2012 (77 FR 45944) (2012 NFP); and Absolute Priority 3 and the four competitive preference priorities are from the NFP published in the **Federal Register** on July 9, 2024 (89 FR 56211) (2024 NFP). In accordance with 34 CFR 75.105(b)(2)(iv), Absolute Priority 2 is from sections 651 through 655 of the Individuals with Disabilities Education Act (IDEA), as amended by the Every Student Succeeds Act (ESSA).

*Absolute Priorities:* For FY 2025 and any subsequent year in which we make awards from the list of unfunded applications from this competition, these priorities are absolute priorities. Under 34 CFR 75.105(c)(3), we consider only applications that meet Absolute Priorities 1, 2, and 3 (i.e., an applicant must address all three absolute priorities in their application).

These priorities are:

*Absolute Priority 1: Effective and Efficient Delivery of Professional Development.*

The Department establishes a priority to assist SEAs in reforming and improving their systems for personnel (as that term is defined in section 651(b) of IDEA) preparation and professional development of individuals providing early intervention, educational, and transition services in order to improve results for children with disabilities.

In order to meet this priority an applicant must demonstrate in the SPDG State Plan it submits as part of its



application under section 653(a)(2) of IDEA that its proposed project will—

(1) Use evidence-based (as defined in this notice) professional development practices that will increase implementation of evidence-based practices and result in improved outcomes for children with disabilities;

(2) Provide ongoing assistance to personnel receiving SPDC-supported professional development that supports the implementation of evidence-based practices with fidelity (as defined in this notice); and

(3) Use technology to more efficiently and effectively provide ongoing professional development to personnel, including to personnel in rural areas and to other populations, such as personnel in urban or high-need local educational agencies (LEAs) (as defined in this notice).

*Absolute Priority 2: State Personnel Development Grants.*

*Statutory Requirements.* To meet this priority, an applicant must meet the following statutory requirements:

1. State Personnel Development Plan.

An applicant must submit a State Personnel Development Plan that identifies and addresses the State and local needs for the personnel preparation and professional development of personnel, as well as individuals who provide direct supplementary aids and services to children with disabilities, and that—

(a) Is designed to enable the State to meet the requirements of section 612(a)(14) of IDEA, as amended by the ESSA, and section 635(a)(8) and (9) of IDEA;

(b) Is based on an assessment of State and local needs that identifies critical aspects and areas in need of improvement related to the preparation, ongoing training, and professional development of personnel who serve infants, toddlers, preschoolers, and children with disabilities within the State, including—

(1) Current and anticipated personnel vacancies and shortages; and

(2) The number of preservice and in-service programs;

(c) Is integrated and aligned, to the maximum extent possible, with State plans and activities under the Elementary and Secondary Education Act of 1965, as amended (ESEA); the Rehabilitation Act of 1973, as amended; and the Higher Education Act of 1965, as amended (HEA);

(d) Describes a partnership agreement that is in effect for the period of the grant, which agreement must specify—

(1) The nature and extent of the partnership described in section 652(b) of IDEA and the respective roles of each

member of the partnership, including, if applicable, an individual, entity, or agency other than the SEA that has the responsibility under State law for teacher preparation and certification; and

(2) How the SEA will work with other persons and organizations involved in, and concerned with, the education of children with disabilities, including the respective roles of each of the persons and organizations;

(e) Describes how the strategies and activities the SEA uses to address identified professional development and personnel needs will be coordinated with activities supported with other public resources (including funds provided under Part B and Part C of IDEA and retained for use at the State level for personnel and professional development purposes) and private resources;

(f) Describes how the SEA will align its personnel development plan with the plan and application submitted under sections 1111 and 2101(d), respectively, of the ESEA;

(g) Describes strategies the SEA will use to address the identified professional development and personnel needs and how such strategies will be implemented, including—

(1) A description of the programs and activities that will provide personnel with the knowledge and skills to meet the needs of, and improve the performance and achievement of, infants, toddlers, preschoolers, and children with disabilities; and

(2) How such strategies will be integrated, to the maximum extent possible, with other activities supported by grants funded under section 662 of IDEA (20 U.S.C. 1462);

(h) Provides an assurance that the SEA will provide TA to LEAs to improve the quality of professional development available to meet the needs of personnel who serve children with disabilities;

(i) Provides an assurance that the SEA will provide TA to entities that provide services to infants and toddlers with disabilities to improve the quality of professional development available to meet the needs of personnel serving such children;

(j) Describes how the SEA will recruit and retain teachers who meet the qualifications described in section 612(a)(14)(C) of IDEA (20 U.S.C. 1412(a)(14)(C)), and other qualified personnel in geographic areas of greatest need;

(k) Describes the steps the SEA will take to ensure that poor and minority children are not taught at higher rates by

teachers who do not meet the qualifications described in section 612(a)(14)(C) of IDEA (20 U.S.C. 1412(a)(14)(C)); and

(l) Describes how the SEA will assess, on a regular basis, the extent to which the strategies implemented have been effective in meeting the performance goals described in section 612(a)(15) of IDEA (20 U.S.C. 1412(a)(15)).

2. Partnerships.

(a) Required Partners.

Applicants must establish a partnership with LEAs and other State agencies involved in, or concerned with, the education of children with disabilities, including—

(1) Not less than one institution of higher education (IHE);

(2) The State agencies responsible for administering Part C of IDEA, early education, childcare, and vocational rehabilitation programs; and

(3) In accordance with section 652(b)(3) of IDEA, if State law assigns responsibility for teacher preparation and certification to an individual, entity, or agency other than the SEA, such individual, entity, or agency. The SEA must ensure that any activities it carries out under this program that are within such partner's jurisdiction (which may include activities described in section 654(b) of IDEA) are carried out by that partner.

(b) Other Partners.

An SEA must work in partnership with other persons and organizations involved in, and concerned with, the education of children with disabilities, which may include—

(1) The Governor;

(2) Parents of children with disabilities ages birth through 26;

(3) Parents of nondisabled children ages birth through 26;

(4) Individuals with disabilities;

(5) Parent training and information centers or community parent resource centers funded under sections 671 and 672 of IDEA, respectively;

(6) Community based and other nonprofit organizations involved in the education and employment of individuals with disabilities;

(7) Personnel as defined in section 651(b) of IDEA;

(8) The State advisory panel established under Part B of IDEA;

(9) The State interagency coordinating council established under Part C of IDEA;

(10) Individuals knowledgeable about vocational education;

(11) The State agency for higher education;

(12) Public agencies with jurisdiction in the areas of health, mental health, social services, and juvenile justice;

(13) Other providers of professional development that work with infants, toddlers, preschoolers, and children with disabilities; and

(14) Other individuals.

### 3. Use of Funds.

(a) Professional Development Activities—Each SEA that receives a grant under this program must use the grant funds to support activities in accordance with the State's Personnel Development Plan, including one or more of the following:

(1) Carrying out programs that provide support to both special education and regular education teachers of children with disabilities and principals, such as programs that—

(i) Provide teacher mentoring, team teaching, reduced class schedules and caseloads, and intensive professional development;

(ii) Use standards or assessments for guiding beginning teachers that are consistent with challenging State academic achievement standards and with the requirements for professional development, as defined in section 8101 of the ESEA; and

(iii) Encourage collaborative and consultative models of providing early intervention, special education, and related services.

(2) Encouraging and supporting the training of special education and regular education teachers and administrators to effectively use and integrate technology—

(i) Into curricula and instruction, including training to improve the ability to collect, manage, and analyze data to improve teaching, decision making, school improvement efforts, and accountability;

(ii) To enhance learning by children with disabilities; and

(iii) To effectively communicate with parents.

(3) Providing professional development activities that—

(i) Improve the knowledge of special education and regular education teachers concerning—

(A) The academic and developmental or functional needs of students with disabilities; or

(B) Effective instructional strategies, methods, and skills, and the use of State academic content standards and student academic achievement and functional standards, and State assessments, to improve teaching practices and student academic achievement;

(ii) Improve the knowledge of special education and regular education teachers and principals and, in appropriate cases, paraprofessionals, concerning effective instructional practices, and that—

(A) Provide training in how to teach and address the needs of children with different learning styles and children who are limited English proficient;

(B) Involve collaborative groups of teachers, administrators, and, in appropriate cases, related services personnel;

(C) Provide training in methods of—

(1) Positive behavioral interventions and supports to improve student behavior in the classroom;

(2) Scientifically based reading instruction, including early literacy instruction;

(3) Early and appropriate interventions to identify and help children with disabilities;

(4) Effective instruction for children with low-incidence disabilities;

(5) Successful transitioning to postsecondary opportunities; and

(6) Using classroom-based techniques to assist children prior to referral for special education;

(D) Provide training to enable personnel to work with and involve parents in their child's education, including parents of low income and limited English proficient children with disabilities;

(E) Provide training for special education personnel and regular education personnel in planning, developing, and implementing effective and appropriate individualized education programs (IEPs); and

(F) Provide training to meet the needs of students with significant health, mobility, or behavioral needs prior to serving those students;

(iii) Train administrators, principals, and other relevant school personnel in conducting effective IEP meetings; and

(iv) Train early intervention, preschool, and related services providers, and other relevant school personnel in conducting effective individualized family service plan (IFSP) meetings.

(4) Developing and implementing initiatives to promote the recruitment and retention of special education teachers who meet the qualifications described in section 612(a)(14)(C) of IDEA, as amended by the ESSA, particularly initiatives that have proven effective in recruiting and retaining teachers, including programs that provide—

(i) Teacher mentoring from exemplary special education teachers, principals, or superintendents;

(ii) Induction and support for special education teachers during their first three years of employment as teachers; or

(iii) Incentives, including financial incentives, to retain special education

teachers who have a record of success in helping students with disabilities.

(5) Carrying out programs and activities that are designed to improve the quality of personnel who serve children with disabilities, such as—

(i) Innovative professional development programs (which may be provided through partnerships that include IHEs), including programs that train teachers and principals to integrate technology into curricula and instruction to improve teaching, learning, and technology literacy, which must be consistent with the definition of professional development in section 8101 of the ESEA; and

(ii) The development and use of proven, cost-effective strategies for the implementation of professional development activities, such as through the use of technology and distance learning.

(6) Carrying out programs and activities that are designed to improve the quality of early intervention personnel, including paraprofessionals and primary referral sources, such as—

(i) Professional development programs to improve the delivery of early intervention services;

(ii) Initiatives to promote the recruitment and retention of early intervention personnel; and

(iii) Interagency activities to ensure that early intervention personnel are adequately prepared and trained.

(b) Other Activities—Each SEA that receives a grant under this program must use the grant funds to support activities in accordance with the State's Personnel Development Plan, including one or more of the following:

(1) Reforming special education and regular education teacher certification (including recertification) or licensing requirements to ensure that—

(i) Special education and regular education teachers have—

(A) The training and information necessary to address the full range of needs of children with disabilities across disability categories; and

(B) The necessary subject matter knowledge and teaching skills in the academic subjects that the teachers teach;

(ii) Special education and regular education teacher certification (including recertification) or licensing requirements are aligned with challenging State academic content standards; and

(iii) Special education and regular education teachers have the subject matter knowledge and teaching skills, including technology literacy, necessary to help students with disabilities meet

challenging State student academic achievement and functional standards.

(2) Programs that establish, expand, or improve alternative routes for State certification of special education teachers for individuals with a baccalaureate or master's degree who meet the qualifications described in section 612(a)(14)(C) of IDEA (20 U.S.C. 1412(a)(14)(C)) including mid-career professionals from other occupations, paraprofessionals, and recent college or university graduates with records of academic distinction who demonstrate the potential to become highly effective special education teachers.

(3) Teacher advancement initiatives for special education teachers that promote professional growth and emphasize multiple career paths (such as paths to becoming a career teacher, mentor teacher, or exemplary teacher) and pay differentiation.

(4) Developing and implementing mechanisms to assist LEAs and schools in effectively recruiting and retaining special education teachers who meet the qualifications described in section 612(a)(14)(C) of IDEA (20 U.S.C. 1412(a)(14)(C)).

(5) Reforming tenure systems, implementing teacher testing for subject matter knowledge, and implementing teacher testing for State certification or licensure, consistent with title II of the HEA (20 U.S.C. 1021 *et seq.*).

(6) Funding projects to promote reciprocity of teacher certification or licensing between or among States for special education teachers, except that no reciprocity agreement developed under this absolute priority or developed using funds awarded under the SPDG competition may lead to the weakening of any State teacher certification or licensing requirement.

(7) Assisting LEAs to serve children with disabilities through the development and use of proven, innovative strategies to deliver intensive professional development programs that are both cost effective and easily accessible, such as strategies that involve delivery through the use of technology, peer networks, and distance learning.

(8) Developing, or assisting LEAs in developing, merit-based performance systems and strategies that provide differential and bonus pay for special education teachers.

(9) Supporting activities that ensure that teachers are able to use challenging State academic content standards and student academic achievement and functional standards, and State assessments for all children with disabilities, to improve instructional practices and improve the academic

achievement of children with disabilities.

(10) When applicable, coordinating with, and expanding centers established under section 2113(c)(18) of the ESEA, as amended by No Child Left Behind Act of 2002, to benefit special education teachers.

(c) Contracts and Subgrants—An SEA that receives a grant under this program—

(1) Must award contracts or subgrants to LEAs, IHEs, parent training and information centers, or community parent resource centers, as appropriate, to carry out the State Personnel Development Plan; and

(2) May award contracts and subgrants to other public and private entities, including the State lead agency (LA) (as defined in this notice) under Part C of IDEA, to carry out the State Personnel Development Plan.

(d) Use of Funds for Professional Development—An SEA that receives a grant under this program must use—

(1) Not less than 90 percent of the funds the SEA receives under the grant for any fiscal year for the Professional Development Activities described in paragraph (a); and

(2) Not more than 10 percent of the funds the SEA receives under the grant for any fiscal year for the Other Activities described in paragraph (b).

*Absolute Priority 3: Improving Engagement between Schools and Families.*

Projects designed to develop the capacity of administrators and educators to develop systems and use strategies that build trust and engagement with families, while further strengthening the role families play in their child's development and learning. Projects must—

(a) Provide training and coaching to assist administrators to—

(1) Develop and implement policies and programs that recognize families' funds of knowledge, connect family engagement to student learning, and create welcoming, inviting cultures; and

(2) Create systems that support staff and families in meaningful engagement (*i.e.*, Leading by Convening and the Dual-Capacity Framework. For more information visit [www.dualcapacity.org](http://www.dualcapacity.org) and [www.ncsi.wested.org/resources/leading-by-convening](http://www.ncsi.wested.org/resources/leading-by-convening));

(b) Provide training and coaching to assist educators and early intervention providers to—

(1) Build their knowledge, attitudes, beliefs, aspirations, and behaviors about effective strategies to engage families in their child's learning;

(2) Work with families to make collaborative, data-based decisions in

the development and implementation of the child's IEP; and

(3) Provide information and resources to families that enable them to support their children's learning and behavior at home; and

(c) Provide training and coaching to families so they can—

(1) Meaningfully participate in the development and implementation of their child's IEP;

(2) Participate in data-based decision making related to their child's education; and

(3) Further their child's learning at home.

In their applications, States must describe how their projects will meet these program requirements. In addition to these requirements, to be considered for funding under this priority, applicants must meet the application and administrative requirements under *Common Requirements*.

*Competitive Preference Priorities:* For FY 2025 and any subsequent year in which we make awards from the list of unfunded applications from this competition, these four priorities are competitive preference priorities. Under 34 CFR 75.105(c)(2)(i), we award additional points to an application that meets up to two of these competitive preference priorities. An applicant is not required to address any of the competitive preference priorities. If an applicant addresses the competitive preference priorities, the applicant must indicate which one or two competitive preference priorities they are responding to in the application. We award up to an additional 5 points to an application, depending on how well the application meets Competitive Preference Priority 1. For Competitive Preference Priorities 2, 3, and 4, we award up to an additional 2 points to an application, depending on how well the application meets the competitive preference priority.

*Competitive Preference Priority 1: Providing Career Pathways for Those Interested in Becoming Fully Certified Special Education Teachers, Including Paraprofessionals, Through Residency, Grow Your Own (GYO), and Registered Apprenticeships Programs* (up to 5 points).

Projects designed to increase the number of fully certified special education teachers by establishing a new, or enhancing an existing, teacher residency, GYO, or registered teacher apprenticeship program that minimizes or eliminates the cost of certification for special education teacher candidates and provides opportunities for candidates to be paid, including being provided with a stipend (which, for

programs that include paid experience for the duration of the certification program, can be met through paragraph (i), below), to cover the time spent gaining classroom experience during their certification program.

A project implementing a new or enhanced teacher residency, GYO, or registered teacher apprenticeship program must—

(a) Use data-driven strategies and evidence-based approaches to increase recruitment, successful completion, and retention of the special education teachers supported by the project;

(b) Provide standards for participants to enter into and complete the program;

(c) Be aligned to evidence-based practices for effective educator preparation;

(d) Have little to no financial burden for program participants, or provide for loan forgiveness, grants, or scholarship programs;

(e) Provide opportunities for candidates to be paid, including being provided with a stipend, to cover time spent in clinical experience during their certification program;

(f) Develop a plan to monitor program quality;

(g) Require completion of a bachelor's degree either before entering or as a result of the teacher residency, GYO, or teacher apprenticeship program;

(h) Result in the satisfaction of all requirements for full State teacher licensure or certification, excluding emergency, temporary, provisional, or other sub-standard licensure or certification;

(i) Provide increasing levels of responsibility for the resident/GYO participant/apprentice during at least one year of paid on-the-job learning/clinical experience, during which a mentor teacher is the teacher of record; and

(j) Develop a plan to ensure the program has funding after the end of the project period.

In their applications, States must describe how their projects will meet these program requirements. In addition to these requirements, to be considered for funding under this priority, applicants must address the application and administrative requirements under *Common Requirements*.

*Competitive Preference Priority 2: Supporting Emergency Certified Special Education Teachers to Become Fully Certified* (up to 2 points).

Projects designed to increase the number of fully certified special education teachers by implementing plans that address the emergency certification needs of personnel who

work with children with disabilities.

The plans must—

(a) Identify the barriers and challenges to full certification that are experienced by special education personnel on emergency certifications;

(b) Include evidence-based strategies to address those barriers and challenges and assist special education personnel on emergency certifications to obtain full certification, consistent with State-approved or State-recognized requirements, within three years;

(c) Include training and coaching on, at a minimum—

(1) The skills needed to collaboratively develop, implement, and monitor standards-based IEPs;

(2) High-leverage and evidence-based instructional and classroom management practices; and

(3) The provision of wrap-around services (e.g., social, emotional, and mental health supports), special education services, and other supports for children with disabilities; and

(d) Provide participating special education personnel on emergency certifications with opportunities to apply the evidence-based skills and practices described in paragraph (c) in the classroom.

In their applications, States must describe how their projects will meet these program requirements. In addition to these requirements, to be considered for funding under this priority, applicants must meet the application and administrative requirements under *Common Requirements*.

*Competitive Preference Priority 3: Person-Centered IEPs that Support Instructional Progress* (up to 2 points).

Projects designed to provide pre-service and in-service training to school and district personnel, including IEP team members (e.g., special education and general education teachers, related service personnel who work with children with disabilities) and administrators, to improve their skills in developing and implementing person-centered IEPs that support instructional progress and improve functional outcomes<sup>1</sup> for children with disabilities. Projects must—

(a) Provide training and coaching to administrators and IEP team members to increase their ability to develop, implement, and monitor person-centered IEPs that support instructional progress so that they can—

(1) Use appropriate data to determine the child's instructional and functional strengths and needs;

<sup>1</sup> An IEP that supports instructional progress is an IEP that focuses on the academic, vocational, developmental, and social needs of the child and allows the child to benefit from instruction.

(2) Increase the child's learning time and opportunities with general education peers, as appropriate, based on research;

(3) Choose and use evidence-based practices for core instruction; and

(4) Supplement core instruction with special education services.

In their applications, States must describe how their projects will meet these program requirements. In addition to these requirements, to be considered for funding under this priority, applicants must meet the application and administrative requirements under *Common Requirements*.

*Competitive Preference Priority 4: Principals as Instructional Leaders Who Support Collaborative Service Provision* (up to 2 points).

Projects designed to provide professional development to improve the instructional leadership provided by principals and other school leaders, district leaders, and teacher leaders to promote educational equity for children with disabilities. Projects must provide training and coaching to assist administrators to—

(a) Create and support equitable school schedules and other operations that enable collaborative services from general and special education staff;

(b) Support schoolwide inclusionary practices within a multi-tiered systems of support (MTSS) framework;

(c) Support evidence-based professional development for their staff related to—

(1) Effective content instruction;

(2) Data for decision-making and continuous progress monitoring;

(3) IEP development and implementation; and

(4) Wrap-around services;

(d) Actively engage families and school communities to identify and address concerns regarding, and barriers to, accessibility, equity, and inclusiveness, using frameworks such as universal design; and

(e) Provide administrators structured learning opportunities, such as through a cohort model, mentoring, one-on-one coaching, networking to build a professional community, and applied learning opportunities, such as problem-solving related to the needs of individual children.

In their applications, States must describe how their projects will meet these program requirements. In addition to these requirements, to be considered for funding under this priority, applicants must meet the application and administrative requirements under *Common Requirements*.

*Common Requirements:*

In addition to the requirements contained in these priorities, to be

considered for funding, applicants must meet the following application and administrative requirements:

(a) Demonstrate, in the narrative section of the application under "Significance," how the proposed project will—

(1) Align with and integrate other State initiatives and programs, as well as district and local improvement plans, to leverage existing professional development and data systems;

(2) Develop and implement plans to sustain the grant program after the grant funding has ended; and

(3) Integrate family engagement into all project efforts by supporting capacity building for personnel and families.

(b) Demonstrate, in the narrative section of the application under "Quality of Project Services," how the proposed project will—

(1) Ensure equal access and treatment for members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability. To meet this requirement, the applicant must describe how it will—

(i) Develop the knowledge and ability of personnel to be culturally responsive and engage children and families with a strengths-based approach;

(ii) Engage students, families, and community members to assess the appropriateness and impact of the intervention, program, or strategies; and

(iii) Review program procedures and resources to ensure a diversity of perspectives are brought into the project; and

(2) Achieve the project's goals and objectives. To meet this requirement, the applicant must provide—

(i) Either a logic model or theory of action (to be provided in appendix A), which demonstrates how the proposed project will achieve intended measurable outcomes;

(ii) A description of proposed in-State and national partners that the project will work with to achieve the goals and objectives of the grant and how the impact of these partnerships will be measured; and

(iii) A description of how the project will be based on current research and make use of evidence-based practices. To meet this requirement, the applicant must describe—

(A) The current research base for the chosen interventions;

(B) The evidence-based model or practices to be used in the project's professional development activities; and

(C) How implementation science will be used to support full and sustained use of evidence-based practices and result in sustained systems of implementation support.

(c) In the narrative section of the application under "Quality of the project evaluation or other evidence-building," include an evaluation plan for the project developed in consultation with and implemented by a third-party<sup>2</sup> evaluator. The evaluation plan must—

(1) Articulate formative and summative evaluation questions, including important process and outcome evaluation questions. These questions should be related to the project's proposed logic model or theory of action required under paragraph (b)(2)(i) of these requirements;

(2) Describe how progress in and fidelity of implementation, as well as project outcomes, will be measured to answer the evaluation questions. Specify the measures and associated instruments or sources for data appropriate to the evaluation questions. Include information regarding reliability and validity of measures where appropriate;

(3) Describe strategies for analyzing data and how data collected as part of this plan will be used to inform and improve service delivery over the course of the project and to refine the proposed logic model or theory of action and evaluation plan, including subsequent data collection;

(4) Provide a timeline for conducting the evaluation and include staff assignments for completing the plan. The timeline must indicate that the data will be available annually for the annual performance report to the Department; and

(5) Dedicate sufficient funds in each budget year to cover the costs of developing or refining the evaluation plan in consultation with a third-party evaluator, as well as the costs associated with the implementation of the evaluation plan by the third-party evaluator.

(d) Demonstrate, in the narrative section of the application under "Adequacy of resources," how—

(1) The proposed project will encourage applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability, as appropriate;

(2) The proposed key project personnel, consultants, and

subcontractors have the qualifications and experience to carry out the proposed activities and achieve the project's intended outcomes;

(3) The applicant and any key partners have adequate resources to carry out the proposed activities; and

(4) The proposed costs are reasonable in relation to the anticipated results and benefits and funds will be spent in a way that increases their efficiency and cost-effectiveness, including by reducing waste or achieving better outcomes.

(e) Demonstrate, in the narrative section of the application under "Quality of the management plan," how the proposed management plan will ensure that the project's intended outcomes will be achieved on time and within budget. To address this requirement, the applicant must describe—

(1) Clearly defined responsibilities for key project personnel, consultants, and subcontractors, as applicable;

(2) Timelines and milestones for accomplishing the project tasks;

(3) How key project personnel and any consultants and subcontractors will be allocated to the project and how these allocations are appropriate and adequate to achieve the project's intended outcomes; and

(4) How the proposed project will benefit from a diversity of perspectives, including those of families, educators, TA providers, researchers, and policy makers, among others, in its development and operation.

(f) Address the following application requirements. The applicant must—

(1) Include, in appendix A, personnel-loading charts and timelines, as applicable, to illustrate the management plan described in the narrative;

(2) Provide an assurance that any project website will include relevant information and documents in a form that meets a government or industry-recognized standard for accessibility;

(3) Include, in the budget, attendance at the following:

(i) An annual one and one-half day SPDG National Meeting in the Washington, DC area during each year of the project period; and

(ii) A three-day project directors' conference in Washington, DC, during each year of the project period, provided that, if the conference is conducted virtually, the project must reallocate unused travel funds no later than the end of the third quarter of each budget period; and

(4) Budget \$6,000 annually for support of the SPDG program network and website currently administered by

<sup>2</sup> A "third-party" evaluator is an independent and impartial program evaluator who is contracted by the grantee to conduct an objective evaluation of the project. This evaluator must not have participated in the development or implementation of any project activities, except for the evaluation activities, nor have any financial interest in the outcome of the evaluation.

the University of Oregon ([www.signetwork.org](http://www.signetwork.org)).

Under 34 CFR 75.253, the Secretary may reduce continuation awards or discontinue awards in any year of the project period for excessive carryover balances, a failure to make substantial progress, or has not maintained financial and administrative management systems that meet requirements in 2 CFR 200.302, Financial management, and 200.303, Internal controls. The Department intends to closely monitor unobligated balances and substantial progress under this program and may reduce or discontinue funding accordingly.

*References:*

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- Professional Educator Standards Board. (2016). *Grow your own teachers report: Enhancing educator pathways to address teacher shortage and increase diversity*. [www.pesb.wa.gov/resources-and-reports/reports/grow-your-own-teachers-report/](http://www.pesb.wa.gov/resources-and-reports/reports/grow-your-own-teachers-report/).
- Silva, T., McKie, A., Knechtel, V., Gleason, P., & Makowsky, L. (2014). *Teaching residency programs: A multisite look at a new model to prepare teachers for high-need schools* (NCEE 2015–4002). National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
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*Definitions:* For FY 2025 and any subsequent year in which we make

awards from the list of unfunded applications from this competition, the following definitions apply to this competition. We provide the source of the definitions in parentheses.

*Demonstrates a rationale* means that there is a key project component included in the project’s logic model that is supported by citations of high-quality research or evaluation findings that suggest that the project component is likely to significantly improve relevant outcomes. (34 CFR 77.1)

*Evidence-based* means, for purposes of Absolute Priority 1, practices for which there is strong evidence or moderate evidence of effectiveness (2012 NFP); and for purposes of the competitive preference priorities, the proposed project component is supported by one or more of strong evidence, moderate evidence, promising evidence, or evidence that demonstrates a rationale (34 CFR 77.1).

*Experimental study* means a study that is designed to compare outcomes between two groups of individuals (such as students) that are otherwise equivalent except for their assignment to either a treatment group receiving a project component or a control group that does not. Randomized controlled trials, regression discontinuity design studies, and single-case design studies are the specific types of experimental studies that, depending on their design and implementation (e.g., sample attrition in randomized controlled trials and regression discontinuity design studies), can meet What Works Clearinghouse (WWC) standards without reservations as described in the WWC Handbooks:

(i) A randomized controlled trial employs random assignment of, for example, students, teachers, classrooms, or schools to receive the project component being evaluated (the treatment group) or not to receive the project component (the control group).

(ii) A regression discontinuity design study assigns the project component being evaluated using a measured variable (e.g., assigning students reading below a cutoff score to tutoring or developmental education classes) and controls for that variable in the analysis of outcomes.

(iii) A single-case design study uses observations of a single case (e.g., a student eligible for a behavioral intervention) over time in the absence and presence of a controlled treatment manipulation to determine whether the outcome is systematically related to the treatment. (34 CFR 77.1)

*Fidelity* means the delivery of instruction in the way in which it was designed to be delivered. (2012 NFP)

*High-need LEA* means, in accordance with section 2102(3) of the ESEA, an LEA—

(a) That serves not fewer than 10,000 children from families with incomes below the poverty line (as that term is defined in section 8101(41) of the ESEA), or for which not less than 20 percent of the children served by the LEA are from families with incomes below the poverty line; and

(b) For which there is (1) a high percentage of teachers not teaching in the academic subjects or grade levels that the teachers were trained to teach, or (2) a high percentage of teachers with emergency, provisional, or temporary certification or licensing. (2012 NFP)

*Lead agency* means the agency designated by the State’s Governor under section 635(a)(10) of IDEA and 34 CFR 303.120 that receives funds under section 643 of IDEA to administer the State’s responsibilities under part C of IDEA. (34 CFR 303.22)

*Local educational agency (LEA)* means a public board of education or other public authority legally constituted within a State for either administrative control or direction of, or to perform a service function for, public elementary schools or secondary schools in a city, county, township, school district, or other political subdivision of a State, or for such combination of school districts or counties as are recognized in a State as an administrative agency for its public elementary schools or secondary schools. (Section 602(19) of IDEA (20 U.S.C. 1401(19)))

*Logic model* (also referred to as a theory of action) means a framework that identifies key project components of the proposed project (i.e., the active “ingredients” that are hypothesized to be critical to achieving the relevant outcomes) and describes the theoretical and operational relationships among the key project components and relevant outcomes. (34 CFR 77.1)

*Moderate evidence* means evidence of effectiveness of a key project component in improving a relevant outcome for a sample that overlaps with the populations or settings proposed to receive that component, based on a relevant finding from one of the following:

(i) A practice guide prepared by the WWC using version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks reporting “strong evidence” or “moderate evidence” for the corresponding practice guide recommendation;

(ii) An intervention report prepared by the WWC using version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks reporting “Tier 1 strong evidence” of

effectiveness or “Tier 2 moderate evidence” of effectiveness or a “positive effect” on a relevant outcome based on a sample including at least 20 students or other individuals from more than one site (such as a State, county, city, local educational agency (LEA), school, or postsecondary campus), or a “potentially positive effect” on a relevant outcome based on a sample including at least 350 students or other individuals from more than one site (such as a State, county, city, LEA, school, or postsecondary campus), with no reporting of a “negative effect” or “potentially negative effect” on a relevant outcome; or

(iii) A single experimental study or quasi-experimental design study reviewed and reported by the WWC most recently using version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks, or otherwise assessed by the Department using version 5.0 of the WWC Handbook, as appropriate, and that—

(A) Meets WWC standards with or without reservations;

(B) Includes at least one statistically significant and positive (*i.e.*, favorable) effect on a relevant outcome;

(C) Includes no overriding statistically significant and negative effects on relevant outcomes reported in the study or in a corresponding WWC intervention report prepared under version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks; and

(D) Is based on a sample from more than one site (such as a State, county, city, LEA, school, or postsecondary campus) and includes at least 350 students or other individuals across sites. Multiple studies of the same project component that each meet requirements in paragraphs (iii)(A) through (C) of this definition may together satisfy the requirement in this paragraph (iii)(D). (34 CFR 77.1)

*Project component* means a strategy, intervention, process, product, practice, or policy included in a project. Evidence may pertain to an individual project component or to a combination of project components (*e.g.*, training teachers on instructional practices for English learners and follow-on coaching for these teachers). (34 CFR 77.1)

*Promising evidence* means evidence of the effectiveness of a key project component in improving a relevant outcome, based on a relevant finding from one of the following:

(i) A practice guide prepared by WWC reporting “strong evidence,” “moderate evidence,” or “promising evidence” for the corresponding practice guide recommendation;

(ii) An intervention report prepared by the WWC reporting “Tier 1 strong

evidence” of effectiveness, or “Tier 2 moderate evidence” of effectiveness, or “Tier 3 promising evidence” of effectiveness, or a “positive effect,” or “potentially positive effect” on a relevant outcome, with no reporting of a “negative effect” or “potentially negative effect” on a relevant outcome; or

(iii) A single study assessed by the Department, as appropriate, that—

(A) Is an experimental study, a quasi-experimental design study, or a well-designed and well-implemented correlational study with statistical controls for selection bias (*e.g.*, a study using regression methods to account for differences between a treatment group and a comparison group);

(B) Includes at least one statistically significant and positive (*i.e.*, favorable) effect on a relevant outcome; and

(C) Includes no overriding statistically significant and negative effects on relevant outcomes reported in the study or in a corresponding WWC intervention report. (34 CFR 77.1)

*Quasi-experimental design study* means a study using a design that attempts to approximate an experimental study by identifying a comparison group that is similar to the treatment group in important respects. This type of study, depending on design and implementation (*e.g.*, establishment of baseline equivalence of the groups being compared), can meet WWC standards with reservations, but cannot meet WWC standards without reservations, as described in the WWC Handbooks. (34 CFR 77.1)

*Relevant outcome* means the student outcome(s) or other outcome(s) the key project component is designed to improve, consistent with the specific goals of the program. (34 CFR 77.1)

*State educational agency* means the State board of education or other agency or officer primarily responsible for the State supervision of public elementary schools and secondary schools, or, if there is no such officer or agency, an officer or agency designated by the Governor or by State law. (Section 602(32) of IDEA (20 U.S.C. 1401(32)))

*Strong evidence* means evidence of the effectiveness of a key project component in improving a relevant outcome for a sample that overlaps with the populations and settings proposed to receive that component, based on a relevant finding from one of the following:

(i) A practice guide prepared by the WWC using version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks reporting “strong evidence” for the corresponding practice guide recommendation;

(ii) An intervention report prepared by the WWC using version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks reporting “Tier 1 strong evidence” of effectiveness or a “positive effect” on a relevant outcome based on a sample including at least 350 students or other individuals across more than one site (such as a State, county, city, local educational agency (LEA), school, or postsecondary campus), with no reporting of a “negative effect” or “potentially negative effect” on a relevant outcome; or

(iii) A single experimental study reviewed and reported by the WWC most recently using version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks, or otherwise assessed by the Department using version 5.0 of the WWC Handbook, as appropriate, and that—

(A) Meets WWC standards without reservations;

(B) Includes at least one statistically significant and positive (*i.e.*, favorable) effect on a relevant outcome;

(C) Includes no overriding statistically significant and negative effects on relevant outcomes reported in the study or in a corresponding WWC intervention report prepared under version 2.1, 3.0, 4.0, 4.1, or 5.0 of the WWC Handbooks; and

(D) Is based on a sample from more than one site (such as a State, county, city, LEA, school, or postsecondary campus) and includes at least 350 students or other individuals across sites. Multiple studies of the same project component that each meet the requirements in paragraphs (iii)(A) through (C) of this definition may together satisfy the requirement in this paragraph (iii)(D). (34 CFR 77.1)

*What Works Clearinghouse (WWC) Handbooks (WWC Handbooks)* means the standards and procedures set forth in the WWC Procedures and Standards Handbook, Version 5.0, or in the WWC Standards Handbook, Version 4.0 or 4.1, or in the WWC Procedures Handbook, Version 4.0 or 4.1, the WWC Procedures and Standards Handbook, Version 3.0 or Version 2.1 (all incorporated by reference; see § 77.2). Study findings eligible for review under WWC standards can meet WWC standards without reservations, meet WWC standards with reservations, or not meet WWC standards. WWC practice guides and intervention reports include findings from systematic reviews of evidence as described in the WWC Handbooks documentation. (34 CFR 77.1)

*Program Authority:* 20 U.S.C. 1451–1455.

*Note:* Projects will be awarded and must be operated in a manner consistent



with the nondiscrimination requirements contained in Federal civil rights laws.

*Applicable Regulations:* (a) The Education Department General Administrative Regulations in 34 CFR parts 75, 77, 79, 81, 82, 84, 86, 97, 98, and 99. (b) The Office of Management and Budget (OMB) Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement) in 2 CFR part 180, as adopted and amended as regulations of the Department in 2 CFR part 3485. (c) The Guidance for Federal Financial Assistance in 2 CFR part 200, as adopted and amended as regulations of the Department in 2 CFR part 3474. (d) The 2012 NFP. (e) The 2024 NFP.

*Note:* As of October 1, 2024, grant applicants must follow the provisions stated in the OMB Guidance for Federal Financial Assistance (89 FR 30046, April 22, 2024) when preparing an application. For more information about these regulations please visit: [www.cfo.gov/resources-coffa/uniform-guidance/](http://www.cfo.gov/resources-coffa/uniform-guidance/).

*Note:* The regulations in 34 CFR part 79 apply to all applicants except federally recognized Indian Tribes.

*Note:* The regulations in 34 CFR part 86 apply to IHEs only.

**II. Award Information**

*Type of Award:* Discretionary grants.

*Estimated Available Funds:* \$3,767,623.

The Administration requested \$38,630,000 for the State Personnel Development Grants program for FY 2025, of which we intend to use an estimated \$3,767,623 for this competition. The actual level of funding, if any, depends on final congressional action. However, we are inviting applications to allow enough time to complete the grant process if Congress appropriates funds for this program.

Contingent upon the availability of funds and the quality of applications, we may make additional awards in FY 2026 from the list of unfunded applications from this competition.

*Estimated Range of Awards:* \$500,000–\$2,100,000 (for the 50 States, the District of Columbia, and the Commonwealth of Puerto Rico). States may not receive less than \$500,000 in each year of the grant and must submit a budget in their application for not less than \$500,000 in each year of the grant. In the case of outlying areas (United States Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands), awards will be not less than \$80,000.

*Note:* We will set the amount of each award after considering—

- (1) The amount of funds available for making the grants;
- (2) The relative population of the State or outlying area;
- (3) The types of activities proposed by the State or outlying area;
- (4) The alignment of proposed activities with section 612(a)(14) of IDEA, as amended by the ESSA;
- (5) The alignment of proposed activities with State plans and applications submitted under sections 1111 and 2101(d), respectively, of the ESEA; and
- (6) The use, as appropriate, of scientifically based research and activities.

Using the same considerations, the Secretary funded these selected applications for FY 2024 at the following levels:

State	FY 2024 funding amount
New Hampshire .....	\$653,710
North Dakota .....	500,000
Wisconsin .....	2,099,998
Wyoming .....	552,043

*Estimated Average Size of Awards:* \$1,000,000 excluding the outlying areas.

*Estimated Number of Awards:* 4.

*Note:* The Department is not bound by any estimates in this notice.

*Project Period:* Not less than one year and not more than five years.

**III. Eligibility Information**

1. *Eligible Applicants:* An SEA of one of the 50 States, the District of Columbia, or the Commonwealth of Puerto Rico or an outlying area (United States Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands).

*Note:* Public Law 95–134, which permits the consolidation of grants to the outlying areas, does not apply to funds received under this competition.

2.a. *Cost Sharing or Matching:* This competition does not require cost sharing or matching.

b. *Indirect Cost Rate Information:* This program uses an unrestricted indirect cost rate. For more information regarding indirect costs, or to obtain a negotiated indirect cost rate, please see <https://www.ed.gov/about/ed-offices/oyo#Indirect-Cost-Division>.

c. *Administrative Cost Limitation:* This program does not include any program-specific limitation on administrative expenses. All administrative expenses must be reasonable and necessary and conform to Cost Principles described in 2 CFR

part 200 subpart E of the Guidance for Federal Financial Assistance.

3. *Subgrantees:* A grantee under this competition must award contracts and subgrants as described in Absolute Priority 2 (paragraph (3)(c) under Statutory Requirements, Use of Funds). See section 654(c) of IDEA.

4. *Other General Requirements:* (a) Recipients of funding under this competition must make positive efforts to employ and advance in employment qualified individuals with disabilities (see section 606 of IDEA).

(b) Applicants for, and recipients of, funding must involve individuals with disabilities or parents of individuals with disabilities ages birth through 26, in planning, implementing, and evaluating the project (see section 682(a)(1)(A) of IDEA).

**IV. Application and Submission Information**

1. *Application Submission*

*Instructions:* Applicants are required to follow the Common Instructions for Applicants to Department of Education Discretionary Grant Programs, published in the **Federal Register** on December 7, 2022 (87 FR 75045) and available at [www.federalregister.gov/documents/2022/12/07/2022-26554/common-instructions-for-applicants-to-department-of-education-discretionary-grant-programs](http://www.federalregister.gov/documents/2022/12/07/2022-26554/common-instructions-for-applicants-to-department-of-education-discretionary-grant-programs), which contain requirements and information on how to submit an application.

2. *Intergovernmental Review:* This competition is subject to Executive Order 12372 and the regulations in 34 CFR part 79. Information about Intergovernmental Review of Federal Programs under Executive Order 12372 is in the application package for this competition.

3. *Funding Restrictions:* We reference regulations outlining funding restrictions in the *Applicable Regulations* section of this notice.

4. *Recommended Page Limit:* The application narrative is where you, the applicant, address the selection criteria that reviewers use to evaluate your application. We recommend that you (1) limit the application narrative to no more than 70 pages and (2) use the following standards:

- A “page” is 8.5” x 11”, on one side only, with 1” margins at the top, bottom, and both sides.
- Double-space (no more than three lines per vertical inch) all text in the application narrative, including titles, headings, footnotes, quotations, reference citations, and captions, as well as all text in charts, tables, figures, graphs, and screen shots.
- Use a font that is 12 point or larger.



- Use one of the following fonts: Times New Roman, Courier, Courier New, or Arial.

The recommended page limit does not apply to the cover sheet; the budget section, including the narrative budget justification; the assurances and certifications; or the abstract (follow the guidance provided in the application package for completing the abstract), the table of contents, the list of priority requirements, the resumes, the reference list, the letters of support, or the appendices. However, the recommended page limit does apply to all of the application narrative, including all text in charts, tables, figures, graphs, and screen shots.

## V. Application Review Information

1. *Selection Criteria:* The selection criteria for this competition are from 34 CFR 75.210 and are listed below:

(a) *Significance (20 points).*

(1) The Secretary considers the significance of the proposed project.

(2) In determining the significance of the proposed project, the Secretary considers the following factors:

(i) The extent to which the specific nature and magnitude of gaps or challenges are identified and the extent to which these gaps or challenges will be addressed by the services, supports, infrastructure, or opportunities described in the proposed project.

(ii) The extent to which the training or professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to build recipient and project capacity in ways that lead to improvements in practice among the recipients of those services.

(iii) The likelihood that the proposed project will result in systemic change that supports continuous, sustainable, and measurable improvement.

(b) *Quality of the project design (25 points).*

(1) The Secretary considers the quality of the design of the proposed project.

(2) In determining the quality of the design of the proposed project, the Secretary considers the following factors:

(i) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified, measurable, and ambitious yet achievable within the project period, and aligned with the purposes of the grant program.

(ii) The extent to which the design of the proposed project demonstrates meaningful community engagement and input to ensure that the project is appropriate to successfully address the

needs of the target population or other identified needs and will be used to inform continuous improvement strategies.

(iii) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners, including those from underserved populations, to maximize the effectiveness of project services.

(iv) The extent to which the design of the proposed project reflects the most recent and relevant knowledge and practices from research and effective practice.

(v) The extent to which the proposed project will include coordination with other Federal investments, as well as appropriate agencies and organizations providing similar services to the target population.

(c) *Quality of the project personnel (10 points).*

(1) The Secretary considers the quality of the personnel who will carry out the proposed project.

(2) In determining the quality of project personnel, the Secretary considers the extent to which the applicant demonstrates that it has project personnel or a plan for hiring of personnel who are members of groups that have historically encountered barriers, or who have professional or personal experiences with barriers, based on one or more of the following: economic disadvantage; gender; race; ethnicity; color; national origin; disability; age; language; migration; living in a rural location; experiencing homelessness or housing insecurity; involvement with the justice system; pregnancy, parenting, or caregiver status; and sexual orientation.

(3) In addition, the Secretary considers the extent to which the key personnel in the project, when hired, have the qualifications required for the proposed project, including formal training or work experience in fields related to the objectives of the project, and represent or have lived experiences of the target population.

(d) *Adequacy of resources and management plan (20 points).*

(1) The Secretary considers the adequacy of resources and management plan for the proposed project.

(2) In determining the adequacy of resources for the proposed project, the Secretary considers the following factors:

(i) The relevance and demonstrated commitment of each partner in the proposed project to the implementation and success of the project.

(ii) The extent to which the budget is adequate to support the proposed project and the costs are reasonable in

relation to the objectives, design, and potential significance of the proposed project.

(iii) The feasibility of the management plan to achieve project objectives and goals on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

(iv) How the applicant will ensure that a diversity of perspectives, including those from underserved populations, are brought to bear in the design, implementation, operation, evaluation, and improvement of the proposed project, including those of parents, educators, community-based organizations, civil rights organizations, the business community, a variety of disciplinary and professional fields, recipients or beneficiaries of services, or others, as appropriate.

(v) The level of initial matching funds or other commitment from partners, indicating the likelihood for potential continued support of the project after Federal funding ends.

(e) *Quality of the project evaluation or other evidence-building (25 points).*

(1) The Secretary considers the quality of the evaluation or other evidence-building of the proposed project.

(2) In determining the quality of the evaluation or other evidence-building, the Secretary considers the extent to which the methods of evaluation or other evidence-building are thorough, feasible, relevant, and appropriate to the goals, objectives, and outcomes of the proposed project.

2. *Review and Selection Process:* We remind potential applicants that in reviewing applications in any discretionary grant competition, the Secretary may consider, under 34 CFR 75.217(d)(3), the past performance of the applicant in carrying out a previous award, such as the applicant's use of funds, achievement of project objectives, and compliance with grant conditions. The Secretary may also consider whether the applicant failed to submit a timely performance report or submitted a report of unacceptable quality.

In addition, in making a competitive grant award, the Secretary requires various assurances, including those applicable to Federal civil rights laws that prohibit discrimination in programs or activities receiving Federal financial assistance from the Department (34 CFR 100.4, 104.5, 106.4, 108.8, and 110.23).

In the event there are two or more applications with the same final score, and there are insufficient funds to fully support each of these applications, the

scores under selection criterion (b) Quality of the project design will be used as a tiebreaker. If the scores remain tied, then the scores under selection criterion (d) Adequacy of resources and management plan will be used to break the tie.

3. *Additional Review and Selection Process Factors:* In the past, the Department has had difficulty finding peer reviewers for certain competitions because so many individuals who are eligible to serve as peer reviewers have conflicts of interest. The standing panel requirements under section 682(b) of IDEA also have placed additional constraints on the availability of reviewers. Therefore, the Department has determined that for some discretionary grant competitions, applications may be separated into two or more groups and ranked and selected for funding within specific groups. This procedure will make it easier for the Department to find peer reviewers by ensuring that greater numbers of individuals who are eligible to serve as reviewers for any particular group of applicants will not have conflicts of interest. It also will increase the quality, independence, and fairness of the review process, while permitting panel members to review applications under discretionary grant competitions for which they also have submitted applications.

4. *Risk Assessment and Specific Conditions:* Consistent with 2 CFR 200.206, before awarding grants under this competition the Department conducts a review of the risks posed by applicants. Under 2 CFR 200.208, the Secretary may impose specific conditions, and under 2 CFR 3474.10, in appropriate circumstances, high-risk conditions on a grant if the applicant or grantee is not financially stable; has a history of unsatisfactory performance; has a financial or other management system that does not meet the standards in 2 CFR part 200, subpart D; has not fulfilled the conditions of a prior grant; or is otherwise not responsible.

5. *Integrity and Performance System:* If you are selected under this competition to receive an award that over the course of the project period may exceed the simplified acquisition threshold (currently \$250,000), under 2 CFR 200.206(a)(2) we must make a judgment about your integrity, business ethics, and record of performance under Federal awards—that is, the risk posed by you as an applicant—before we make an award. In doing so, we must consider any information about you that is in the integrity and performance system (currently referred to as the Federal Awardee Performance and Integrity

Information System (FAPIIS)), accessible through the System for Award Management. You may review and comment on any information about yourself that a Federal agency previously entered and that is currently in FAPIIS.

Please note that, if the total value of your currently active grants, cooperative agreements, and procurement contracts from the Federal Government exceeds \$10,000,000, the reporting requirements in 2 CFR part 200, appendix XII, require you to report certain integrity information to FAPIIS semiannually. Please review the requirements in 2 CFR part 200, appendix XII, if this grant plus all the other Federal funds you receive exceed \$10,000,000.

## VI. Award Administration Information

1. *Award Notices:* If your application is successful, we notify your U.S. Representative and U.S. Senators and send you a Grant Award Notification (GAN); or we may send you an email containing a link to access an electronic version of your GAN. We also may notify you informally.

If your application is not evaluated or not selected for funding, we notify you.

2. *Administrative and National Policy Requirements:* We identify administrative and national policy requirements in the application package and reference these and other requirements in the *Applicable Regulations* section of this notice.

We reference the regulations outlining the terms and conditions of an award in the *Applicable Regulations* section of this notice and include these and other specific conditions in the GAN. The GAN also incorporates your approved application as part of your binding commitments under the grant.

3. *Open Licensing Requirements:* Unless an exception applies, if you are awarded a grant under this competition, you will be required to openly license to the public grant deliverables created in whole, or in part, with Department grant funds. When the deliverable consists of modifications to pre-existing works, the license extends only to those modifications that can be separately identified and only to the extent that open licensing is permitted under the terms of any licenses or other legal restrictions on the use of pre-existing works. Additionally, a grantee that is awarded competitive grant funds must have a plan to disseminate these public grant deliverables. This dissemination plan can be developed and submitted after your application has been reviewed and selected for funding. For additional information on the open

licensing requirements please refer to 2 CFR 3474.20.

4. *Reporting:* (a) If you apply for a grant under this competition, you must ensure that you have in place the necessary processes and systems to comply with the reporting requirements in 2 CFR part 170 should you receive funding under the competition. See the standards in 2 CFR 170.105 to determine whether you are covered by 2 CFR part 170.

(b) At the end of your project period, you must submit a final performance report, including financial information, as directed by the Secretary. If you receive a multiyear award, you must submit an annual performance report that provides the most current performance and financial expenditure information as directed by the Secretary under 34 CFR 75.118. The Secretary may also require more frequent performance reports under 34 CFR 75.720(c). For specific requirements on reporting, please go to [www.ed.gov/fund/grant/apply/appforms/appforms.html](http://www.ed.gov/fund/grant/apply/appforms/appforms.html).

5. *Performance Measures:* For the purposes of Department reporting under 34 CFR 75.110, we have established a set of performance measures, including long-term measures, that are designed to yield information on various aspects of the effectiveness and quality of the SPDG program. These measures assess the extent to which—

- Projects use professional development practices supported by evidence to support the attainment of identified competencies;
- Participants in SPDG professional development demonstrate improvement in implementation of SPDG-supported practices over time;
- Projects use SPDG professional development funds to provide activities designed to sustain the use of SPDG-supported practices; and
- Projects improve outcomes for children with disabilities.

Each grantee funded under this competition must collect and annually report data related to its performance on these measures in the project's annual and final performance report to the Department in accordance with section 653(d) of IDEA and 34 CFR 75.590. Applicants should discuss in the application narrative how they propose to collect performance data for these measures.

6. *Continuation Awards:* In making a continuation award under 34 CFR 75.253, the Secretary considers, among other things, whether a grantee has made substantial progress in achieving the goals and objectives of the project; whether the grantee has expended funds

in a manner that is consistent with its approved application and budget; and, if the Secretary has established performance measurement requirements, whether the grantee has made substantial progress in achieving the performance targets in the grantee's approved application.

In making a continuation award, the Secretary also considers whether the grantee is operating in compliance with the assurances in its approved application, including those applicable to Federal civil rights laws that prohibit discrimination in programs or activities receiving Federal financial assistance from the Department (34 CFR 100.4, 104.5, 106.4, 108.8, and 110.23).

#### VII. Other Information

**Accessible Format:** On request to the program contact person listed under **FOR FURTHER INFORMATION CONTACT**, individuals with disabilities can obtain this document and a copy of the application package in an accessible format. The Department will provide the requestor with an accessible format that may include Rich Text Format (RTF) or text format (txt), a thumb drive, an MP3 file, braille, large print, audiotape, compact disc, or other accessible format.

**Electronic Access to This Document:** The official version of this document is the document published in the **Federal Register**. You may access the official edition of the **Federal Register** and the Code of Federal Regulations at [www.govinfo.gov](http://www.govinfo.gov). At this site you can view this document, as well as all other Department documents published in the **Federal Register**, in text or Portable Document Format (PDF). To use PDF you must have Adobe Acrobat Reader, which is available free at the site.

You may also access Department documents published in the **Federal Register** by using the article search feature at [www.federalregister.gov](http://www.federalregister.gov). Specifically, through the advanced search feature at this site, you can limit your search to documents published by the Department.

**Glenna Wright-Gallo,**

*Assistant Secretary for Special Education and Rehabilitative Services.*

[FR Doc. 2024-28237 Filed 12-2-24; 8:45 am]

BILLING CODE 4000-01-P

#### DEPARTMENT OF EDUCATION

##### **Extension of the Application Deadline Date; Applications for New Awards; Fulbright-Hays Doctoral Dissertation Research Abroad Fellowship Program**

**AGENCY:** Office of Postsecondary Education, Department of Education.

**ACTION:** Notice.

**SUMMARY:** On October 30, 2024, the Department of Education issued a notice inviting applications (NIA) for fiscal year (FY) 2025 for the Fulbright-Hays Doctoral Dissertation Research Abroad (DDRA) Fellowship Program. The NIA established a deadline date of January 15, 2025, for the transmittal of applications. This extension notice extends the deadline for the transmittal of applications to January 29, 2025.

**DATES:** Deadline for Transmittal of Applications: January 29, 2025.

**FOR FURTHER INFORMATION CONTACT:** Pamela J. Maimer, Telephone: (202) 453-6891. Email: [DDRA@ed.gov](mailto:DDRA@ed.gov).

If you are deaf, hard of hearing, or have a speech disability and wish to access telecommunications relay services, please dial 7-1-1.

**SUPPLEMENTARY INFORMATION:** On October 30, 2024, the Department of Education published in the **Federal Register** an NIA for fiscal year (FY) 2025 for the DDRA Fellowship Program. 89 FR 86323. The NIA established a deadline date of January 15, 2025, for the transmittal of applications.

In consideration of upcoming holiday observances and academic year winter breaks at eligible institutions, we are extending the deadline for the transmittal of applications to give eligible institutional and individual applicants more time—until January 29, 2025—to prepare and submit their applications.

Applicants that have already timely submitted applications under the FY 2025 DDRA competition may resubmit applications on or before the extended application deadline of January 29, 2025, but are not required to do so. If a new application is not submitted, the Department will use the application that was submitted by the original deadline. If a new application is submitted, the Department will consider the application that is last submitted and timely received by 11:59:59 p.m., eastern time, on January 29, 2025.

*Note:* This extension notice only revises the application transmittal date. All applications must comply with the program requirements and the application standards published in the October 30, 2024 notice.

*Assistance Listing Number:* 84.022A.  
*Program Authority:* 22 U.S.C. 2452(b)(6).

**Accessible Format:** On request to the program contact person listed under **FOR FURTHER INFORMATION CONTACT**, individuals with disabilities can obtain this notice, the NIA, and a copy of the application package in an accessible

format. The Department will provide the requestor with an accessible format that may include Rich Text Format (RTF) or text format (txt), a thumb drive, an MP3 file, braille, large print, audiotape, compact disc, or other accessible format.

**Electronic Access to This Document:** The official version of this document is the document published in the **Federal Register**. You may access the official edition of the **Federal Register** and the Code of Federal Regulations at [www.govinfo.gov](http://www.govinfo.gov). At this site you can view this document, as well as all other Department documents published in the **Federal Register**, in text or Portable Document Format (PDF). To use PDF you must have Adobe Acrobat Reader, which is available free at the site.

You may also access Department documents published in the **Federal Register** by using the article search feature at [www.federalregister.gov](http://www.federalregister.gov). Specifically, through the advanced search feature at this site, you can limit your search to documents published by the Department.

**Nasser H. Paydar,**

*Assistant Secretary for Postsecondary Education.*

[FR Doc. 2024-28290 Filed 12-2-24; 8:45 am]

BILLING CODE 4000-01-P

#### DEPARTMENT OF EDUCATION

[Docket No.: ED-2024-SCC-0112]

##### **Agency Information Collection Activities; Submission to the Office of Management and Budget for Review and Approval; Comment Request; Consolidated Annual Report (CAR) for the Carl D. Perkins Career and Technical Education Act of 2006**

**AGENCY:** Office of Career, Technical, and Adult Education (OCTAE), Department of Education (ED).

**ACTION:** Notice.

**SUMMARY:** In accordance with the Paperwork Reduction Act (PRA) of 1995, the Department is proposing a revision of a currently approved information collection request (ICR).

**DATES:** Interested persons are invited to submit comments on or before January 2, 2025.

**ADDRESSES:** Written comments and recommendations for proposed information collection requests should be submitted within 30 days of publication of this notice. Click on this link [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain) to access the site. Find this information collection request (ICR) by selecting "Department of Education" under "Currently Under Review," then

check the “Only Show ICR for Public Comment” checkbox. *Reginfo.gov* provides two links to view documents related to this information collection request. Information collection forms and instructions may be found by clicking on the “View Information Collection (IC) List” link. Supporting statements and other supporting documentation may be found by clicking on the “View Supporting Statement and Other Documents” link.

**FOR FURTHER INFORMATION CONTACT:** For specific questions related to collection activities, please contact Braden Goetz, (202) 245–7405.

**SUPPLEMENTARY INFORMATION:** The Department is especially interested in public comment addressing the following issues: (1) is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

*Title of Collection:* Consolidated Annual Report (CAR) for the Carl D. Perkins Career and Technical Education Act of 2006

*OMB Control Number:* 1830–0569.

*Type of Review:* Revision of a currently approved ICR.

*Respondents/Affected Public:* State, Local, and Tribal Governments.

*Total Estimated Number of Annual Responses:* 54.

*Total Estimated Number of Annual Burden Hours:* 13,122.

*Abstract:* This information collection is used by the U.S. Department of Education (Department) to gather annual performance and financial data from eligible agencies under the Carl D. Perkins Career and Technical Education Act of 2006. On August 30, 2024, the Department published for public comment, for a period of 60 days, a proposed request to extend this ICR for nine months to enable eligible agencies to meet their annual reporting requirements for Fiscal Year (FY) 2023. On September 11, 2024, the Department published for public comment, for a period of 60 days, a proposed revision of this ICR for which three-year approval was requested so that eligible agencies could meet their reporting requirements for FYs 2024 through 2026. On September 23, 2024, ED

corrected an error in the publication of the proposed revised instrument for the CAR and posted the correct version. Due to this error, on October 15, 2024, ED extended the public comment period on the CAR for two weeks, to November 26, 2024. The Department is now proposing a consolidated information collection request that incorporates the extension for FY 2023 reporting that was published on August 30, 2024, and the proposed revision for FYs 2024 through 2026 reporting that was published on September 11, 2024.

This information collection would extend current reporting requirements through FY 2025 and make revisions to these requirements for FY 2026. The proposed revisions would provide data specifications for the numerators and denominators used to calculate the performance indicators so that they are measured in a manner that is consistent with the law, collect data on participants in the middle grades to the extent such data are available, and collect data on the education and employment outcomes of CTE concentrators who have exited secondary education or who have completed a postsecondary program that is disaggregated by placement type, to the extent these data are available. The proposed ICR also includes narrative questions about different aspects of an eligible agency’s implementation of the law.

Dated: November 27, 2024.

**Juliana Pearson,**

*PRA Coordinator, Strategic Collections and Clearance, Governance and Strategy Division, Office of Chief Data Officer, Office of Planning, Evaluation and Policy Development.*

[FR Doc. 2024–28326 Filed 12–2–24; 8:45 am]

**BILLING CODE 4000–01–P**

## DEPARTMENT OF ENERGY

### Notice of 229 Boundary Revision for the Thomas Jefferson National Accelerator Facility (Also Known as Jefferson Lab)

**AGENCY:** Office of Science, Department of Energy (DOE).

**ACTION:** Notice of 229 Boundary Revision for the Thomas Jefferson National Accelerator Facility (also known as Jefferson Lab).

**SUMMARY:** Notice is hereby given that the U.S. Department of Energy, pursuant to the Atomic Energy Act of 1954, prohibits the unauthorized entry and the unauthorized introduction of weapons or dangerous materials, as provided in, into or upon the following

described facilities and property of the Thomas Jefferson National Accelerator Facility (TJNAF) of the United States Department of Energy.

**DATES:** This action is effective on December 3, 2024.

**FOR FURTHER INFORMATION CONTACT:** Ms. Marla J. Larsen-Williams, Real Estate Contracting Officer, 9800 S Cass Avenue, Building 201, Lemont, IL 60439, Email: *marla.larsen-williams@science.doe.gov*; Telephone: (865) 227–3332.

**SUPPLEMENTARY INFORMATION:** This security boundary is designated pursuant to section 229 of the Atomic Energy Act of 1954 as amended, and as implemented by DOE’s regulations regarding Trespassing on Department of Energy Property which was published in the **Federal Register** on August 26, 1963 (28 FR 8400). This revised boundary supplements the entry previously contained in the **Federal Register** notice published on March 1, 2016, at 81 FR 10610 for the Thomas Jefferson National Accelerator Facility (TJNAF) of the United States Department of Energy.

The following supplement is made:

The U.S. Department of Energy installation known as the Thomas Jefferson National Accelerator Facility is located in the Second Civil District of Newport News, Virginia, within the corporate limits of the City of Newport News. The U.S. Department of Energy acquired the property known as the Applied Research Center (ARC), property and associated facilities, located in the Second Civil District of Newport News, Virginia, within the corporate limits of the City of Newport News. The ARC property consists of 9.298 acres located at 12050 Jefferson Avenue, bounded by the west by Jefferson Avenue, by the south approximately 350 feet south of Hofstadter Road, by the north by Tech Center Parkway, by the east by Rutherford Road (as extended northerly).

The entire Thomas Jefferson National Accelerator Facility 229 Boundary, consisting of approximately 179 acres, is indicated by a combination of signage at entrances and along the perimeter, and chain link fencing, and other physical features which surround the facility.

*Signing Authority:* This document of the Department of Energy was signed on November 20, 2024, by Marla J. Larsen-Williams, Real Estate Contracting Officer, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in

compliance with requirements of the Office of the Federal Register, the undersigned DOE **Federal Register Liaison Officer** has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on November 27, 2024.

**Treena V. Garrett,**

*Federal Register Liaison Officer, U.S. Department of Energy.*

[FR Doc. 2024-28309 Filed 12-2-24; 8:45 am]

**BILLING CODE 6450-01-P**

## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

#### Combined Notice of Filings #1

Take notice that the Commission received the following Complaints and Compliance filings in EL Dockets:

*Docket Numbers:* EL25-21-000.

*Applicants:* BP Energy Retail Company California LLC v. California Independent System Operator Corporation.

*Description:* Complaint of BP Energy Retail Company California LLC v. California Independent System Operator Corporation.

*Filed Date:* 11/25/24.

*Accession Number:* 20241125-5163.

*Comment Date:* 5 p.m. ET 12/16/24.

Take notice that the Commission received the following electric rate filings:

*Docket Numbers:* ER24-2394-001.

*Applicants:* Cataract Coast, LLC, Aurora Trading Company, LLC, Venturi Asset Management, LLC.

*Description:* Tariff Amendment: Cataract Coast, LLC submits tariff filing per 35.17(b): Cataract Coast Deficiency Filing to be effective 6/28/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5003.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER24-2394-002.

*Applicants:* Cataract Coast, LLC, Aurora Trading Company, LLC, Venturi Asset Management, LLC.

*Description:* Tariff Amendment: Cataract Coast, LLC submits tariff filing per 35.17(b): Cataract Coast Deficiency Filing to be effective 6/28/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5260.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER24-2396-001.

*Applicants:* Venturi Asset Management, LLC.

*Description:* Tariff Amendment: Venturi Asset Management Deficiency Filing to be effective 6/28/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5005.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER24-2396-002.

*Applicants:* Venturi Asset Management, LLC.

*Description:* Tariff Amendment: Venturi Asset Management Deficiency Filing to be effective 6/28/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5265.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER24-2399-001.

*Applicants:* Aurora Trading Company, LLC.

*Description:* Tariff Amendment: Aurora Deficiency Filing to be effective 6/28/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5001.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER24-2399-002.

*Applicants:* Aurora Trading Company, LLC.

*Description:* Tariff Amendment: Aurora Deficiency Filing to be effective 6/28/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5263.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER24-3162-000.

*Applicants:* Wilderness Line Holdings, LLC.

*Description:* Petition for Limited Waiver of Wilderness Line Holdings, LLC.

*Filed Date:* 9/26/24.

*Accession Number:* 20240926-5198.

*Comment Date:* 5 p.m. ET 12/10/24.

*Docket Numbers:* ER25-36-000.

*Applicants:* BCE Seal Beach, LLC.

*Description:* Supplement to October 4, 2024, BCE Seal Beach, LLC tariff filing.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5162.

*Comment Date:* 5 p.m. ET 12/6/24.

*Docket Numbers:* ER25-560-000.

*Applicants:* AEP Oklahoma Transmission Company, Inc.

*Description:* § 205(d) Rate Filing: AEPOTC-Kiowa County Project (Great Plains) Interim Maintenance Agreement to be effective 10/30/2024.

*Filed Date:* 11/25/24.

*Accession Number:* 20241125-5212.

*Comment Date:* 5 p.m. ET 12/16/24.

*Docket Numbers:* ER25-561-000.

*Applicants:* Crossover Wind LLC.

*Description:* Initial Rate Filing: Baseline new to be effective 12/1/2024.

*Filed Date:* 11/25/24.

*Accession Number:* 20241125-5214.

*Comment Date:* 5 p.m. ET 12/16/24.

*Docket Numbers:* ER25-562-000.

*Applicants:* Winfield Solar I, LLC.

*Description:* Initial Rate Filing:

Baseline new to be effective 12/1/2024.

*Filed Date:* 11/25/24.

*Accession Number:* 20241125-5215.

*Comment Date:* 5 p.m. ET 12/16/24.

*Docket Numbers:* ER25-563-000.

*Applicants:* California Grid Holdings LLC.

*Description:* Application for Authorization for Abandoned Plant Incentive Rate Treatment of California Grid Holdings LLC.

*Filed Date:* 11/19/24.

*Accession Number:* 20241119-5213.

*Comment Date:* 5 p.m. ET 12/10/24.

*Docket Numbers:* ER25-564-000.

*Applicants:* Southern California Edison Company.

*Description:* Informational Filing of 2025 Formula Rate Annual Update of Southern California Edison Company.

*Filed Date:* 11/22/24.

*Accession Number:* 20241122-5291.

*Comment Date:* 5 p.m. ET 12/13/24.

*Docket Numbers:* ER25-565-000.

*Applicants:* Entergy Arkansas, LLC.

*Description:* § 205(d) Rate Filing: MSS-4R State Tax Rate ADIT to be effective 2/1/2025.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5018.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER25-566-000.

*Applicants:* Cheyenne Light, Fuel and Power Company.

*Description:* § 205(d) Rate Filing: Filing of Standard LGIA with NextEra Energy Resources Interconnection Holdings to be effective 10/29/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5047.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER25-567-000.

*Applicants:* BR Pacific Hydro Power LLC.

*Description:* Initial Rate Filing: Market-Based Rate Application to be effective 1/26/2025.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126-5060.

*Comment Date:* 5 p.m. ET 12/17/24.

*Docket Numbers:* ER25-568-000.

*Applicants:* Matta Grid, LLC.

*Description:* Request for Limited Waiver of Matta Grid, LLC of the PJM Tariff, Part IV, Subpart A, Section 36.2A.4.

*Filed Date:* 11/25/24.

*Accession Number:* 20241125-5249.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* ER25-569-000.

*Applicants:* Southwest Power Pool, Inc.

*Description:* § 205(d) Rate Filing: 1276R35 Evergy Metro NITSA NOA to be effective 12/1/2024.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5132.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–570–000.  
*Applicants:* PJM Interconnection, L.L.C.

*Description:* § 205(d) Rate Filing: Original NSA, Service Agreement No. 7413; AC2–157 to be effective 1/27/2025.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5136.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–571–000.  
*Applicants:* Black Hills Colorado Electric, LLC.

*Description:* § 205(d) Rate Filing: Filing of Second Amended and Restated LGIA with TC Colorado Solar, LLC to be effective 11/5/2024.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5142.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–572–000.  
*Applicants:* PJM Interconnection, L.L.C.

*Description:* § 205(d) Rate Filing: Amendment to WMPA, Service Agreement No. 6868; Queue No. AF2–165 to be effective 1/26/2025.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5158.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–573–000.  
*Applicants:* PacifiCorp.

*Description:* § 205(d) Rate Filing: Filing for Revisions to the OATT to Implement the Extended Day-Ahead Market to be effective 3/31/2025.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5165.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–574–000.  
*Applicants:* Arizona Public Service Company.

*Description:* § 205(d) Rate Filing: Service Agreement No. 405, Amendment No. 2 to be effective 1/26/2025.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5170.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–575–000.  
*Applicants:* PJM Interconnection, L.L.C.

*Description:* § 205(d) Rate Filing: Amendment to ISA SA No. 7042; AE1–245 to be effective 1/26/2025.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5171.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–576–000.  
*Applicants:* California Independent System Operator Corporation.

*Description:* § 205(d) Rate Filing: 2024–11–26 Energy Storage and Bid Cost Recovery Tariff Amendment to be effective 12/1/2024.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5269.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–577–000.  
*Applicants:* Midcontinent Independent System Operator, Inc.  
*Description:* § 205(d) Rate Filing: 2024–11–26 SA 2278 Termination of ITC Midwest–NEMO 1st Rev ITSA (GFA 14) to be effective 1/1/2025.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5274.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–578–000.  
*Applicants:* PJM Interconnection, L.L.C.

*Description:* § 205(d) Rate Filing: Original GIA Service Agreement No. 7417; Project Identifier No. AG1–416 to be effective 10/29/2024.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5284.  
*Comment Date:* 5 p.m. ET 12/17/24.  
*Docket Numbers:* ER25–579–000.  
*Applicants:* Midcontinent Independent System Operator, Inc.

*Description:* § 205(d) Rate Filing: 2024–11–26 Shortage Pricing and Price Formation Reforms for VOLL and ORDC to be effective 9/30/2025.

*Filed Date:* 11/26/24.  
*Accession Number:* 20241126–5289.  
*Comment Date:* 5 p.m. ET 12/17/24.  
 Take notice that the Commission received the following public utility holding company filings:

*Docket Numbers:* PH24–12–000.  
*Applicants:* Unison Energy, LLC, Tiger Infrastructure Partners Fund III AIV U LP.

*Description:* Unison Energy, LLC, et. al. submit response to FERC's 09/06/2024 request for additional information re the 07/12/2024 FERC–65A Exemption Notification Filing.

*Filed Date:* 9/17/24.  
*Accession Number:* 20240917–5061.  
*Comment Date:* 5 p.m. ET 12/17/24.

The filings are accessible in the Commission's eLibrary system (<https://elibrary.ferc.gov/idmws/search/fercgensearch.asp>) by querying the docket number.

Any person desiring to intervene, to protest, or to answer a complaint in any of the above proceedings must file in accordance with Rules 211, 214, or 206 of the Commission's Regulations (18 CFR 385.211, 385.214, or 385.206) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests,

service, and qualifying facilities filings can be found at: <http://www.ferc.gov/docs-filing/efiling/filing-req.pdf>. For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502–6595 or [OPP@ferc.gov](mailto:OPP@ferc.gov).

Dated: November 26, 2024.

**Carlos D. Clay,**

*Acting Deputy Secretary.*

[FR Doc. 2024–28289 Filed 12–2–24; 8:45 am]

**BILLING CODE 6717–01–P**

## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

[Docket No. RM01–5–000]

#### Electronic Tariff Filings; Notice of Revisions to eTariff

Take notice that on November 25, 2024, the Commission deployed version 2.0 of the eTariff program. All eTariff filings must be submitted using the revised version. The revised eTariff schema and associated files are displayed at the same accession number as this Notice.<sup>1</sup>

These revisions enhance the capabilities of the system by enabling filing pipelines and utilities to (1) identify the correct lead applicants for a proceeding; (2) have more flexibility in the programs used to create and file tariffs by filing tariff records in Microsoft Word or Excel format; and (3) differentiate between compliance filings in a current proceeding and compliance filings that establish a new docket. In addition, new codes permit utilities to distinguish baseline line rate change filings from baseline initial rate filings.

As a result of adding the capability to file in Word or Excel, certain changes will be made in the way eTariff is displayed on the eTariff Public Viewer and eLibrary. The tariff files will be converted to .pdf using print-to-pdf for display. The Public Viewer display

<sup>1</sup> These files also will be posted on the Commission's website at <https://www.ferc.gov/ferc-online/etariff>.

should appear as it does today for .pdf filings. The tariff files in eLibrary will display in a FERC Generated PDF document. The metadata for each tariff record will display on one page (rather than at the top of the page) and the tariff text will follow on the next page.

These revisions are described in more detail below:

**I. Lead Applicant Identification**

The eTariff XML schema will add a mandatory lead applicant field. The lead applicant field will determine the lead party making the filing and will be added to the Commission’s service list.

This change will require the filing pipeline or utility to add the Company Identifier (CID) for the lead applicant to the XML schema. Filings without a lead applicant CID will be rejected. Filers also must continue to include the company id field to identify the company whose tariff is being revised. If pipelines and utilities are filing with themselves as the lead applicant, they will include their own CID in both the lead\_applicant\_id field and the company\_id field if they are filing for themselves.

The Commission also will post on the eTariff website, <https://www.ferc.gov/>

[ferc-online/etariff](https://www.ferc.gov/ferc-online/etariff), a CSV file with CID numbers and will endeavor to update that file monthly.

Pipelines and utilities will continue to make the eTariff filings through the eFiling web page at <https://ferconline.ferc.gov/Login.aspx>. The contact information associated with the CID of the lead applicant will be added to the Commission’s service list. Filers need to be aware that although the filing pipeline or utility will be presented with the following screen and will have to enter an email address as signer, the company and email will not be added to the service list.

Filing Party	<input checked="" type="radio"/> eTariff Electric UAT Test Company
Contact Email:	<input type="text"/>
<input type="button" value="Add as Signer"/> <input type="button" value="Add as Other Contact"/>	

If the pipeline or utility submitting the filing wants to be considered a co-applicant, or enter additional email

addresses, they must enter that information as an “Additional Applicant” in the eFiling process along

with information about any other co-applicants.

**Specify Filing Parties**

eTariff Electric UAT Test Company (C011712)	Applicant
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Do you want to add Additional applicants?  Yes

Specify a full or partial company name, click on Search, and select from the list.

Starts with  Contains

<input type="text"/>	<input type="button" value="Search"/>
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**II. Flexibility To Include Microsoft Word and Excel Files as Tariff Records**

Filing pipelines and utilities will be able to include tariff records in Microsoft Word and Excel as well as submitting tariff records as RTF or PDF. The Commission wants to provide as much flexibility in making these filings as possible, particularly in Excel, but to assure that tariff records can be read easily, certain formatting requirements are necessary.

**A. Word Files**

Word files may be in portrait or landscape format with a format no larger than 11”x17” ledger size.

**B. Excel Files**

The following are the formatting requirements for Excel files.

1. Filings may be in portrait or landscape.
2. Page size may be no larger than 11”x17” ledger size.
3. Excel file must properly define the print range, including print titles and print page order, so the document can render properly in PDF. Filers need to be careful to ensure that their print range does not result in generating numerous blank pages.
4. If columns or rows roll over to subsequent pages, columns or row headers need to be repeated so that subsequent pages are easily understood.

5. An accurate marked version of the tariff record still must be filed as an attachment.

**III. Revised Filing Codes**

The revised compliance codes will ensure that parties differentiate between (1) compliance filings in a current proceeding for which the filer has a filing identifier, which are assigned a sub-docket (compliance\_type category), and (2) compliance filings, such as compliance with complaint orders and rulemakings, where the filer has no existing filing identifier and therefore must establish a new docket (compliance\_new category).

Under the eTariff XML schema, filers that are making a filing related to an existing proceeding with a Filing



Identifier must include an Associated Filing Identifier at the Filing level for the filing to receive a sub-docket. In this situation, filers must submit the filing using the `compliance_type` category and must include an associated filing identifier at the Filing level, so they are assigned a sub-docket of the original docket. Failure to include the associated filing identifier will result in a rejection of the filing (Error code 28- An Associated Filing Identifier is required at filing level.). Type of Filing Codes designated under the `compliance_new_type` category apply to filings that will receive a new docket number. If the filing using these codes includes an associated filing identifier at the Filing level, the filing be rejected (Error code 187—This type of filing code establishes a new docket, so the associated filing identifier is not needed).

New codes also have been added to permit utilities establishing new Tariff baselines to distinguish between rate change filings (code 390) and initial rate filings under section 35.12 of the Commission's regulations (code 395).<sup>2</sup>

Questions on eTariff should be directed to: [etariffresponse@ferc.gov](mailto:etariffresponse@ferc.gov).

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**  
Secretary.

[FR Doc. 2024-28244 Filed 12-2-24; 8:45 am]

BILLING CODE 6717-01-P

## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

[Docket No. IC25-1-000]

#### Commission Information Collection Activities (FERC-519, FERC-520, FERC-546, and FERC-580) Comment Request; Extension

**AGENCY:** Federal Energy Regulatory Commission.

**ACTION:** Notice of information collection and request for comments.

**SUMMARY:** In compliance with the requirements of the Paperwork Reduction Act of 1995, the Federal Energy Regulatory Commission (Commission or FERC) is soliciting public comment on the currently approved information collection, FERC-519, (Application under Federal Power Act Section 203); FERC-520, (Application for Authority to Hold interlocking Directorate positions); FERC-546, (Certification of Qualifying Facility (QF) Status for a Small Power Production or Cogeneration Facility);

FERC-580, (Interrogatory on Fuel and Energy Purchase Practices). The above four collections are a part of a combined notice only and are not being combined into one OMB Collection number.

**DATES:** Comments on the collection of information are due February 3, 2025.

**ADDRESSES:** You may submit copies of your comments (identified by Docket No. IC25-1-000) by one of the following methods:

Electronic filing through <https://www.ferc.gov>, is preferred.

- **Electronic Filing:** Documents must be filed in acceptable native applications and print-to-PDF, but not in scanned or picture format.

- For those unable to file electronically, comments may be filed by USPS mail or by hand (including courier) delivery:

- **Mail via U.S. Postal Service Only:** Addressed to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street NE, Washington, DC 20426.

- **Hand (including courier) Delivery:** Deliver to: Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852.

**Instructions:** All submissions must be formatted and filed in accordance with submission guidelines at: <https://www.ferc.gov>. For user assistance, contact FERC Online Support by email at [ferconlinesupport@ferc.gov](mailto:ferconlinesupport@ferc.gov), or by phone at (866) 208-3676 (toll-free).

**Docket:** Users interested in receiving automatic notification of activity in this docket or in viewing/downloading comments and issuances in this docket may do so at <https://www.ferc.gov>.

**FOR FURTHER INFORMATION CONTACT:** Kayla Williams may be reached by email at [DataClearance@FERC.gov](mailto:DataClearance@FERC.gov), telephone at (202) 502-6468.

#### SUPPLEMENTARY INFORMATION:

##### 1. FERC-519

**Title:** FERC-519, Application under Federal Power Act Section 203.<sup>1</sup>  
**OMB Control No.:** 1902-0082.

**Type of Request:** Three-year extension of the FERC-519 information collection requirements with no changes to the current reporting requirements.

**Abstract:** The Commission requires that public utility officers must seek authorization under amended section 203(a)(1)(B) of the Federal Power Act (FPA) to merge or consolidate, directly or indirectly, its facilities subject to the jurisdiction of the Commission, or any part thereof, with the facilities of any other person, or any part thereof, that are subject to the jurisdiction of the

Commission and have a value in excess of \$10 million, by any means whatsoever. In addition, as required by the Act, the Commission establishes a requirement to submit a notification filing for mergers or consolidations by a public utility if the facilities to be acquired have a value in excess of \$1 million and such public utility is not required to secure Commission authorization under amended section 203(a)(1)(B). The information collected under the FERC-519 enables the Commission to meet its statutory responsibilities regarding public utility disposition, merger, consolidation of facilities, purchase, or acquisition oversight and enforcement in accordance with the FPA as referenced above. Without this information, FERC would be unable to meet these responsibilities. The required information includes descriptions of corporate attributes of the party or parties to the proposed transaction (e.g., a sale, lease, or other disposition, merger, or consolidation of facilities, or purchase of other acquisition of the securities of a public utility and the facilities or other property involved in the transaction), statements about effect of the transaction, and the applicant's proof that the transaction will be consistent with the public interest. It will enable the Commission to meet its statutory responsibilities regarding its FPA section 203 oversight of public utility dispositions, mergers, or consolidation of facilities, and associated oversight and enforcement responsibilities under the FPA as referenced above. The required information to be collected in the notification filing (established by the addition of 18 CFR part 33.12) for certain transactions includes descriptions of corporate attributes of the party or parties to the transaction and the facilities involved. FPA section 203 requires a filing on the occasion that a public utility proposes to dispose of jurisdictional facilities, merge such facilities, or acquire the securities of another public utility. Public Utilities consist of:

- Corporate;
- Information Technology Management;
- General Accounting;
- Personnel and Payroll;
- Transportation;
- Tariffs and Rates;
- Insurance;
- Operations and Maintenance;
- Plant and Depreciation;
- Purchase and Stores;
- Revenue Accounting and Collection;
- Tax;

<sup>2</sup> 18 CFR 35.12 (2024).

<sup>1</sup> 16 U.S.C. 824b.



- Treasury; and
- Miscellaneous.

*Type of Respondents:* Public utility officers regulated by the FPA.

*Estimate of Annual Burden:*<sup>2</sup> The Commission estimates the total annual

burden and cost<sup>3</sup> for this information collection as follows:

**FERC-519—APPLICATION UNDER FEDERAL POWER ACT SECTION 203**

	Number of respondents (1)	Annual number of responses per respondent (2)	Total number of responses (1) * (2) = (3)	Average burden & cost per response (4)	Total annual burden hours (total annual cost) (3) * (4) = (5)	Cost per respondent (\$) (5) ÷ (1)
FERC-519 (FPA Section 203 Filings) <sup>4</sup> .	134	1	134	324.43 hr. <sup>5</sup> ; \$32,443 ...	43,473.62 hrs.; \$4,347,362 .....	\$32,443.

**2. FERC-520**

*Title:* FERC-520, Application for Authority to Hold Interlocking Directorate Positions.

*OMB Control No.:* 1902-0083.

*Type of Request:* Three-year extension of the FERC-520 information collection requirements with no changes to the current reporting requirements.

*Abstract:* FERC Form No. 520 is an application requesting FERC authorization for officers and directors of regulated public utilities to simultaneously hold positions of officers and directors of certain other entities. Section 305(b)(1) of the Federal Power Act (FPA)<sup>6</sup> prohibits the holding of specific interlocking positions unless the Commission has authorized the holding of such interlocks upon a determination that neither public nor

private interests will be adversely affected.

FERC-520 consists of three information collection activities. A “full application,” in accordance with 18 CFR 45.8, provides detailed information about the positions for which authorization is sought, including a description of duties. Submission of a more streamlined “informational report,” in accordance with 18 CFR 45.9, is a condition for an automatic grant of authorization to hold interlocking directorates. This automatic authorization is available only to certain types of officers and directors. Finally, a “notice of change,” in accordance with 18 CFR 45.5, is required within 60 days after an officer or director resigns or withdraws from Commission-authorized interlocked positions or if

the applicant is not re-elected or reappointed to the interlocked position. However, no notice of change is required if the only change is: (1) a resignation or withdrawal from fewer than all position held between or among affiliated public utilities; (2) a reelection or reappointment to a position that was previously authorized; or (3) holding a different or additional interlocking position that would qualify for automatic authorization under 18 CFR 45.9.

*Type of Respondents:* Officers and directors of public utilities seeking authorization to hold interlocking directorates.

*Estimate of Annual Burden:*<sup>7</sup> The Commission estimates the total annual burden and cost<sup>8</sup> for this information collection as follows:

**FERC-520—APPLICATION FOR AUTHORITY TO HOLD INTERLOCKING DIRECTORATE POSITIONS**

	A. Number of respondents	B. Annual number of responses per respondent	C. Total number of responses (Column A × Column B)	D. Average burden & cost per response	E. Total annual burden hours & total annual cost (Column C × Column D)	F. Cost per respondent (Column E ÷ Column A)
Full Application .....	16	1	16	50 hrs.; \$4,350 .....	800 hrs.; \$69,600 .....	\$4,350
Informational Report	500	1	500	8 hrs.; \$696 .....	4,000 hrs.; \$348,000 .....	696
Notice of Change ....	100	1	100	0.25 hrs.; \$21.75 .....	25 hrs.; \$2,175 .....	21.75
Totals .....	616	N/A	616	N/A .....	4,825 hrs.; \$419,775 .....	N/A

**3. FERC-546**

*Title:* FERC-546, Certificated Rate Filings: Gas Pipeline Rates.

*OMB Control No.:* 1902-0155.

*Type of Request:* Three-year extension of the FERC-546 information collection requirements with no changes to the current reporting requirements.

*Abstract:* The Commission reviews the FERC-546 materials to decide whether to approve rates and tariff changes associated with an application for a certificate under Natural Gas Act

<sup>2</sup> “Burden” is the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. For further explanation of what is included in the information collection burden, refer to Title 5 Code of Federal Regulations 1320.3.

<sup>3</sup> Commission staff estimates that the industry’s skill set and cost (for wages and benefits) for FERC-520 are approximately the same as the Commission’s average cost. The FERC 2024 average salary plus benefits for one FERC full-time equivalent (FTE) is \$207,786/year (or \$100/hour).

<sup>4</sup> Commission staff estimates that approximately 26 section 203 filings will change from full section 203 filings to the notification filing described above and will take one burden hour to complete. The number of respondents and responses is based on Commission staff’s estimate that 13 percent of the approximately 200 section 203 filings received will be affected. This represents a significant reduction in burden hours.

<sup>5</sup> With this amendment each of the 26 affected entities and their related filings (*i.e.*, the entities that now only have to file the section 203 notification filings) is reduced to 1 hour.

<sup>6</sup> 16 U.S.C. 825d(b)(1).

<sup>7</sup> “Burden” is the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. For further explanation of what is included in the information collection burden, refer to Title 5 Code of Federal Regulations 1320.3.

<sup>8</sup> Commission staff estimates that the industry’s skill set and cost (for wages and benefits) for FERC-520 are approximately the same as the Commission’s average cost. The FERC 2024 average salary plus benefits for one FERC full-time equivalent (FTE) is \$207,786/year (or \$100/hour).

(NGA) section 7(c) (15 U.S.C. 717). Additionally, FERC reviews FERC-546 materials in NGA section 4(f) (15 U.S.C. 717), storage applications, to evaluate an applicant’s market power and determine whether to grant market-based rate authority to the applicant. The Commission uses the information in FERC-546 to monitor jurisdictional transportation, natural gas storage, and unbundled sales activities of interstate natural gas pipelines and Hinshaw<sup>9</sup> pipelines. In addition to fulfilling the Commission’s obligations under the NGA, the FERC-546 enables the

Commission to monitor the activities and evaluate transactions of the natural gas industry, ensure competitiveness, and improve efficiency of the industry’s operations. In summary, the Commission uses the information to:

- ensure adequate customer protections under NGA section 4(f);
- review rate and tariff changes filed under NGA section 7(c) for certification of natural gas pipeline transportation and storage services;
- provide general industry oversight; and

- supplement documentation during the pipeline audits process.

Failure to collect this information would prevent the Commission from monitoring and evaluating transactions and operations of jurisdictional pipelines and performing its regulatory functions.

*Type of Respondents:* Jurisdictional pipeline companies and storage operators.

*Estimate of Annual Burden:*<sup>10</sup> The Commission estimates the burden and cost for this information collection as follows:

**FERC-546 (CERTIFICATED RATE FILINGS: GAS PIPELINE RATES)**

	Annual number of respondents	Annual number of responses per respondent	Total number of responses (rounded)	Average burden & cost per response (rounded)	Total annual burden hours & total annual cost (rounded)	Cost per respondent (\$) (rounded)
	(1)	(2)	(1) * (2) = (3)	(4)	(3) * (4) = (5)	(5) ÷ (1)
Pipeline Certificate Filings and Storage Applications.	48	11 <sup>1</sup>	48	500 hrs.; \$50,000 .....	24,000 hrs.; \$2,400,000 .....	\$50,000.
Project Area Labor Wage <sup>12</sup> ...	16	1	16	15 hrs; \$1,500 .....	240 hrs; \$24,000 .....	15 hrs: \$1,500.

**4. FERC-580**

*Title:* FERC Form 580: Interrogatory on Fuel and Energy Purchase Practices Pursuant to Section 205 of the Federal Power Act.

*OMB Control No.:* 1902-0137.

*Type of Request:* Three-year extension of the FERC Form 580 with no substantive changes to the current reporting requirements. Administrative changes to update the form are being made, as described below.

*Abstract:* The Commission collects FERC Form 580 information every other year as required under Section 205(f)(2) of the FPA,<sup>13</sup> which provides that the Commission must review, “not less

frequently than every 2 years,” practices under automatic adjustment clauses (AACs).<sup>14</sup> As required by FPA section 205(f)(2), the Commission uses the information collected through the FERC Form 580 interrogatory to review utility purchase and cost recovery practices under AACs in order to ensure efficient use of resources.<sup>15</sup> The Commission uses the information to evaluate costs in individual rate filings and to supplement periodic utility audits. The public also uses the information in this manner. Without the FERC Form 580 interrogatory, the Commission would not have the requisite information

available to conduct the necessary review the FPA mandates.

*Type of Respondents:* The filing must be submitted by all FERC-jurisdictional utilities owning and/or operating at least one steam-electric generating station of 50 MW or greater capacity or having a majority ownership interest in a jointly-owned steam-electric generating station of at least 50 MW. A jurisdictional utility without a cost-based tariff on file with the Commission is not required to file the form.

*Estimate of Annual Burden:* The Commission estimates the annual<sup>16</sup> public reporting burden<sup>17</sup> and cost<sup>18</sup> for the information collection as:

<sup>9</sup> Hinshaw pipelines are those that receive all out-of-state gas from entities within or at the boundary of a state if all the natural gas so received is ultimately consumed within the state in which it is received, 15 U.S.C. 717(c). Congress concluded that Hinshaw pipelines are “matters primarily of local concern,” and so are more appropriately regulated by pertinent state agencies rather than by FERC. The Natural Gas Act section 1(c) exempts Hinshaw pipelines from FERC jurisdiction. A Hinshaw pipeline, however, may apply for a FERC certificate to transport gas outside of state lines.

<sup>10</sup> “Burden” is the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. For further explanation of what is included in the information collection burden, refer to Title 5 Code of Federal Regulations 1320.3.

<sup>11</sup> This figure was calculated by dividing the total number of responses (111) by the total number of

respondents (83). The resulting figure was then rounded to the nearest thousandth place.

<sup>12</sup> Project-Area Wage Standards in the Labor Cost Component of Cost-of-Service Rates under Docket No. PL24-1-000 was issued on March 21, 2024, which allows jurisdictional entities to include wages consistent with project-area standards in cost-of-service rates filed with the Commission where the record supports that outcome.

<sup>13</sup> 16 U.S.C. 824d.

<sup>14</sup> An automatic adjustment clause is a provision of a rate schedule which provides for increases or decreases (or both), without prior hearing, in rates reflecting increases or decreases (or both) in costs incurred by an electric utility.

For additional information on AACs, see the Frequently Asked Questions (FAQs) and Desk Reference for FERC Form 580 on the Commission’s website.

<sup>15</sup> By using the data in FERC Form 580, the Commission is able to review utility purchase and cost recovery practices and ensure the resources are in compliance with Commission regulations in 18 CFR 35.14.

<sup>16</sup> The FERC Form 580 interrogatory is conducted every two years.

<sup>17</sup> Burden is defined as the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a federal agency. See 5 CFR 1320 for additional information on the definition of information collection burden.

<sup>18</sup> Commission staff estimates that the industry’s skill set and cost (for wages and benefits) for FERC-520 are approximately the same as the Commission’s average cost. The FERC 2024 average salary plus benefits for one FERC full-time equivalent (FTE) is \$207,786/year (or \$100/hour).

FERC FORM 580 (INTERROGATORY ON FUEL AND ENERGY PURCHASE PRACTICES PURSUANT TO SECTION 205 OF THE FEDERAL POWER ACT)

	Number of respondents (1)	Annual number of responses per respondent (2)	Total number of responses (1) * (2) = (3)	Average burden & cost per response (4)	Total annual burden hours & total annual cost (3) * (4) = (5)	Annual cost per respondent (\$) (5) ÷ (1)
Respondents with FACs <sup>19</sup> .....	24	0.5	12	103 hrs.; \$10,300 .....	1,236 hrs.; \$123,600 .....	\$5,150
Respondents with AACs, but no FACs .....	12	0.5	6	20 hrs.; \$2,000 .....	120.0 hrs.; \$12,000 .....	1,000
Respondents with no AACs and no FACs .....	4	0.5	2	2 hrs.; \$200 .....	4.0 hrs.; \$400 .....	100
<b>Total</b> .....			<b>20</b>		<b>1,360.0 hrs.; \$136,000</b> .....	

*Comments:* Comments are invited on: (1) whether the collection of information is necessary for the proper performance of the functions of the Commission, including whether the information will have practical utility; (2) the accuracy of the agency's estimate of the burden and cost of the collection of information, including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility and clarity of the information collection; and (4) ways to minimize the burden of the collection of information on those who are to respond, including the use of automated collection techniques or other forms of information technology.

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**  
*Secretary.*

[FR Doc. 2024-28248 Filed 12-2-24; 8:45 am]

**BILLING CODE 6717-01-P**

**DEPARTMENT OF ENERGY**

**Federal Energy Regulatory Commission**

[Docket No. CP25-17-000]

**Cimarron River Pipeline, LLC; Notice of Application and Establishing Intervention Deadline**

Take notice that on November 12, 2024, Cimarron River Pipeline, LLC (Cimarron River), 2331 CityWest Boulevard, Houston, Texas 77042, filed an abbreviated application under section 7(b) of the Natural Gas Act (NGA), and Part 157 of the Commission's regulations requesting authorization to abandon the Cimarron Facilities, comprised of approximately 450 miles of gathering facilities, including pipeline ranging from 4.5-inch- to 30-inch-diameter, auxiliary and appurtenant facilities, twenty-two field compressors, and sixty-three receipt and delivery points located in various counties of Texas, Oklahoma, and

Kansas (Cimarron Facilities Abandonment Project).

Cimarron River also requests authorization to abandon its: (i) NGA Section 7 certificate of public convenience and necessity for the acquisition, construction, and operation of the Cimarron Facilities; (ii) Part 157, Subpart F blanket certificate; and (iii) Part 284, Subpart G blanket certificate to provide open access transportation, as well as the cancellation of its FERC Gas Tariff, Second Revised Volume No. 1, including all rate schedules therein, all as more fully set forth in the application which is on file with the Commission and open for public inspection.

In addition to publishing the full text of this document in the **Federal Register**, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the internet through the Commission's Home Page (<https://www.ferc.gov>). From the Commission's Home Page on the internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

User assistance is available for eLibrary and the Commission's website during normal business hours from FERC Online Support at (202) 502-6652 (toll free at 1-866-208-3676) or email at [ferconlinesupport@ferc.gov](mailto:ferconlinesupport@ferc.gov), or the Public Reference Room at (202) 502-8371, TTY (202) 502-8659. Email the Public Reference Room at [public.referenceroom@ferc.gov](mailto:public.referenceroom@ferc.gov).

Any questions regarding the proposed project should be directed to Shannon M. Miller, Director, Regulatory Affairs, Cimarron River Pipeline, LLC, 2331 CityWest Boulevard, Houston, Texas 77042, by phone at (832) 765-8312, or by email at [shannon.m.miller@p66.com](mailto:shannon.m.miller@p66.com).

Pursuant to section 157.9 of the Commission's Rules of Practice and

Procedure,<sup>1</sup> within 90 days of this Notice the Commission staff will either: complete its environmental review and place it into the Commission's public record (eLibrary) for this proceeding; or issue a Notice of Schedule for Environmental Review. If a Notice of Schedule for Environmental Review is issued, it will indicate, among other milestones, the anticipated date for the Commission staff's issuance of the final environmental impact statement (FEIS) or environmental assessment (EA) for this proposal. The filing of an EA in the Commission's public record for this proceeding or the issuance of a Notice of Schedule for Environmental Review will serve to notify Federal and State agencies of the timing for the completion of all necessary reviews, and the subsequent need to complete all Federal authorizations within 90 days of the date of issuance of the Commission staff's FEIS or EA.

**Public Participation**

There are three ways to become involved in the Commission's review of this project: you can file comments on the project, you can protest the filing, and you can file a motion to intervene in the proceeding. There is no fee or cost for filing comments or intervening. The deadline for filing a motion to intervene is 5:00 p.m. Eastern Time on December 16, 2024. How to file protests, motions to intervene, and comments is explained below.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to

<sup>19</sup>Fuel Adjustment Clause (FAC).

<sup>1</sup> 18 CFR 157.9.

contact OPP at (202) 502-6595 or *OPP@ferc.gov*.

### Comments

Any person wishing to comment on the project may do so. Comments may include statements of support or objections, to the project as a whole or specific aspects of the project. The more specific your comments, the more useful they will be.

### Protests

Pursuant to sections 157.10(a)(4)<sup>2</sup> and 385.211<sup>3</sup> of the Commission's regulations under the NGA, any person<sup>4</sup> may file a protest to the application. Protests must comply with the requirements specified in section 385.2001<sup>5</sup> of the Commission's regulations. A protest may also serve as a motion to intervene so long as the protestor states it also seeks to be an intervenor.

To ensure that your comments or protests are timely and properly recorded, please submit your comments on or before December 16, 2024.

There are three methods you can use to submit your comments or protests to the Commission. In all instances, please reference the Project docket number CP25-17-000 in your submission.

(1) You may file your comments electronically by using the eComment feature, which is located on the Commission's website at *www.ferc.gov* under the link to Documents and Filings. Using eComment is an easy method for interested persons to submit brief, text-only comments on a project;

(2) You may file your comments or protests electronically by using the eFiling feature, which is located on the Commission's website (*www.ferc.gov*) under the link to Documents and Filings. With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "eRegister." You will be asked to select the type of filing you are making; first select "General" and then select "Comment on a Filing"; or

(3) You can file a paper copy of your comments or protests by mailing them to the following address below. Your written comments must reference the Project docket number (CP25-17-000).

*To file via USPS:* Debbie-Anne A. Reese, Secretary, Federal Energy

Regulatory Commission, 888 First Street NE, Washington, DC 20426.

*To file via any other courier:* Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852.

The Commission encourages electronic filing of comments (options 1 and 2 above) and has eFiling staff available to assist you at (202) 502-8258 or *FercOnlineSupport@ferc.gov*.

Persons who comment on the environmental review of this project will be placed on the Commission's environmental mailing list, and will receive notification when the environmental documents (EA or EIS) are issued for this project and will be notified of meetings associated with the Commission's environmental review process.

The Commission considers all comments received about the project in determining the appropriate action to be taken. However, the filing of a comment alone will not serve to make the filer a party to the proceeding. To become a party, you must intervene in the proceeding. For instructions on how to intervene, see below.

### Interventions

Any person, which includes individuals, organizations, businesses, municipalities, and other entities,<sup>6</sup> has the option to file a motion to intervene in this proceeding. Only intervenors have the right to request rehearing of Commission orders issued in this proceeding and to subsequently challenge the Commission's orders in the U.S. Circuit Courts of Appeal.

To intervene, you must submit a motion to intervene to the Commission in accordance with Rule 214 of the Commission's Rules of Practice and Procedure<sup>7</sup> and the regulations under the NGA<sup>8</sup> by the intervention deadline for the project, which is December 16, 2024. As described further in Rule 214, your motion to intervene must state, to the extent known, your position regarding the proceeding, as well as your interest in the proceeding. For an individual, this could include your status as a landowner, ratepayer, resident of an impacted community, or recreationist. You do not need to have property directly impacted by the project in order to intervene. For more information about motions to intervene, refer to the FERC website at *https://*

*www.ferc.gov/resources/guides/how-to-intervene.asp*.

There are two ways to submit your motion to intervene. In both instances, please reference the Project docket number CP25-17-000 in your submission.

(1) You may file your motion to intervene by using the Commission's eFiling feature, which is located on the Commission's website (*www.ferc.gov*) under the link to Documents and Filings. New eFiling users must first create an account by clicking on "eRegister." You will be asked to select the type of filing you are making; first select "General" and then select "Intervention." The eFiling feature includes a document-less intervention option; for more information, visit *https://www.ferc.gov/docs-filing/efiling/document-less-intervention.pdf*; or

(2) You can file a paper copy of your motion to intervene, along with three copies, by mailing the documents to the address below. Your motion to intervene must reference the Project docket number CP25-17-000.

*To file via USPS:* Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426.

*To file via any other courier:* Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852.

The Commission encourages electronic filing of motions to intervene (option 1 above) and has eFiling staff available to assist you at (202) 502-8258 or *FercOnlineSupport@ferc.gov*.

Protests and motions to intervene must be served on the applicant either by mail at: Shannon M. Miller, Director, Regulatory Affairs, Cimarron River Pipeline, LLC, 2331 CityWest Boulevard, Houston, Texas 77042, or by email (with a link to the document) at *shannon.m.miller@p66.com*. Any subsequent submissions by an intervenor must be served on the applicant and all other parties to the proceeding. Contact information for parties can be downloaded from the service list at the eService link on FERC Online. Service can be via email with a link to the document.

All timely, unopposed<sup>9</sup> motions to intervene are automatically granted by operation of Rule 214(c)(1).<sup>10</sup> Motions to intervene that are filed after the intervention deadline are untimely, and may be denied. Any late-filed motion to

<sup>2</sup> 18 CFR 157.10(a)(4).

<sup>3</sup> 18 CFR 385.211.

<sup>4</sup> Persons include individuals, organizations, businesses, municipalities, and other entities. 18 CFR 385.102(d).

<sup>5</sup> 18 CFR 385.2001.

<sup>6</sup> 18 CFR 385.102(d).

<sup>7</sup> 18 CFR 385.214.

<sup>8</sup> 18 CFR 157.10.

<sup>9</sup> The applicant has 15 days from the submittal of a motion to intervene to file a written objection to the intervention.

<sup>10</sup> 18 CFR 385.214(c)(1).

intervene must show good cause for being late and must explain why the time limitation should be waived and provide justification by reference to factors set forth in Rule 214(d) of the Commission's Rules and Regulations.<sup>11</sup> A person obtaining party status will be placed on the service list maintained by the Secretary of the Commission and will receive copies (paper or electronic) of all documents filed by the applicant and by all other parties.

#### Tracking the Proceeding

Throughout the proceeding, additional information about the project will be available from the Commission's Office of External Affairs, at (866) 208-FERC, or on the FERC website at [www.ferc.gov](http://www.ferc.gov) using the "eLibrary" link as described above. The eLibrary link also provides access to the texts of all formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. For more information and to register, go to [www.ferc.gov/docs-filing/esubscription.asp](http://www.ferc.gov/docs-filing/esubscription.asp).

**Intervention Deadline:** 5:00 p.m. Eastern Time on December 16, 2024.

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**  
Secretary.

[FR Doc. 2024-28249 Filed 12-2-24; 8:45 am]

BILLING CODE 6717-01-P

#### DEPARTMENT OF ENERGY

##### Federal Energy Regulatory Commission

[Project No. 2997-031]

#### South Sutter Water District; Notice of Reasonable Period of Time for Water Quality Certification Application

On November 22, 2024, the California State Water Resources Control Board (Water Board) submitted to the Federal Energy Regulatory Commission (Commission) a notice that it received a complete application requesting a Clean Water Act section 401(a)(1) water quality certification from South Sutter Water District, in conjunction with the above captioned project on October 25, 2024. Pursuant to section 4.34(b)(5) of

the Commission's regulations,<sup>1</sup> we hereby notify the Water Board of the following:

**Date of Receipt of the Certification Request:** October 25, 2024.

**Reasonable Period of Time to Act on the Certification Request:** October 25, 2025.

If the Water Board fails or refuses to act on the water quality certification request on or before the above date, then the certifying authority is deemed waived pursuant to section 401(a)(1) of the Clean Water Act, 33 U.S.C. 1341(a)(1).

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**  
Secretary.

[FR Doc. 2024-28252 Filed 12-2-24; 8:45 am]

BILLING CODE 6717-01-P

#### DEPARTMENT OF ENERGY

##### Federal Energy Regulatory Commission

[Docket Nos. EL25-12-000; EL25-13-000]

#### Notice of Institution of Section 206 Proceeding and Refund Effective Date; Hamilton Liberty LLC, Hamilton Patriot LLC

On November 25, 2024, the Commission issued an order in Docket Nos. EL25-12-000 and EL25-13-000, pursuant to section 206 of the Federal Power Act (FPA), 16 U.S.C. 824e, instituting an investigation to determine whether Hamilton Liberty LLC and Hamilton Patriot LLC Rate Schedules is unjust, unreasonable, unduly discriminatory or preferential, or otherwise unlawful. *Hamilton Liberty LLC and Hamilton Patriot LLC*, 189 FERC ¶ 61,140 (2024).

The refund effective date in Docket Nos. EL25-12-000 and EL25-13-000 established pursuant to section 206(b) of the FPA, will be the date of publication of this notice in the **Federal Register**.

Any interested person desiring to be heard in Docket Nos. EL25-12-000 and EL25-13-000 must file a notice of intervention or motion to intervene, as appropriate, with the Federal Energy Regulatory Commission, in accordance with Rule 214 of the Commission's Rules of Practice and Procedure, 18 CFR 385.214 (2024), within 21 days of the date of issuance of the order.

In addition to publishing the full text of this document in the **Federal Register**, the Commission provides all interested persons an opportunity to view and/or print the contents of this

document via the internet through the Commission's Home Page (<http://www.ferc.gov>) using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. From FERC's Home Page on the internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field. User assistance is available for eLibrary and the FERC's website during normal business hours from FERC Online Support at 202-502-6652 (toll free at 1-866-208-3676) or email at [ferconlinesupport@ferc.gov](mailto:ferconlinesupport@ferc.gov), or the Public Reference Room at (202) 502-8371, TTY (202) 502-8659. Email the Public Reference Room at [public.referenceroom@ferc.gov](mailto:public.referenceroom@ferc.gov).

The Commission strongly encourages electronic filings of comments, protests and interventions in lieu of paper using the "eFile" link at <http://www.ferc.gov>. In lieu of electronic filing, you may submit a paper copy. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502-6595 or [OPP@ferc.gov](mailto:OPP@ferc.gov).

Dated: November 26, 2024.

**Carlos D. Clay,**

Acting Deputy Secretary.

[FR Doc. 2024-28318 Filed 12-2-24; 8:45 am]

BILLING CODE 6717-01-P

<sup>11</sup> 18 CFR 385.214(b)(3) and (d).

<sup>1</sup> 18 CFR 4.34(b)(5).

## DEPARTMENT OF ENERGY

Federal Energy Regulatory  
Commission

[Project No. 2997–031]

South Sutter Water District; Notice of  
Intent To Prepare an Environmental  
Assessment

On July 1, 2019, South Sutter Water District (SSWD) filed an application for a major, new license for the 6.8-megawatt Camp Far West Hydroelectric Project No. 2997 (Camp Far West Project), which was amended on December 28, 2023. The Camp Far West Project is located on the Bear River in Yuba, Nevada, and Placer Counties, California. No Federal or Tribal lands occur within or adjacent to the project boundary or along the Bear River downstream of the project.

In accordance with the Commission's regulations, on September 5, 2024, Commission staff issued a notice that the project was ready for environmental analysis (REA Notice). Based on the information in the record, including comments filed in response to the REA Notice, staff does not anticipate that licensing the project would constitute a major Federal action significantly affecting the quality of the human environment. Therefore, staff intends to prepare a draft and final Environmental Assessment (EA) on the application to relicense the Camp Far West Project.<sup>1</sup>

The EA will be issued and circulated for review by all interested parties. All comments filed on the EA will be analyzed by staff and considered in the Commission's final licensing decision.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502–6595 or *OPP@ferc.gov*.

The application will be processed according to the following schedule.

<sup>1</sup> In accordance with the Council on Environmental Quality's regulations, the unique identification number for documents relating to this environmental review is EAXX–019–20–000–1732280168. 40 CFR 1501.5(c)(4) (2024).

Revisions to the schedule may be made as appropriate.<sup>2</sup>

Milestone	Target date
Commission issues draft EA.	April 2025.
Comments on draft EA ..... Commission issues final EA.	May 2025. November 2025. <sup>3</sup>

Any questions regarding this notice may be directed to Quinn Emmering, the Commission's coordinator assigned to the project relicense, at (202) 502–6382 or *quinn.emmering@ferc.gov*.

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**

*Secretary.*

[FR Doc. 2024–28245 Filed 12–2–24; 8:45 am]

**BILLING CODE 6717–01–P**

## DEPARTMENT OF ENERGY

Federal Energy Regulatory  
Commission

[Docket No. EL25–8–000]

Notice of Institution of Section 206  
Proceeding and Refund Effective Date;  
NorthWestern Corporation

On November 25, 2024, the Commission issued an order in Docket No. EL25–8–000, pursuant to section 206 of the Federal Power Act (FPA), 16 U.S.C. 824e, instituting an investigation to determine whether NorthWestern Corporation's Rate Schedule is unjust, unreasonable, unduly discriminatory or preferential, or otherwise unlawful. *NorthWestern Corporation*, 189 FERC ¶ 61,137 (2024).

The refund effective date in Docket No. EL25–8–000 established pursuant to section 206(b) of the FPA, will be the date of publication of this notice in the **Federal Register**.

Any interested person desiring to be heard in Docket No. EL25–8–000 must file a notice of intervention or motion to intervene, as appropriate, with the Federal Energy Regulatory Commission, in accordance with Rule 214 of the Commission's Rules of Practice and Procedure, 18 CFR 385.214 (2024), within 21 days of the date of issuance of the order.

<sup>2</sup> Please note, this notice and the schedule herein, supersedes the Notice of Intent to Prepare an EA issued by staff on August 5, 2021.

<sup>3</sup> The Council on Environmental Quality's (CEQ) regulations under 40 CFR 1501.10(b)(1) require that EAs be completed within 1 year of the Federal action agency's decision to prepare an EA. *See* National Environmental Policy Act, 42 U.S.C. 4321 *et seq.*, as amended by section 107(g)(1)(B)(iii) of the Fiscal Responsibility Act of 2023, Public Law 118–5, 4336a, 137 Stat. 42.

In addition to publishing the full text of this document in the **Federal Register**, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the internet through the Commission's Home Page (<http://www.ferc.gov>) using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. From FERC's Home Page on the internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field. User assistance is available for eLibrary and the FERC's website during normal business hours from FERC Online Support at 202–502–6652 (toll free at 1–866–208–3676) or email at *ferconlinesupport@ferc.gov*, or the Public Reference Room at (202) 502–8371, TTY (202) 502–8659. Email the Public Reference Room at *public.referenceroom@ferc.gov*.

The Commission strongly encourages electronic filings of comments, protests and interventions in lieu of paper using the "eFile" link at <http://www.ferc.gov>. In lieu of electronic filing, you may submit a paper copy. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502–6595 or *OPP@ferc.gov*.

Dated: November 26, 2024.

**Carlos D. Clay,**

*Acting Deputy Secretary.*

[FR Doc. 2024–28317 Filed 12–2–24; 8:45 am]

**BILLING CODE 6717–01–P**

**DEPARTMENT OF ENERGY****Federal Energy Regulatory Commission**

[Project No. 2428–011]

**Aquenergy Systems, LLC; Notice of Application for Recreation Plan Amendment Accepted for Filing, Soliciting Comments, Motions To Intervene, and Protests**

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection:

a. *Application Type*: Recreation Plan Amendment.

b. *Project No*: 2428–011.

c. *Date Filed*: August 29, 2024.

d. *Applicant*: Aquenergy Systems, LLC.

e. *Name of Project*: Piedmont Hydroelectric Project.

f. *Location*: The Piedmont Hydroelectric Project is located on the Saluda River in Anderson and Greenville counties, South Carolina.

g. *Filed Pursuant to*: Federal Power Act, 16 U.S.C. 791a–825r.

h. *Applicant Contact*: Kevin Webb, Aquenergy Systems, LLC, (978) 935–6039, [kwebb@patriohydro.com](mailto:kwebb@patriohydro.com).

i. *FERC Contact*: Mark Ivy, (202) 502–6156, [mark.ivy@ferc.gov](mailto:mark.ivy@ferc.gov).

j. *Cooperating agencies*: With this notice, the Commission is inviting federal, state, local, and Tribal agencies with jurisdiction and/or special expertise with respect to environmental issues affected by the proposal, that wish to cooperate in the preparation of any environmental document, if applicable, to follow the instructions for filing such requests described in item k below. Cooperating agencies should note the Commission's policy that agencies that cooperate in the preparation of any environmental document cannot also intervene. See 94 FERC ¶ 61,076 (2001).

k. *Deadline for filing comments, motions to intervene, and protests*: December 26, 2024.

The Commission strongly encourages electronic filing. Please file comments, motions to intervene, and protests using the Commission's eFiling system at <http://www.ferc.gov/docs-filing/efiling.asp>. Commenters can submit brief comments up to 6,000 characters, without prior registration, using the eComment system at <http://www.ferc.gov/docs-filing/ecomment.asp>. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), (866) 208–3676 (toll free), or (202) 502–8659 (TTY). In lieu of electronic filing, you

may submit a paper copy. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426.

Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, Maryland 20852. The first page of any filing should include the docket number P–2428–011. Comments emailed to Commission staff are not considered part of the Commission record.

The Commission's Rules of Practice and Procedure require all intervenors filing documents with the Commission to serve a copy of that document on each person whose name appears on the official service list for the project. Further, if an intervenor files comments or documents with the Commission relating to the merits of an issue that may affect the responsibilities of a particular resource agency, they must also serve a copy of the document on that resource agency.

l. *Description of Request*: The licensee requests to amend the project's Recreation Management Plan, as approved on October 4, 2021, to remove the requirement to provide informal fishing access near the confluence of Big Brushy Creek and the Saluda River. Bank fishing opportunities would remain available at the canoe portage take-out and put-in locations.

m. *Locations of the Application*: This filing may be viewed on the Commission's website at <http://www.ferc.gov> using the "eLibrary" link. Enter the docket number excluding the last three digits in the docket number field to access the document. You may also register online at <http://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. For assistance, call 1–866–208–3676 or email [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), for TTY, call (202) 502–8659. Agencies may obtain copies of the application directly from the applicant.

n. Individuals desiring to be included on the Commission's mailing list should so indicate by writing to the Secretary of the Commission.

o. *Comments, Protests, or Motions to Intervene*: Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of Rules of Practice and Procedure, 18 CFR 385.210, .211, .214, respectively. In determining the appropriate action to take, the Commission will consider all protests or

other comments filed, but only those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application.

p. *Filing and Service of Documents*: Any filing must (1) bear in all capital letters the title "COMMENTS", "PROTEST", or "MOTION TO INTERVENE" as applicable; (2) set forth in the heading the name of the applicant and the project number of the application to which the filing responds; (3) furnish the name, address, and telephone number of the person commenting, protesting or intervening; and (4) otherwise comply with the requirements of 18 CFR 385.2001 through 385.2005. All comments, motions to intervene, or protests must set forth their evidentiary basis. Any filing made by an intervenor must be accompanied by proof of service on all persons listed in the service list prepared by the Commission in this proceeding, in accordance with 18 CFR 385.2010.

q. The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502–6595 or [OPP@ferc.gov](mailto:OPP@ferc.gov).

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**  
Secretary.

[FR Doc. 2024–28246 Filed 12–2–24; 8:45 am]

**BILLING CODE 6717–01–P**

**DEPARTMENT OF ENERGY****Federal Energy Regulatory Commission****Combined Notice of Filings**

Take notice that the Commission has received the following Natural Gas Pipeline Rate and Refund Report filings:

**Filings Instituting Proceedings**

*Docket Numbers*: RP25–212–000.

*Applicants*: Guardian Pipeline, L.L.C.

*Description*: § 4(d) Rate Filing; Non-Conforming and Negotiated Rate

Agreement FT0053 WMRE to be effective 10/16/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5008.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* RP25–213–000.

*Applicants:* Kern River Gas

Transmission Company.

*Description:* § 4(d) Rate Filing; 2024 IPA Nonconforming TSA Filing to be effective 1/1/2025.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5046.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* RP25–214–000.

*Applicants:* El Paso Natural Gas

Company, L.L.C.

*Description:* § 4(d) Rate Filing; Non-Conforming Negotiated Rate Agreements (Mex Gas) to be effective 1/1/2025.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5121.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* RP25–215–000.

*Applicants:* Tennessee Gas Pipeline

Company, L.L.C.

*Description:* Compliance filing; Cashout Report 2023–2024 to be effective N/A.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5127.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* RP25–216–000.

*Applicants:* Young Gas Storage

Company, Ltd.

*Description:* § 4(d) Rate Filing; Annual Fuel Filing 2024 to be effective 1/1/2025.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5131.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* RP25–217–000.

*Applicants:* Columbia Gas

Transmission, LLC.

*Description:* § 4(d) Rate Filing; Capacity Release Eff 12.1.24 to be effective 12/1/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5138.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* RP25–218–000.

*Applicants:* El Paso Natural Gas

Company, L.L.C.

*Description:* § 4(d) Rate Filing; Negotiated Rate Agreement Update (Hartree Dec 24) to be effective 12/1/2024.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5139.

*Comment Date:* 5 p.m. ET 12/9/24.

*Docket Numbers:* RP25–219–000.

*Applicants:* MountainWest Pipeline, LLC.

*Description:* § 4(d) Rate Filing; Fuel Gas Reimbursement Percentage (FGRP) for 2025 to be effective 1/1/2025.

*Filed Date:* 11/26/24.

*Accession Number:* 20241126–5179.

*Comment Date:* 5 p.m. ET 12/9/24.

Any person desiring to intervene, to protest, or to answer a complaint in any of the above proceedings must file in accordance with Rules 211, 214, or 206 of the Commission's Regulations (18 CFR 385.211, 385.214, or 385.206) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

#### Filings in Existing Proceedings

*Docket Numbers:* RP19–257–014.

*Applicants:* Southwest Gas Storage Company.

*Description:* Compliance filing; Informational Filing—RP19–257–000, et al. to be effective N/A.

*Filed Date:* 11/25/24.

*Accession Number:* 20241125–5188.

*Comment Date:* 5 p.m. ET 12/9/24.

Any person desiring to protest in any of the above proceedings must file in accordance with Rule 211 of the Commission's Regulations (18 CFR 385.211) on or before 5:00 p.m. Eastern time on the specified comment date.

The filings are accessible in the Commission's eLibrary system (<https://elibrary.ferc.gov/idmws/search/fercensearch.asp>) by querying the docket number.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: <http://www.ferc.gov/docs-filing/efiling/filing-req.pdf>. For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

The Commission's Office of Public Participation (OPP) supports meaningful public engagement and participation in Commission proceedings. OPP can help members of the public, including landowners, environmental justice communities, Tribal members and others, access publicly available information and navigate Commission processes. For public inquiries and assistance with making filings such as interventions, comments, or requests for rehearing, the public is encouraged to contact OPP at (202) 502–6595 or [OPP@ferc.gov](mailto:OPP@ferc.gov).

Dated: November 26, 2024.

**Carlos D. Clay,**

*Acting Deputy Secretary.*

[FR Doc. 2024–28288 Filed 12–2–24; 8:45 am]

**BILLING CODE 6717–01–P**

## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

#### Privacy Act of 1974; System of Records

**AGENCY:** Federal Energy Regulatory Commission (FERC), Department of Energy (DOE).

**ACTION:** Notice of a modified system of records.

**SUMMARY:** In accordance with the Privacy Act of 1974, all agencies are required to publish in the **Federal Register** a notice of their systems of records. Notice is hereby given that the Federal Energy Regulatory Commission (FERC) is publishing a notice of modifications to an existing FERC system of records titled “Commission Equal Employment Opportunity (EEO) Discrimination Complaint Records (FERC–19)” previously titled “Commission Equal Employment Opportunity (EEO) Discrimination Complaints File”.

**DATES:** Comments on this modified system of records must be received no later than 30 days after the date of publication in the **Federal Register**. If no public comment is received during this period or unless otherwise published in the **Federal Register** by FERC, the modified system of records will become effective a minimum of 30 days after date of publication in the **Federal Register**. If FERC receives public comments, FERC shall review the comments to determine whether any changes to the notice are necessary.

**ADDRESSES:** Comments may be submitted in writing to Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426 or electronically to [privacy@ferc.gov](mailto:privacy@ferc.gov). Comments should indicate that they are submitted in response to “Commission Equal Employment Opportunity (EEO) Discrimination Complaint Records (FERC–19)”.

**FOR FURTHER INFORMATION CONTACT:** Mittal Desai, Chief Information Officer & Senior Agency Official for Privacy, Office of the Executive Director, Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426, [privacy@ferc.gov](mailto:privacy@ferc.gov), (202) 502–6432.

**SUPPLEMENTARY INFORMATION:** In accordance with the Privacy Act of 1974, and to comply with the Office of Management and Budget (OMB) Memorandum M–17–12, “Preparing for and Responding to a Breach of Personally Identifiable Information”, January 3, 2017, this notice has twelve (12) modified and new routine uses,



including two new routine uses that will permit FERC to disclose information as necessary in response to an actual or suspected breach that pertains to a breach of its own records or to assist another agency in its efforts to respond to a breach that was previously published separately at 87 FR 35543 (June 10, 2022).

The following sections have been updated to reflect changes made since the publication of the last notice in the **Federal Register**: dates; addresses; for further contact information; system location; system manager; purpose of the system; categories of individuals covered by the system; categories of records in the system; routine uses of records maintained in the system, including categories of users and the purpose of such; policies and practices for storage of records; policies and practices for retention and disposal of records; administrative, technical, physical safeguards; records access procedures; contesting records procedures; notification procedures; and history.

**SYSTEM NAME AND NUMBER:**

*Commission Equal Employment Opportunity (EEO) Discrimination Complaint Records (FERC-19).*

**SECURITY CLASSIFICATION:**

Unclassified.

**SYSTEM LOCATION:**

Federal Energy Regulatory Commission, Office of the Executive Director, Equal Employment Opportunity and Civil Rights Organization, 888 First Street NE, Washington, DC 20426.

**SYSTEM MANAGER(S):**

Director, Equal Employment Opportunity and Civil Rights Organization, Office of the Executive Director, Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426.

**AUTHORITY FOR MAINTENANCE OF THE SYSTEM:**

29 CFR part 1614—*Federal Sector Equal Employment Opportunity.*

**PURPOSE(S) OF THE SYSTEM:**

The purpose of this system of records is to track and to maintain documentation of FERC EEO complaints filed. It is also used to create EEOC Form 462, Annual Report on the Federal Workforce, that includes, among other data, information on Federal equal employment opportunity complaints and Alternative Dispute Resolution activities, and reports on the No Fear Act.

**CATEGORIES OF INDIVIDUALS COVERED BY THE SYSTEM:**

The categories of individuals covered by the system include current and former FERC employees, contractors, applicants, witnesses, investigators, mediators, legal counsel, and FERC counsel.

**CATEGORIES OF RECORDS IN THE SYSTEM:**

The categories of records in this system include name, personal and work contact information (such as telephone number, mailing address, and email address), date of birth, office, role, supervisor information, grade level, status of a person's race, color, religion, sex (including pregnancy, childbirth, or related conditions, gender identity, and sexual orientation), national origin, age, disability or genetic information, associated auto-generated case number, allegation, information on the requested remedy, written complaint, witness statements, pictures, screenshots of emails and messages, copies of the Equal Employment Opportunity Commission filing orders, investigative reports, decision documents, signature, and appeal documentation.

**RECORD SOURCE CATEGORIES:**

Records are obtained from Equal Employment Opportunity investigators, subjects filing the complaint, witnesses, Equal Employment Opportunity Director, Equal Employment Opportunity Counselors, Office of the General Counsel staff, the Equal Employment Opportunity Commission, mediators, legal counsel, Human Resources, and courts.

**ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND PURPOSES OF SUCH USES:**

In addition to those disclosures generally permitted under 5 U.S.C. 552a(b) of the Privacy Act, information maintained in this system may be disclosed to authorized entities outside FERC for purposes determined to be relevant and necessary as a routine use pursuant to 5 U.S.C. 552a(b)(3) as follows:

1. To appropriate agencies, entities, and persons when (1) FERC suspects or has confirmed that there has been a breach of the system of records; (2) FERC has determined that as a result of the suspected or confirmed breach there is a risk of harm to individuals, the Commission (including its information systems, programs, and operations), the Federal Government, or national security; and (3) the disclosure made to such agencies, entities, and persons is reasonably necessary to assist in connection with the Commission's

efforts to respond to the suspected or confirmed breach or to prevent, minimize, or remedy such harm.

2. To another Federal agency or Federal entity, when FERC determines that information from this system of records is reasonably necessary to assist the recipient agency or entity in (1) responding to a suspected or confirmed breach or (2) preventing, minimizing, or remedying the risk of harm to individuals, the recipient agency or entity (including its information systems, programs, and operations), the Federal Government, or national security, resulting from a suspected or confirmed breach.

3. To a congressional office from the record of an individual in response to an inquiry from that congressional office made at the request of that individual.

4. To the Equal Employment Opportunity Commission when requested in connection with investigations of alleged or possible discriminatory practices, examination of Federal affirmative employment programs, or other functions of the Commission as authorized by law or regulation.

5. To the Federal Labor Relations Authority or its General Counsel when requested in connection with investigations of allegations of unfair labor practices or matters before the Federal Service Impasses Panel.

6. To disclose information to another Federal agency, to a court, or a party in litigation before a court or in an administrative proceeding being conducted by a Federal agency, when the Government is a party to the judicial or administrative proceeding. In those cases where the Government is not a party to the proceeding, records may be disclosed if a subpoena has been signed by a judge.

7. To the Department of Justice (DOJ) for its use in providing legal advice to FERC or in representing FERC in a proceeding before a court, adjudicative body, or other administrative body, where the use of such information by the DOJ is deemed by FERC to be relevant and necessary to the advice or proceeding, and such proceeding names as a party in interest: (a) FERC; (b) any employee of FERC in his or her official capacity; (c) any employee of FERC in his or her individual capacity where DOJ has agreed to represent the employee; or (d) the United States, where FERC determines that litigation is likely to affect FERC or any of its components.

8. To non-Federal Personnel, such as contractors, agents, or other authorized individuals performing work on a contract, service, cooperative agreement,

job, or other activity on behalf of FERC or Federal Government and who have a need to access the information in the performance of their duties or activities.

9. To the National Archives and Records Administration in records management inspections and its role as Archivist.

10. To the Merit Systems Protection Board or the Board's Office of the Special Counsel, when relevant information is requested in connection with appeals, special studies of the civil service and other merit systems, review of Office of Personnel Management (OPM) rules and regulations, and investigations of alleged or possible prohibited personnel practices.

11. To appropriate Federal, State, or local agency responsible for investigating, prosecuting, enforcing, or implementing a statute, rule, regulation, or order, if the information may be relevant to a potential violation of civil or criminal law, rule, regulation, order.

12. To appropriate agencies, entities, and person(s) that are a party to a dispute, when FERC determines that information from this system of records is reasonably necessary for the recipient to assist with the resolution of the dispute, and the information may include the name, address, telephone number, email address, and affiliation of the agency, entity, and/or person(s) seeking and/or participating in dispute resolution services, where appropriate.

#### **POLICIES AND PRACTICES FOR STORAGE OF RECORDS:**

Records are stored electronically on a FedRAMP-authorized cloud service provider, and on a FedRAMP-authorized SharePoint site. In addition, all FERC employees and contractors with authorized access have undergone a thorough background security investigation. Data access is restricted to agency personnel or contractors whose responsibilities require access. Access to electronic records is controlled by the organization's Single Sign-On and Multi-Factor Authentication Solution. Role based access is used to restrict electronic data access and the organization employs the principle of least privilege, allowing only authorized users with access necessary to accomplish assigned tasks in accordance with organizational missions and business functions.

#### **POLICIES AND PRACTICES FOR RETRIEVAL OF RECORDS:**

Records are retrieved by employee name and associated case number.

#### **POLICIES AND PRACTICES FOR THE RETENTION AND DISPOSAL OF RECORDS:**

Records are retained in accordance with the applicable National Archives and Records Administration Schedules, with the following applicable General Records Schedules:

1. General Records Schedule (GRS) 2.3: Employee Relations Records, Item 010, DAA-GRS-2022-0001-0001. Temporary. Destroy when 3 years old, but longer retention is authorized if required for business use.

2. General Records Schedule (GRS) 2.3: Employee Relations Records, Item 020, DAA-GRS-2022-0001-0002. Temporary. Destroy 3 years after employee separation from the agency or all appeals are concluded, whichever is later, but longer retention is authorized if required for business use.

3. General Records Schedule (GRS) 2.3: Employee Relations Records, Item 110, DAA-GRS-2018-0002-0012. Temporary. Destroy 3 years after resolution of case, but longer retention is authorized if required for business use.

4. General Records Schedule (GRS) 2.3: Employee Relation Records, Item 111, DAA-GRS2018-0002-0013. Temporary: Destroy 7 years after close of case, but longer retention is authorized if required for business use.

#### **ADMINISTRATIVE, TECHNICAL, AND PHYSICAL SAFEGUARDS:**

See Policies and Practices for Storage of Records.

#### **RECORD ACCESS PROCEDURES:**

Individuals requesting access to the contents of records must submit a request through the Freedom of Information Act (FOIA) office. The FOIA website is located at: <https://www.ferc.gov/foia>. Requests may be submitted through the following portal: <https://www.ferc.gov/enforcement-legal/foia/electronic-foia-privacy-act-request-form>. Written requests for access to records should be directed to: Director, Office of External Affairs, Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426.

#### **CONTESTING RECORD PROCEDURES:**

See Records Access Procedures.

#### **NOTIFICATION PROCEDURES:**

Generalized notice is provided by the publication of this notice. For specific notice, see Records Access Procedure, above.

#### **EXEMPTIONS PROMULGATED FOR THE SYSTEM:**

None.

#### **HISTORY:**

65 FR 21745 (April 24, 2000).

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**  
*Secretary.*

[FR Doc. 2024-28247 Filed 12-2-24; 8:45 am]

**BILLING CODE 6717-01-P**

## **DEPARTMENT OF ENERGY**

### **Federal Energy Regulatory Commission**

[Docket No. CD25-1-000]

#### **Black Canyon Hydrokinetic 1, LLC; Notice of Preliminary Determination of a Qualifying Conduit Hydropower Facility and Soliciting Comments and Motions To Intervene**

On November 21, 2024, and supplemented on November 22, 2024, Black Canyon Hydrokinetic 1, LLC, filed a notice of intent to construct a qualifying conduit hydropower facility, pursuant to section 30 of the Federal Power Act (FPA). The proposed Emmett Main Canal Hydro Project would have an installed capacity of 75 kilowatts (kW) and would be located on the Emmett Irrigation District North Side Main Canal near the City of Emmett in Gem County, Idaho.

*Applicant Contact:* Ryan Cook, C T Corporation System, 1555 W Shoreline Dr., Suite 100, Boise, ID 83702, 614-368-9405, [ryan.cook@emrgy.com](mailto:ryan.cook@emrgy.com).

*FERC Contact:* Christopher Chaney, 202-502-6778, [christopher.chaney@ferc.gov](mailto:christopher.chaney@ferc.gov).

*Qualifying Conduit Hydropower Facility Description:* The project would consist of: (1) two 30-kW twin-turbine generating units and one 15-kW twin-turbine generating unit for a total capacity of 75-kW and (2) appurtenant facilities. The proposed project would have an estimated annual generation of approximately 281 megawatt-hours.

A qualifying conduit hydropower facility is one that is determined or deemed to meet all the criteria shown in the table below.

TABLE 1—CRITERIA FOR QUALIFYING CONDUIT HYDROPOWER FACILITY

Statutory provision	Description	Satisfies (Y/N)
FPA 30(a)(3)(A) .....	The conduit the facility uses is a tunnel, canal, pipeline, aqueduct, flume, ditch, or similar manmade water conveyance that is operated for the distribution of water for agricultural, municipal, or industrial consumption and not primarily for the generation of electricity.	Y
FPA 30(a)(3)(C)(i) ....	The facility is constructed, operated, or maintained for the generation of electric power and uses for such generation only the hydroelectric potential of a non-federally owned conduit.	Y
FPA 30(a)(3)(C)(ii) ...	The facility has an installed capacity that does not exceed 40 megawatts .....	Y
FPA 30(a)(3)(C)(iii) ..	On or before August 9, 2013, the facility is not licensed, or exempted from the licensing requirements of Part I of the FPA.	Y

*Preliminary Determination:* The proposed Emmett Main Canal Hydro Project will not alter the primary purpose of the conduit, which is for irrigation. Therefore, based upon the above criteria, Commission staff preliminarily determines that the operation of the project described above satisfies the requirements for a qualifying conduit hydropower facility, which is not required to be licensed or exempted from licensing.

*Comments and Motions to Intervene:* Deadline for filing comments contesting whether the facility meets the qualifying criteria is 30 days from the issuance date of this notice. Deadline for filing motions to intervene is 30 days from the issuance date of this notice.

Anyone may submit comments or a motion to intervene in accordance with the requirements of Rules of Practice and Procedure, 18 CFR 385.210 and 385.214. Any motions to intervene must be received on or before the specified deadline date for the particular proceeding.

*Filing and Service of Responsive Documents:* All filings must (1) bear in all capital letters the “COMMENTS CONTESTING QUALIFICATION FOR A CONDUIT HYDROPOWER FACILITY” or “MOTION TO INTERVENE,” as applicable; (2) state in the heading the name of the applicant and the project number of the application to which the filing responds; (3) state the name, address, and telephone number of the person filing; and (4) otherwise comply with the requirements of sections 385.2001 through 385.2005 of the Commission’s regulations.<sup>1</sup> All comments contesting Commission staff’s preliminary determination that the facility meets the qualifying criteria must set forth their evidentiary basis.

The Commission strongly encourages electronic filing. Please file motions to intervene and comments using the Commission’s eFiling system at <https://www.ferc.gov/docs-filing/efiling.asp>. Commenters can submit brief comments up to 6,000 characters, without prior

registration, using the eComment system at <https://www.ferc.gov/docs-filing/ecomment.asp>. You must include your name and contact information at the end of your comments. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), (866) 208–3676 (toll free), or (202) 502–8659 (TTY). In lieu of electronic filing, you may send a paper copy. Submissions sent via the U.S. Postal Service must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 888 First Street NE, Room 1A, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Debbie-Anne A. Reese, Secretary, Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852. A copy of all other filings in reference to this application must be accompanied by proof of service on all persons listed in the service list prepared by the Commission in this proceeding, in accordance with 18 CFR 385.2010.

*Locations of Notice of Intent:* The Commission provides all interested persons an opportunity to view and/or print the contents of this document via the internet through the Commission’s website at <https://www.ferc.gov/docs-filing/elibrary.asp>. Enter the docket number (*i.e.*, CD25–1) in the docket number field to access the document. You may also register online at <https://www.ferc.gov/docs-filing/esubscription.asp> to be notified via email of new filings and issuances related to this or other pending projects. Copies of the notice of intent can be obtained directly from the applicant. For assistance, call toll-free 1–866–208–3676 or email [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov). For TTY, call (202) 502–8659.

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**  
Secretary.

[FR Doc. 2024–28250 Filed 12–2–24; 8:45 am]

**BILLING CODE 6717–01–P**

**DEPARTMENT OF ENERGY**

**Federal Energy Regulatory Commission**

[Docket No. AD25–4–000]

**Interregional Transfer Capability Study: Strengthening Reliability Through the Energy Transformation; Notice of Request for Comments**

On November 19, 2024, the North American Electric Reliability Corporation (NERC) submitted to the Federal Energy Regulatory Commission (Commission) an Interregional Transfer Capability Study (ITC Study) pursuant to section 322 of the Fiscal Responsibility Act of 2023 (Fiscal Responsibility Act).<sup>1</sup> All interested persons are invited to file comments on this ITC Study no later than 60 days after the date of publication in the **Federal Register**. We request the public to submit comments in the format indicated below.

In June 2023, Congress passed the Fiscal Responsibility Act, which requires the Commission-approved Electric Reliability Organization (*i.e.*, NERC),<sup>2</sup> in consultation with each regional entity and each transmitting utility<sup>3</sup> that has facilities interconnected with a transmitting utility in a neighboring transmission planning region, to conduct a study of total transfer capability<sup>4</sup> between

<sup>1</sup> Fiscal Responsibility Act of 2023, Public Law 118–5, 137 Stat 10, sec. 322 (2023).

<sup>2</sup> Federal Power Act (FPA) section 215 provides that the Commission may certify an Electric Reliability Organization, the purpose of which is to develop mandatory and enforceable Reliability Standards, subject to Commission review and approval. 16 U.S.C. 824o(c). The Commission subsequently certified NERC as the Electric Reliability Organization. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062, *order on reh’g and compliance*, 117 FERC ¶ 61,126 (2006), *aff’d sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

<sup>3</sup> Transmitting utility is defined in 16 U.S.C. 796 as “an entity (including an entity described in section 824(f) of [title 16]) that owns, operates, or controls facilities used for the transmission of electric energy—(A) in interstate commerce; (B) for the sale of electric energy at wholesale.”

<sup>4</sup> 18 CFR 37.6(b)(1)(vi) (2024).

<sup>1</sup> 18 CFR 385.2001–2005 (2024).

transmission planning regions. The Fiscal Responsibility Act requires the ITC Study to include:

(1) Current total transfer capability between each pair of neighboring transmission planning regions.

(2) A recommendation of prudent additions to total transfer capability between each pair of neighboring transmission planning regions that would demonstrably strengthen reliability within and among such neighboring transmission planning regions.

(3) Recommendations to meet and maintain total transfer capability together with such recommended prudent additions to total transfer capability between each pair of neighboring transmission planning regions.

The Fiscal Responsibility Act requires NERC to submit the ITC Study to the Commission no later than 18 months after the date of enactment of the Act (*i.e.*, by December 2, 2024). After the ITC Study is submitted to the Commission, the Commission must publish the study for public comment and, no later than 12 months after the end of the public comment period, submit a report on its conclusions to Congress and include recommendations, if any, for statutory changes.<sup>5</sup>

Comments may be filed electronically via the internet.<sup>6</sup> Instructions are available on the Commission's website <https://www.ferc.gov/docs-filing/efiling.asp>. For assistance, please contact FERC Online Support at [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or toll free at 1-866-208-3676, or for TTY, (202) 502-8659. Although the Commission strongly encourages electronic filing, documents may also be paper-filed. To paper-file, submissions sent via the U.S. Postal Service must be addressed to: Federal Energy Regulatory Commission, Office of the Secretary, 888 First Street NE, Washington, DC 20426. Submissions sent via any other carrier must be addressed to: Federal Energy Regulatory Commission, Office of the Secretary, 12225 Wilkins Avenue, Rockville, Maryland 20852.

For more information about this Notice, please contact Jessica L. Cockrell at [jessica.cockrell@ferc.gov](mailto:jessica.cockrell@ferc.gov) or 202-502-8190. For legal information, please contact Gonzalo E. Rodriguez at [gonzalo.rodriguez@ferc.gov](mailto:gonzalo.rodriguez@ferc.gov) or 202-502-8568.

Dated: November 25, 2024.

**Debbie-Anne A. Reese,**

*Secretary.*

[FR Doc. 2024-28251 Filed 12-2-24; 8:45 am]

**BILLING CODE 6717-01-P**

## ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPPT-2021-0254; FRL-9347-07-OCSPP]

### Asbestos Part 2 Supplemental Evaluation Including Legacy Uses and Associated Disposals; Risk Evaluation Under the Toxic Substances Control Act (TSCA); Notice of Availability

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** The Environmental Protection Agency (EPA or Agency) is announcing the availability of the final supplemental risk evaluation under the Toxic Substances Control Act (TSCA) for asbestos Part 2: addressing legacy uses and associated disposal. The purpose of risk evaluations under TSCA is to determine whether a chemical substance presents an unreasonable risk of injury to health or the environment, without consideration of costs or non-risk factors, including unreasonable risk to potentially exposed or susceptible subpopulations identified as relevant to the risk evaluation by EPA, under the conditions of use. For the part 2 supplemental risk evaluation, the Agency evaluated legacy uses and associated disposals of asbestos including chrysotile asbestos, five additional fiber types, conditions of use for asbestos-containing talc that are subject to TSCA, and Libby asbestos. EPA used the best available science to prepare this final supplemental risk evaluation and determined, based on the weight of scientific evidence, that asbestos poses unreasonable risk to human health. Under TSCA, EPA must initiate risk management actions to address the unreasonable risk.

**ADDRESSES:** The docket for this action, identified by docket identification (ID) number EPA-EPA-HQ-OPPT-2021-0254, is available online at <https://www.regulations.gov>. Additional information about dockets generally, along with instructions for visiting the docket in-person, is available at <https://www.epa.gov/dockets>.

#### FOR FURTHER INFORMATION CONTACT:

For technical information: Peter Gimlin, Existing Chemicals Risk Management Division (7404M), Office of Pollution Prevention and Toxics,

Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460-0001; telephone number: (202) 566-0515; email address: [gimlin.peter@epa.gov](mailto:gimlin.peter@epa.gov).

For general information: The TSCA-Hotline, ABVI-Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554-1404; email address: [TSCA-Hotline@epa.gov](mailto:TSCA-Hotline@epa.gov).

#### SUPPLEMENTARY INFORMATION:

##### I. Executive Summary

###### A. Does this action apply to me?

This action is directed to the public in general and may be of particular interest to those involved in the manufacture, processing, distribution, use, and disposal of asbestos-containing materials (ACMs), including construction professionals and individuals completing do-it-yourself (DIY) activities in buildings with ACMs, related industry trade organizations, non-governmental organizations with an interest in human and environmental health, state and local governments, Tribal Nations, and/or those interested in the assessment of risks involving chemical substances and mixtures regulated under TSCA. As such, the Agency has not attempted to describe all the specific entities that this action might apply to. If you need help determining applicability, consult the technical contact listed under **FOR FURTHER INFORMATION CONTACT**.

###### B. What is the Agency's authority for taking this action?

TSCA section 6, 15 U.S.C. 2605, requires the Agency to conduct risk evaluations on chemical substances and identifies the minimum components EPA must include in all chemical substance risk evaluations. Each risk evaluation must be conducted consistent with the best available science, be based on the weight of scientific evidence, and consider reasonably available information per 15 U.S.C. 2625(h), (i), and (k). See also the implementing procedural regulations at 40 CFR part 702.

###### C. What action is the Agency taking?

EPA is announcing the availability of the final supplemental risk evaluation for asbestos legacy uses and associated disposals of Asbestos (also referred to as the Asbestos Part 2 Risk Evaluation) (Ref. 1). The purpose of risk evaluations under TSCA is to determine whether a chemical substance presents an unreasonable risk of injury to health or the environment, without consideration of costs or non-risk factors, including unreasonable risk to potentially exposed

<sup>5</sup> Fiscal Responsibility Act of 2023, Public Law 118-5, 137 Stat 10, sec. 322 (2023).

<sup>6</sup> See 18 CFR 385.2001(a)(1)(iii) (2024).

or susceptible subpopulations identified as relevant to the risk evaluation by EPA, under the conditions of use. The Agency has used the best available science to prepare this final risk evaluation and based on the weight of scientific evidence, determined that asbestos poses unreasonable risk to human health. Upon a determination of unreasonable risk, EPA must initiate risk management action as required pursuant to 15 U.S.C. 2605(a) to address the unreasonable risk.

## II. Background

When EPA designated asbestos as one of the first 10 existing chemicals to undergo risk evaluation under TSCA (Ref. 1), the risk evaluation focused on chrysotile asbestos, which is the only type of asbestos fiber where manufacture (including import), processing, and distribution in commerce for use was known, intended, or reasonably foreseen in the U.S. In *Safer Chemicals, Healthy Families v. EPA*, 943 F.3d 397 (9th Cir. 2019) the court held that EPA's Risk Evaluation Procedural Rule (82 FR 33726, July 20, 2017 (FRL-9964-38)) should not have excluded "legacy uses" (*i.e.*, uses without ongoing or prospective manufacturing, processing, or distribution) and "associated disposals" (*i.e.*, future disposal of legacy uses) from the definition of conditions of use. As a result, the risk evaluation for asbestos was split into two parts.

1. *Asbestos (Part 1: Chrysotile Asbestos)*. (Ref. 2) The final risk evaluation for Asbestos (Part 1: Chrysotile Asbestos) was released in January 2021 (86 FR 89, January 4, 2021; FRL-10017-43), covering all intended, known, or reasonably foreseen import, processing, and distribution of chrysotile asbestos; uses of chrysotile asbestos that have been imported, processed, and distributed; and disposal of such chrysotile asbestos uses. The final rule to address the unreasonable risk identified in the Asbestos Part 1 Risk Evaluation was issued in March 2024 (89 FR 21970, March 28, 2024; FRL-8332-01-OCSPP).

2. *Asbestos Part 2: Supplemental Evaluation Including Legacy Uses and Associated Disposals of Asbestos*. (Ref. 3) Legacy uses and associated disposals of chrysotile asbestos, five additional fiber types, conditions of use for asbestos-containing talc that are subject to TSCA, and Libby asbestos are the subject of the Asbestos Part 2 Risk Evaluation, which is scheduled to be finalized on or before December 1, 2024, per the consent decree in the case *Asbestos Disease Awareness*

*Organization et al. v. Regan et al.*, 4:21-cv-03716 (N.D. Cal.).

In the Asbestos Part 2 Risk Evaluation, EPA concludes that asbestos, as a chemical substance and as evaluated in parts 1 and 2 of the risk evaluation process under TSCA, presents an unreasonable risk of injury to health under its conditions of use. This single unreasonable risk determination for asbestos replaces the previous unreasonable risk determinations made for asbestos by individual conditions of use and supersedes the determination (and withdraws the associated order) of no unreasonable risk for the conditions of use identified in the TSCA section 6(i)(1) order in Section 5.3.1 of the December 2020 Risk Evaluation for Asbestos Part I: Chrysotile Asbestos (Ref. 4). This determination does not alter any of the underlying technical or scientific information that informs the risk characterization in part 1, and as such the hazard, exposure, and risk characterization sections of part 1 are not changed by this unreasonable risk determination for asbestos.

The final Asbestos Part 2 Risk Evaluation addresses comments from the public on the draft risk evaluation, as well as from the public comment and letter peer reviewer on the *White Paper: Quantitative Human Health Approach to be Applied in the Risk Evaluation for Asbestos Part 2—Supplemental Evaluation Including Legacy Uses and Associated Disposals of Asbestos* (Ref. 5). The responses to peer review and public comments (Refs. 8 and 9), along with the final Asbestos Part 2 Risk Evaluation (Ref. 1) and a nontechnical summary document (Ref. 6), are available in the docket.

For more information about the TSCA risk evaluation process for existing chemicals, go to <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca>.

## III. Unreasonable Risk Determination

EPA has determined that a single risk determination on the chemical substance asbestos is appropriate in order to protect health and the environment, because there are benchmark exceedances for multiple conditions of use (spanning across most aspects of the chemical life cycle, from manufacturing [including import], processing, industrial, commercial and consumer use, and disposal) for human health. Furthermore, the risk of severe health effects—specifically mesothelioma and lung, ovarian, and laryngeal cancers, along with non-cancer effects—is associated with chronic inhalation exposures of

asbestos. Because these chemical-specific properties cut across the conditions of use within the scope of the risk evaluation and a substantial portion of the conditions of use contribute to the unreasonable risk, it is therefore appropriate for the Agency to determine that the chemical substance presents an unreasonable risk. For those conditions of use assessed in the 2020 *Risk Evaluation for Asbestos, Part 1: Chrysotile Asbestos* (Ref. 4), EPA does not intend to amend, nor does a single risk determination on the chemical substance require, amending the underlying scientific analysis and the risk characterization.

EPA has determined that asbestos presents an unreasonable risk of injury to human health under the conditions of use. The Agency has determined that the unreasonable risk to human health presented by asbestos is due to: (1) Cancer and non-cancer effects in workers, including ONUs and firefighters, from inhalation exposures; (2) Cancer and non-cancer effects in handlers and bystanders from inhalation exposures associated with handling of garments taken home from occupational exposure; (3) Cancer and non-cancer effects in consumers and bystanders from inhalation exposures; and (4) Cancer and non-cancer effects in the general population from inhalation exposures.

Consistent with the statutory requirements of TSCA section 6(a), EPA will propose a risk management regulatory action to the extent necessary so that asbestos no longer presents an unreasonable risk to human health. The Agency expects to focus its risk management action on the conditions of use that significantly contribute to the unreasonable risk identified in the Asbestos Part 2 Risk Evaluation (Ref 3). However, it should be noted that under TSCA section 6(a), EPA is not limited to regulating the specific activities found to drive unreasonable risk and may select from among a suite of risk management requirements in TSCA section 6(a) related to manufacture (including import), processing, distribution in commerce, commercial use, and disposal as part of its regulatory options to address the unreasonable risk. As a general example, EPA may regulate upstream activities (*e.g.*, processing, distribution in commerce) to address downstream activities (*e.g.*, consumer uses) driving unreasonable risk, even if the upstream activities do not drive the unreasonable risk.

TSCA requires EPA to initiate regulatory action to address those risks through risk management measures

enumerated in TSCA section 6(a), 15 U.S.C. 2605(a). The Agency is given a range of risk management options under TSCA—including labeling, recordkeeping or notice requirements, actions to reduce human exposure or environmental release, and a ban of the chemical or of certain uses. EPA will not be revisiting the risk management for the unreasonable risk that was identified in the Asbestos Part 1 Risk Evaluation (Ref. 4) and that was addressed in the final rule that was issued in March 2024 (89 FR 21970, March 28, 2024; FRL–8332–01–OCSPF).

Like the prioritization and risk evaluation processes, there is an opportunity for public comment on any proposed risk management actions.

#### IV. References

The following is a listing of the documents that are specifically referenced in this document. The docket includes these documents and other information considered by EPA, including documents that are referenced within the documents that are included in the docket, even if the referenced document is not physically located in the docket. For assistance in locating these other documents, please consult the person listed under **FOR FURTHER INFORMATION CONTACT**.

1. EPA. High-Priority Substance Designations Under the Toxic Substances Control Act (TSCA) and Initiation of Risk Evaluation on High-Priority Substances; Notice of Availability. **Federal Register**. 84 FR 71924, December 30, 2019 (FRL–10003–15).
2. EPA. Asbestos (Part 1: Chrysotile Asbestos); Final Toxic Substances Control Act (TSCA) Risk Evaluation; Notice of Availability. **Federal Register**. 86 FR 89, January 4, 2021 (FRL–10017–43).
3. EPA. Asbestos Part 2 Supplemental Evaluation Including Legacy Uses and Associated Disposals; Draft Risk Evaluation Under the Toxic Substances Control Act; Notice of Availability, Webinar and Request for Comment. **Federal Register**. 89 FR 26878, April 16, 2023 (FRL–9347–06–OCSPF).
4. EPA. Risk Evaluation for Asbestos, Part 1: Chrysotile Asbestos. December 2020. Office of Chemical Safety and Pollution Prevention. Washington, DC. December 2020. (EPA Document ID No. EPA–HQ–OPPT–2021–0057–0007). <https://www.regulations.gov/document/EPA-HQ-OPPT-2021-0057-0007>.
5. EPA. Letter Peer Review; White Paper: Quantitative Human Health Approach To Be Applied in the Risk Evaluation for Asbestos Part 2; Notice of Availability and Request for Comment. **Federal Register**. 88 FR 51309, August 3, 2023 (FRL–10017–43).
6. EPA. Nontechnical Summary of the TSCA Risk Evaluation for Asbestos (Part 2)

November 2024. (EPA Document ID No. EPA–740–S–24–006).

7. EPA. Asbestos Part 1; Chrysotile Asbestos; Regulation of Certain Conditions of Use Under the Toxic Substances Control Act (TSCA). **Federal Register**. 89 FR 21970, March 28, 2024 (FRL–8332–01–OCSPF).
8. EPA. Draft Comment Summary and Responses for Asbestos Part 2: Supplemental Evaluation Including Legacy Uses and Associated Disposals of Asbestos; Regulation Under the Toxic Substances Control Act. November 2024.
9. EPA. Draft Comment Summary and Responses for Letter Peer Review of White Paper: Quantitative Human Health Approach To Be Applied in the Risk Evaluation for Asbestos Part 2. November 2024.

*Authority:* 15 U.S.C. 2601 *et seq.*

Dated: November 26, 2024.

**Michal Freedhoff,**

*Assistant Administrator, Office of Chemical Safety and Pollution Prevention.*

[FR Doc. 2024–28285 Filed 12–2–24; 8:45 am]

**BILLING CODE 6560–50–P**

#### ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPPT–2024–0425; FRL–12241–02–OCSPF]

#### 1,3-Butadiene; Draft Risk Evaluation Under the Toxic Substances Control Act (TSCA); Science Advisory Committee on Chemicals (SACC) Peer Review; Notice of SACC Meeting, Availability of Draft Documents and Request for Comment

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** The Environmental Protection Agency (EPA or Agency) is announcing the availability of and soliciting public comment on the draft risk evaluation for 1,3-butadiene. The draft risk evaluation was prepared under the Toxic Substances Control Act (TSCA) and will be submitted to the Science Advisory Committee on Chemicals (SACC) for peer review. EPA is also announcing that there will be two virtual public meetings of the SACC: On February 4, 2025, a preparatory meeting for the SACC to consider the scope and clarity of the draft charge questions for the peer review; and on February 25 through 28, 2025, the peer review meeting for the SACC to consider the draft documents and public comments.

**DATES:**

*Preparatory Public Meeting:*

*Meeting date:* February 4, 2025, 1:00 p.m. to approximately 4:00 p.m. (ET).

*Registration:* To request time to present oral comments during the

preparatory meeting, you must register by noon (12:00 p.m. ET) on January 31, 2025. For those not making oral comments, registration will remain open through the end of this meeting on February 4, 2025.

*Comments:* Submit written comments on the scope and clarity of the charge questions, by noon (12:00 p.m. ET) on January 28, 2025. (Submit a written version of your oral comments by noon (12:00 p.m. ET) on January 31, 2025.)

*SACC Peer Review Public Meeting:*  
*Meeting dates:* February 25 through 28, 2025, 10:00 a.m. to approximately 5:00 p.m. (ET).

*Registration:* To request time to present oral comments during the peer review meeting, you must register by noon, February 18, 2025. For those not making oral comments, registration will remain open through the end of this meeting on February 28, 2025.

*Comments:* Submit written comments on the draft documents, and written version of your oral comments, on or before February 3, 2025.

*Special Accommodations:* To allow sufficient time for EPA to process your request for special accommodations before the meeting, please submit the request at least ten business days in advance of the relevant meeting.

**ADDRESSES:**

*Comments:* Submit written comments, identified by docket identification (ID) number EPA–HQ–OPPT–2024–0425, through <https://www.regulations.gov>. Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Additional information on commenting or visiting the docket, along with more information about dockets generally, is available at <https://www.epa.gov/>.

*Meeting Registration:* Online registration will be available beginning in January 2025. Please refer to the SACC website at <https://www.epa.gov/tsc-peer-review>. After registering, you will receive the webcast and streaming service meeting links and audio teleconference information.

*Special accommodation requests:* To request an accommodation for a disability, please contact the Designated Federal Official (DFO) listed under **FOR FURTHER INFORMATION CONTACT**.

**FOR FURTHER INFORMATION CONTACT:**

*Designated Federal Official (DFO):* Alie Muneer, Mission Support Division (7602M), Office of Program Support, Office of Chemical Safety and Pollution Prevention, Environmental Protection Agency; telephone number: (202) 564–

6369 or call the main office number: (202) 564-8450; email address: [muneer.alie@epa.gov](mailto:muneer.alie@epa.gov).

*Technical information:* Brooke Porter, Existing Chemicals Risk Management Division, Office of Pollution Prevention and Toxics, Office of Chemical Safety and Pollution Prevention, Environmental Protection Agency; telephone number: (202) 564-6388; email address: [porter.brooke@epa.gov](mailto:porter.brooke@epa.gov).

#### SUPPLEMENTARY INFORMATION:

### I. Executive Summary

#### A. What action is the Agency taking?

EPA is announcing the availability of and soliciting public comment on the draft risk evaluation for 1,3-butadiene. The draft risk evaluation was prepared under the Toxic Substances Control Act (TSCA) and will be submitted to the Science Advisory Committee on Chemicals (SACC) for peer review. EPA is also announcing that there will be two virtual public meetings of the SACC: On February 4, 2025, a preparatory meeting for the SACC to consider the scope and clarity of the draft charge questions for the peer review; and on February 25 through 28, 2025, the peer review meeting for the SACC to consider the draft risk evaluation and public comments.

This document provides instructions for accessing the materials, submitting written comments, and registering to provide oral comments and attend the public meetings.

#### B. What is the Agency's authority for taking this action?

EPA established the SACC in 2016 in accordance with TSCA, 15 U.S.C. 2625(o), to provide independent advice and expert consultation with respect to the scientific and technical aspects of issues relating to the implementation of TSCA. The SACC operates in accordance with the Federal Advisory Committee Act (FACA), 5 U.S.C. 10, and supports activities under TSCA, 15 U.S.C. 2601 *et seq.*, the Pollution Prevention Act (PPA), 42 U.S.C. 13101 *et seq.*, and other applicable statutes.

#### C. Does this action apply to me?

This action is directed to the public in general and may be of particular interest to those involved in the manufacture, processing, distribution, and disposal of the subject chemical substances, and/or those interested in the assessment of risks involving chemical substances and mixtures regulated under TSCA (including members of at-risk communities, non-governmental organizations (NGOs), federal, state, and local officials). Since

other entities may also be interested, the Agency has not attempted to describe all the specific entities that may be interested.

#### D. What should I consider as I submit my comments to EPA?

1. *Submitting CBI.* Do not submit CBI or other sensitive information to EPA through <https://www.regulations.gov> or email. To include information in your comment that you consider to be CBI or otherwise protected, please contact the DFO listed under **FOR FURTHER INFORMATION CONTACT** to obtain special instructions before submitting that information.

2. *Tips for preparing comments.* When preparing and submitting your comments, see <https://www.epa.gov/dockets/commenting-epa-dockets>. See also the instructions in Unit III.C.

#### E. How can I stay informed about SACC activities?

You may subscribe to the following listserv for alerts regarding this and other SACC-related activities: [https://public.govdelivery.com/accounts/USAEPAOPPPT/subscriber/new?topic\\_id=USAEPAOPPPT\\_101](https://public.govdelivery.com/accounts/USAEPAOPPPT/subscriber/new?topic_id=USAEPAOPPPT_101).

### II. Background

#### A. What is the purpose of the SACC?

The SACC provides independent advice and recommendations to the EPA on the scientific and technical aspects of risk assessments, methodologies, and pollution prevention measures and approaches for chemicals regulated under TSCA. The SACC is composed of experts in toxicology; environmental risk assessment; exposure assessment; and related sciences (e.g., synthetic biology, pharmacology, biotechnology, nanotechnology, biochemistry, biostatistics, physiologically based pharmacokinetic (PBPK) modeling, computational toxicology, epidemiology, environmental fate, and environmental engineering and sustainability). When needed, the SACC committee will be assisted by *ad hoc* reviewers with specific expertise in the topics under consideration.

#### B. Why is EPA conducting these risk evaluations?

TSCA requires EPA to conduct risk evaluations on prioritized chemical substances and allows chemical manufacturers to request an EPA-conducted risk evaluation of a chemical substance (or category of chemical substances) using the procedures established in 40 CFR 702.37. TSCA also identifies the minimum components EPA must include in all chemical substance risk evaluations.

The purpose of conducting risk evaluations is to determine whether a chemical substance presents an unreasonable risk to human health or the environment under the Conditions of Use (COUs). These evaluations include assessing unreasonable risks to relevant potentially exposed or susceptible subpopulations. As part of this process EPA: (1) Integrates hazard and exposure assessments using the best available science that is reasonably available to ensure decisions are based on the weight of the scientific evidence, and (2) Conducts peer review for risk evaluation approaches that have not been previously peer-reviewed.

For more information about the TSCA risk evaluation process for existing chemicals, go to <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca>.

#### C. Why is EPA evaluating this chemical substance?

In 2020, EPA issued final scope documents for the 20 chemical substances designated in December 2019 as High-Priority Substances for the TSCA risk evaluation process, which included 1,3-butadiene. The final scope documents outline the hazards, exposures, conditions of use, and the potentially exposed or susceptible subpopulations the Agency expected to consider in its risk evaluation for the substances (85 FR 55283, September 4, 2020 (FRL-10013-90)).

1,3-Butadiene (CASRN 106-99-0) is a volatile, colorless gas with a total U.S. production volume between 1 and 5 billion pounds. It is produced in petrochemical processing and extracted and further processed as a building block for several polymers and elastomers that do not readily depolymerize. Air is expected to be the major pathway of exposure for 1,3-butadiene in the environment. Although 1,3-butadiene is moderately soluble in water, monitoring data indicate that it is not detected in water. Environmental release data show that more than 98 percent of 1,3-butadiene facility releases are to air. Once in air, 1,3-butadiene will not deposit to land or adsorb to organic matter due to its chemical properties. Long-range transport in air is not expected, in part, because 1,3-butadiene has a short half-life (<8 hours) and will degrade into formaldehyde and acrolein.

Reduced fetal body weight and hematological effects are indicated as the most sensitive and robust non-cancer human health hazards. EPA has classified 1,3-butadiene as a human carcinogen and epidemiology studies have demonstrated an association between 1,3-butadiene exposure and



increased incidence of leukemia in workers.

#### *D. What is the topic of the planned SACC peer review?*

EPA is submitting the draft risk evaluation of 1,3-butadiene and associated supporting documents to the SACC for peer review, along with the public comments received. The draft risk evaluation includes analyses of physical chemical properties, the fate and transport in the environment, releases to the environment, exposure to workers and the general population, including potentially exposed susceptible subpopulations, environmental risk characterization, and human health hazard and risk characterization for workers and the general population.

EPA is focusing its peer review charge on specific scientific areas and analyses. Many of the methods and analyses used in these evaluations are not novel and have been reviewed in the development of previous TSCA assessments. EPA is requesting feedback on approaches, results and calculations associated with the exposure, human health hazard, and environmental hazard analyses. EPA is releasing the draft risk evaluation for public comment and independent, expert peer review. Once EPA receives comment and input from public comment and peer review, revisions will be made, and the Agency will finalize the 1,3-butadiene risk evaluation.

EPA is requesting a focused panel discussion and feedback on novel approaches, unique exposure analyses and other calculations, and selection of key hazard endpoints for 1,3-butadiene:

- No exposure to aquatic and terrestrial species is expected due to the physical and chemical properties of 1,3-butadiene, which is primarily released to air and does not partition, deposit, or persist in or on water or soil. Monitoring data indicate that 1,3-butadiene is not detected in water. Exposure of terrestrial organisms via ambient air will be brief due to the reactive nature of 1,3-butadiene. EPA is seeking comment on the preliminary determination that quantitative risk assessment for ecological taxa is not needed for 1,3-butadiene.

- Reduced fetal body weight (the basis of the acute Reference Concentration (RfC) in the 2002 IRIS Assessment) is observed in both mice and rats following gestational exposure but is not expected to result from a single dose of 1,3-butadiene. Further, EPA did not identify effects of teratogenicity or any other relevant endpoint following single exposures at

doses relevant to human exposure scenarios. Therefore, EPA did not derive an acute point of departure (POD) or quantify risks from acute exposures. EPA is seeking comment on the preliminary determination that there is no appropriate POD to support acute risk estimates.

- Ovarian atrophy is an adverse effect observed only in mice and can be attributed to a specific 1,3-butadiene metabolite (diepoxybutane) that is less prevalent in rats and humans. EPA has evaluated the relevance of ovarian atrophy for assessing human risk and determined that the ovarian atrophy endpoint is not appropriate for extrapolating to human risk due to differences in species-specific metabolites. EPA is proposing to use decreased fetal body weight as the basis for the intermediate and chronic points of departure for 1,3-butadiene. EPA is seeking comment on these preliminary conclusions to establish intermediate and chronic points of departure based on reduced fetal body weight.

- OPPT revised the inhalation unit risk (IUR) for 1,3-butadiene presented in the IRIS 2002 assessment to incorporate updated epidemiological cohort data. EPA is seeking comment on the mathematical approach and new epidemiological cohort data used in the revised IUR. OPPT also derived bladder cancer risk estimates using the same epidemiological cohort and is seeking comment on the appropriate IUR for evaluating cancer risk.

- EPA has conducted a mutagenic mode of action analysis and evaluating whether the use of an age-dependent adjustment factor (ADAF) for leukemia is appropriate. EPA has preliminarily concluded that a mutagenic mode of action is applicable to 1,3-butadiene and use of an age-dependent adjustment factor (ADAF) for leukemia is appropriate. EPA is seeking comment on this analysis and preliminary conclusion.

- The majority of occupational exposure sampling data points, collected from OSHA, NIOSH, and ACC's report, were not quantifiable values but were identified as being below the limit of detection (LOD). For datasets including exposure data that were reported as below the LOD, EPA estimated exposure concentrations, following EPA's *Guidelines for Statistical Analysis of Occupational Exposure Data*. Based on these guidelines, EPA used the LOD value as the high-end estimate and half the LOD as central tendency. EPA is seeking comment on this approach and the relevance of this dataset for risk characterization.

- General population exposure to 1,3-butadiene was modeled using the Human Exposure Model (HEM) to estimate ambient air concentrations based on releases reported to the Toxic Release Inventory (TRI) for years 2016 to 2021. Exposure concentrations were modeled at discrete distances from releasing facilities and surrounding census blocks. EPA is seeking comment on this analysis and preliminary conclusions.

### **III. Public Meeting of the SACC**

#### *A. What is the purpose of the virtual public meeting(s)?*

EPA is planning two virtual public meetings: (1) A preparatory public meeting for the SACC to consider and ask questions regarding the scope and clarity of the draft charge questions; and (2) a public peer review meeting for the SACC to consider and peer review the draft risk evaluation. These public meetings are part of the SACC's peer review of the Agency's methods and novel analyses for the draft risk evaluation of 1,3-butadiene. The agenda for these meetings will be posted in the docket and will also be available through the SACC website.

Recommendations from this SACC review and public comments will be considered in the development of the TSCA risk evaluation and may inform other EPA efforts related to the assessment and regulation of the chemical substance. The Agency will be seeking SACC review of its data analyses and methodologies relevant to human health hazard and exposure analyses that have not been previously peer-reviewed.

#### *B. How can I participate in the virtual public meeting(s)?*

To participate in these virtual public meetings, you must register online to receive the webcast and streaming service meeting links and audio teleconference information for each meeting. Online registration will be available beginning approximately one month prior to the meeting and will remain open through the end of the meeting. To make oral comments during one of these meetings, follow the instructions in this document.

#### *C. How can I access the documents?*

The draft risk evaluation for 1,3-butadiene and related documents, including background documents, related supporting materials, and draft charge questions, are available in the docket. As additional background materials become available, EPA will include those additional background



materials (e.g., SACC members and consultants participating in this meeting and the meeting agenda) in the docket and through links on the SACC website at <https://www.epa.gov/tsca-peer-review>.

#### D. How can I provide comments?

To ensure proper receipt of comments, it is imperative that you identify docket ID No. EPA-HQ-OPPT-2024-0425 in the subject line on the first page of your comments and follow the instructions in this document.

1. *Written comments.* Submit written comments by the deadlines set in the **DATES** section of this document and as described in the **ADDRESSES** section of this document.

2. *Oral comments.* To request time to present oral comments during one of the virtual public meetings, you must register online by the deadlines set in the **DATES** section of this document. Oral comments during the virtual public meetings are limited to 5 minutes. In addition, each speaker should submit a written copy of their oral comments and any supporting materials (e.g., presentation slides) to the DFO prior to the meetings for distribution to the SACC.

#### E. What happens after the SACC meeting(s)?

After the SACC public meeting, the SACC will prepare the meeting minutes and final report document summarizing its recommendations to the EPA, which will also be available in the docket and through the SACC website. EPA will consider the SACC recommendations and public comments to complete the risk evaluation and unreasonable risk determination under TSCA for this chemical substance. Under TSCA, EPA must then initiate risk management actions to address the unreasonable risk it identified.

*Authority:* 15 U.S.C. 2625(o); 5 U.S.C. 10.

Dated: November 26, 2024.

**Michal Freedhoff,**

*Assistant Administrator, Office of Chemical Safety and Pollution Prevention.*

[FR Doc. 2024-28286 Filed 12-2-24; 8:45 am]

**BILLING CODE 6560-50-P**

## ENVIRONMENTAL PROTECTION AGENCY

[EPA-HQ-OPPT-2024-0551; FRL-12418-01-OCSPPT]

### Benzyl Butyl Phthalate (BBP), Dibutyl Phthalate (DBP), Di(2-ethylhexyl) Phthalate (DEHP), Diisobutyl Phthalate (DIBP), and Dicyclohexyl Phthalate (DCHP); Technical Support Documents; Science Advisory Committee on Chemicals (SACC) Peer Review; Request for Nominations of Ad Hoc Reviewers

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice.

**SUMMARY:** The Environmental Protection Agency (EPA or Agency) is seeking public nominations of scientific and technical experts that EPA can consider for service as *ad hoc* reviewers assisting the Science Advisory Committee on Chemicals (SACC) with the peer review of the Agency's technical support documents for benzyl butyl phthalate (BBP), dibutyl phthalate (DBP), di(2-ethylhexyl) phthalate (DEHP), diisobutyl phthalate (DIBP), and dicyclohexyl phthalate (DCHP) and the cross-phthalate technical support documents for human health benchmark dose (BMD) analysis, cancer analysis, and cumulative risk analysis. To facilitate nominations, this document provides information about the SACC, the intended topic for the planned peer review, the expertise sought for this peer review, instructions for submitting nominations to EPA, and the Agency's plan for selecting the *ad hoc* reviewers for this peer review. EPA is planning to convene a virtual public meeting of the SACC in the spring of 2025 to review the technical support documents.

**DATES:** Submit your nominations on or before January 2, 2025.

**ADDRESSES:** Submit your nominations to [SACC@epa.gov](mailto:SACC@epa.gov).

**FOR FURTHER INFORMATION CONTACT:** The Designated Federal Official (DFO) for the SACC is Dr. Alaa Kamel, Mission Support Division (7602M), Office of Program Support, Office of Chemical Safety and Pollution Prevention, Environmental Protection Agency; telephone number: (202) 564-5336 or call the SACC main office at (202) 564-8450; email address: [kamel.alaa@epa.gov](mailto:kamel.alaa@epa.gov).

#### SUPPLEMENTARY INFORMATION:

##### I. General Information

###### A. What action is the Agency taking?

The Agency is seeking public nominations of scientific and technical

experts that EPA can consider for service as *ad hoc* reviewers assisting the SACC with the peer review of the Agency's technical support documents for the evaluation of the risks from BBP, DBP, DEHP, DIBP and DCHP to inform risk management decisions under TSCA. EPA is planning to hold a virtual public meeting in the spring of 2025 for the SACC to consider and review technical support documents. At that time, EPA will solicit comments from the SACC on the critical inputs and novel approaches for a variety of charge questions related to individual, draft chemical risk evaluations and the draft cumulative risk analysis.

To facilitate nominations, this document provides information about the SACC, the intended topic for the planned peer review, the expertise sought for this peer review, instructions for submitting nominations to EPA, and the Agency's plan for selecting the *ad hoc* reviewers for this peer review.

###### B. What is the Agency's authority for taking this action?

TSCA section 6(b) requires that EPA conduct risk evaluations on existing chemical substances and identifies the minimum components EPA must include in all chemical substance risk evaluations (15 U.S.C. 2605(b)). The risk evaluation must not consider costs or other non-risk factors (15 U.S.C. 2605(b)(4)(F)(iii)). The specific risk evaluation process is addressed in 40 CFR part 702 and summarized on EPA's website at <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-evaluations-existing-chemicals-under-tsca>.

The SACC was established by EPA in 2016 in accordance with TSCA, 15 U.S.C. 2625(o), to provide independent advice and expert consultation with respect to the scientific and technical aspects of issues relating to the implementation of TSCA. The SACC operates in accordance with the Federal Advisory Committee Act (FACA), 5 U.S.C. 10, and supports activities under TSCA, 15 U.S.C. 2601 *et seq.*, the Pollution Prevention Act (PPA), 42 U.S.C. 13101 *et seq.*, and other applicable statutes.

###### C. Does this action apply to me?

This action is directed to the public in general. This action may, however, be of particular interest to those involved in the manufacture, processing, distribution, and disposal of chemical substances and mixtures, and/or those interested in the assessment of risks involving chemical substances and mixtures regulated under TSCA. Members of at-risk communities, non-

governmental organizations (NGOs) (particularly those with an interest in protecting health for at-risk communities), and Federal, State and local officials may also be interested. Since other entities may also be interested, the Agency has not attempted to describe all the specific entities to which this action may apply.

#### D. How can I stay informed about SACC activities?

You may subscribe to the following listserv for alerts regarding this and other SACC-related activities: [https://public.govdelivery.com/accounts/USAEPAPPT/subscriber/new?topic\\_id=USAEPAPPT\\_101](https://public.govdelivery.com/accounts/USAEPAPPT/subscriber/new?topic_id=USAEPAPPT_101).

## II. Background

### A. What is the purpose of the SACC?

The SACC provides independent advice and recommendations to the EPA on the scientific and technical aspects of risk assessments, methodologies, and pollution prevention measures and approaches for chemicals regulated under TSCA. The SACC is comprised of experts in toxicology; environmental risk assessment; exposure assessment; and related sciences (e.g., synthetic biology, pharmacology, biotechnology, nanotechnology, biochemistry, biostatistics, physiologically based pharmacokinetic (PBPK) modeling, computational toxicology, epidemiology, environmental fate, environmental engineering and sustainability). The SACC currently consists of 20 members. When needed, the committee will be assisted by *ad hoc* reviewers with specific expertise in the topics under consideration.

### B. Why is EPA conducting these risk evaluations?

TSCA requires EPA to conduct risk evaluations on high-priority chemical substances and identifies the minimum components EPA must include in all chemical substance risk evaluations. The purpose of conducting risk evaluations is to determine whether a chemical substance presents an unreasonable risk to human health or the environment under the Conditions of Use (COUs). These evaluations include assessing unreasonable risks to relevant potentially exposed or susceptible subpopulations. As part of this process, EPA: (1) Integrates hazard and exposure assessments using the best available science that is reasonably available to assure decisions are based on the weight of the scientific evidence, and (2) Conducts peer review for risk evaluation approaches that have not been previously peer reviewed. For

more information about the three stages of EPA's process for ensuring the safety of existing chemicals (i.e., prioritization, risk evaluation, and risk management), go to <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/how-epa-evaluates-safety-existing-chemicals>.

### C. Why did EPA develop these documents?

EPA designated the following chemicals as High-Priority Substances for risk evaluation under TSCA in December 2019: BBP (Butyl Benzyl Phthalate, CASRN 85–68–7), DBP (Dibutyl Phthalate, CASRN 84–74–2), DEHP (Di(2-ethylhexyl) Phthalate, CASRN 117–81–7), DIBP (Diisobutyl Phthalate, CASRN 84–69–5), and DCHP (Dicyclohexyl Phthalate, CASRN 84–61–7). For these chemicals, EPA published draft and final scope documents in April and August 2020, respectively and, is currently in the risk evaluation process. The scope documents outlined the hazards, exposures, conditions of use, and the potentially exposed or susceptible subpopulations the Agency expected to consider in its risk evaluations. Although there are some differences in conditions of use and exposures, these chemical substances are primarily used as plasticizers in polyvinyl chloride (PVC) products and in adhesives, sealants, paints, coatings, rubbers, and other applications. Because of the significant similarities in exposure and physical chemical properties of these phthalates, EPA is developing these risk evaluations and the cumulative risk assessment in parallel. DIDP and DINP were reviewed previously by the SACC (July 30–August 1, 2024); the draft risk evaluations for BBP, DBP, DEHP, DIBP and DCHP are incorporating many of the SACC recommendations from this previous peer review.

EPA is soliciting comments from the SACC on a variety of charge questions related to the data, methods, models, approaches for these draft chemical risk evaluations, including the supporting draft cumulative risk assessment analysis. Many of the methods and analyses used in these evaluations are not novel and have been reviewed in the development of the tools used in various agency work products or in previous TSCA assessments. EPA is focusing peer review on the critical inputs and novel approaches.

The draft risk evaluations for BBP, DBP, DEHP, DIBP and DCHP include analyses of physical chemical properties, fate and transport in the environment, exposure to workers, consumers and general population

including potentially exposed susceptible subpopulations, releases to the environment, environmental hazard and risk characterization for terrestrial and aquatic species, and human health hazard and risk characterization for workers, consumers, and the general population. The draft cumulative risk assessment analysis was developed based on the Proposed Approach for Cumulative Risk Assessment under TSCA including recommendations from the May 2023 SACC review. Specifically, the cumulative risk assessment analysis technical support document calculates relative potency factors for phthalate syndrome for each of the six chemical substances based on a pooled dataset for assessing fetal testicular testosterone health endpoint and estimates cumulative non-attributable exposures from NHANES urinary biomonitoring data.

### D. What is the topic of the planned SACC peer review?

EPA anticipates soliciting peer review from the SACC on the following draft documents:

- Physical and chemical and environmental fate technical support documents for BBP, DBP, DEHP, DIBP and DCHP.
- Ecological hazard technical support documents for BBP, DBP, DEHP, DIBP and DCHP.
- Non-cancer human health hazard technical support documents for BBP, DBP, DEHP, DIBP and DCHP.
- Cancer technical support document (a single document that includes BBP, DBP, DEHP, DIBP and DCHP).
- Environmental Releases and Occupational Exposure technical support documents for BBP, DBP, DEHP, DIBP and DCHP.
- Environmental and General Population Exposures to Environmental Releases technical support documents for BBP, DBP, DEHP, DIBP and DCHP.
- Consumer and Indoor Air Exposure technical support documents for BBP, DBP, DEHP, DIBP and DCHP.
- Meta-analysis and benchmark dose technical support document developed for the draft cumulative risk assessment.
- Technical support document for the Cumulative Risk Analysis of Di(2-ethylhexyl) Phthalate (DEHP), Dibutyl Phthalate (DBP), Butyl Benzyl Phthalate (BBP), Diisobutyl Phthalate (DIBP), Dicyclohexyl Phthalate (DCHP), and Diisononyl Phthalate (DINP) under TSCA.
- Aspects of the risk evaluation for DCHP, including risk characterization and application of the cumulative risk analysis.

EPA expects to solicit feedback on the following scientific issues:

- *Physical-chemical properties and environmental fate technical support documents.* EPA expects to solicit feedback on the data and methods used to characterize physical-chemical properties and environmental fate of BBP, DBP, DEHP, DIBP and DCHP. Of particular importance are the n-octanol/water partition coefficients ( $K_{ow}$ ), organic carbon-water partition coefficients ( $K_{oc}$ ), n-octanol/air partition coefficients ( $K_{oa}$ ), bioaccumulation factors (BAF), and bioconcentration factors (BCF). For DCHP specifically, EPA expects to solicit specific feedback on the weight of the scientific evidence approach to describe the water solubility range for DCHP and the use of a single value as input to exposure models.

- *Ecological hazard technical support documents.* EPA expects to solicit feedback on the data and methods used to characterize ecological hazards of BBP, DBP, DEHP, DIBP and DCHP.

- *Non-cancer human health hazard technical support documents.* EPA expects to solicit feedback on multiple scientific areas including the selection of non-cancer points of departure used to characterize non-cancer risks from acute, intermediate, and chronic durations for BBP, DBP, DEHP, DIBP and DCHP. For DEHP there are additional hazards for which EPA will solicit input; specifically, female reproductive tract, inhalation, and glucose homeostasis/lipid metabolism.

- *Cancer hazard technical support document.* EPA has developed a single document evaluating cancer hazard potential for these phthalates. EPA expects to solicit feedback on the following: draft cancer classifications for DEHP, BBP, and DBP; tumor triad (liver, pancreatic, and testicular tumors) and PPAR $\alpha$  mode of action information relevant to DEHP; and the application of Rethinking Carcinogenicity Assessment for Agrochemicals Project (ReCAAP) weight of evidence framework for DCHP and DIBP.

- *Meta-analysis and benchmark dose modeling technical support document and the cumulative risk assessment technical support documents.* EPA expects to solicit input on the methods and data used to calculate background exposure levels from the NHANES data set, derive relative potency factors, index chemical selection, and methods and application of background exposures. The draft risk evaluation of DCHP will contain an example of the application of cumulative risk assessment analysis for an individual chemical. EPA anticipates requesting

input on the integration of the cumulative approaches within the individual chemical risk characterization.

- *Technical support documents for environmental and general population, consumer and indoor air, and occupational exposures.* EPA expects to request feedback and guidance on the data and methods used in the draft exposure assessments. Included in this request for input will be issues related to dermal absorption, such as the interpretation of *in vitro* and *in vivo* studies and the use of flux-based calculations for occupational exposures. Of specific importance are the data and methods used to calculate dermal absorption and exposures in the occupational exposure and the consumer and indoor air exposure technical support documents.

Given the large volume of material across the five HPS phthalates, EPA will be releasing chemical-specific technical support documents in batches ahead of the draft risk evaluations. The formal 60-day public comment period for each chemical risk evaluation will begin when the Agency publishes a notice of availability in the **Federal Register** and the chemical's full risk evaluation, including the risk characterization and risk determination, are posted to the chemical specific docket. Most immediately, the Agency anticipates that the DCHP risk evaluation, and its associated supporting documents, is expected to be released to the public at the end of December, and a notice of availability will begin the public comment period for the DCHP draft risk evaluation. Over the next several months, EPA expects to release all the technical support documents for BBP, DBP, DEHP, and DIBP into their respective chemical specific dockets as they are available, and their dockets will be open for submission of comments. Nonetheless, these TSDs will be formally available for a 60-day public comment period with the release of each chemical risk evaluation to follow.

In the first quarter of 2025, OPPT will publish a notice of availability in the **Federal Register** for the draft charge questions and to begin an additional public comment period in this docket (EPA-HQ-OPPT-2024-0551) specifically for the peer review by the SACC. At that time, all of the risk evaluation documents (*e.g.*, technical support documents, supplemental files, etc.) relevant to peer review will also be made available in this docket for a targeted peer review. EPA anticipates requesting SACC peer review of the questions pertaining to critical inputs and novel approaches contained in

these documents to constitute full peer review of the phthalate risk evaluations. The SACC peer review will be focused on the DCHP risk evaluation and associated supporting documents, and the technical support documents that describe the data and analyses of physical chemistry and fate, hazards, exposures, and releases for BBP, DBP, DEHP, and DIBP.

In total, EPA anticipates six opportunities for public comment; five dockets and comment periods associated with each chemical (BBP, DBP, DEHP, DIBP and DCHP) and one docket focused on the SACC peer review.

### III. Nominations for ad hoc Reviewers

#### A. Why is EPA seeking nominations for ad hoc reviewers?

As part of a broader process for developing a pool of candidates for SACC peer reviews, EPA is asking the public and stakeholders for nominations of scientific and technical experts that EPA can consider as prospective candidates for service as *ad hoc* reviewers assisting the SACC with the peer reviews. Any interested person or organization may nominate qualified individuals for consideration as prospective candidates for this review by following the instructions provided in this document. Individuals may also self-nominate.

Those who are selected from the pool of prospective candidates will be invited to attend the public meeting and to participate in the discussion of key issues and assumptions at the meeting. In addition, they will be asked to review and to help finalize the meeting minutes and final report.

#### B. What expertise is sought for this peer review?

Individuals nominated for this SACC peer review should have expertise in one or more of the following areas: Physical and chemical properties of phthalates including water solubility, bioconcentration and bioaccumulation, analytical chemistry, modeling and field derived data; Ecological hazard identification including general ecological hazard identification and use of read-across and new alternative methods; Environmental releases including methods for modeling and considerations for use of monitoring data; General population exposure including use of screening methods and refinements; Occupational exposure including dermal exposure modeling with consideration of empirical absorption data; Consumer exposure and indoor air exposure including

modeling data selection and interpretation and use of monitoring data; Human health toxicology including inhalation hazard, glucose metabolism, liver toxicity, phthalate syndrome, mode of action for cancer and non-cancer, benchmark dose modeling and dose response analysis; Cumulative and mixtures risk assessment for human health including index chemical selection and relative potency factor derivations; Biostatistics including analysis of NHANES biomonitoring data and derivation of occupational exposure limits; Epidemiology related to individual chemicals and phthalate mixtures for use in risk assessments.

Nominees should be scientists who have sufficient professional qualifications, including training and experience, to be capable of providing expert comments on the scientific issues for this review.

#### C. How do I make a nomination?

Submit your nomination as directed under **ADDRESSES** by the deadline indicated under **DATES**. Each nomination should include the following information: Contact information for the person making the nomination; name, affiliation, and contact information for the nominee; and the disciplinary and specific areas of expertise of the nominee.

Do not submit confidential business information (CBI) or other sensitive information to EPA through email. If your nomination contains any information that you consider to be CBI or otherwise protected, please contact the DFO listed under **FOR FURTHER INFORMATION CONTACT** to obtain special instructions before submitting that information.

#### D. Will *ad hoc* reviewers be subjected to an ethics review?

SACC members and *ad hoc* reviewers are subject to the provisions of the Standards of Ethical Conduct for Employees of the Executive Branch at 5 CFR part 2635, conflict of interest statutes in Title 18 of the United States Code and related regulations. In anticipation of this requirement, prospective candidates for service on the SACC will be asked to submit confidential financial information which shall fully disclose, among other financial interests, the candidate's employment, stocks, and bonds, and where applicable, sources of research support. EPA will evaluate the candidates' financial disclosure forms to assess whether there are financial conflicts of interest, appearance of a loss of impartiality, or any prior involvement

with the development of the documents under consideration (including previous scientific peer review) before the candidate is considered further for service on the SACC. Selected candidates are required to complete an ethics training prior to conducting their reviews.

#### E. How will EPA select the *ad hoc* reviewers?

The selection of scientists to serve as *ad hoc* reviewers for the SACC is based on the function of the Committee and the expertise needed to address the Agency's charge to the Committee. No interested scientists shall be ineligible to serve by reason of their membership on any other advisory committee to a federal department or agency or their employment by a federal department or agency, except EPA. Other factors considered during the selection process include availability of the prospective candidate to fully participate in the Committee's reviews, ability to be hired as an EPA Special Government Employee (SGE), absence of any conflicts of interest or appearance of loss of impartiality, independence with respect to the matters under review, and lack of bias. Although financial conflicts of interest, the appearance of loss of impartiality, lack of independence, and bias may result in non-selection, the absence of such concerns does not assure that a candidate will be selected to serve on the SACC.

Numerous qualified candidates are often identified for SACC reviews. Therefore, selection decisions involve carefully weighing several factors including the candidates' areas of expertise and professional qualifications and achieving an overall balance of different scientific perspectives across reviewers. The Agency will consider all nominations of prospective candidates for service as *ad hoc* reviewers for the SACC that are received by the deadline listed under **DATES**. However, the final selection of *ad hoc* reviewers is a discretionary function of the Agency.

EPA anticipates selecting approximately ten (10) *ad hoc* reviewers to assist the SACC in their review of the designated topic. EPA plans to make a list of candidates under consideration as prospective *ad hoc* reviewers for this review available for public comment by the winter of 2025. The list will be available in the docket at <https://www.regulations.gov> (docket ID No. EPA-HQ-OPPT-2024-0551) and through the SACC website at <https://www.epa.gov/tsca-peer-review>.

Authority: 15 U.S.C. 2625(o); 5 U.S.C. 10.

Dated: November 26, 2024.

**Michal Freedhoff,**

Assistant Administrator, Office of Chemical Safety and Pollution Prevention.

[FR Doc. 2024-28287 Filed 12-2-24; 8:45 am]

**BILLING CODE 6560-50-P**

## FEDERAL COMMUNICATIONS COMMISSION

[OMB 3060-0748; FR ID 263023]

### Information Collection Being Reviewed by the Federal Communications Commission

**AGENCY:** Federal Communications Commission.

**ACTION:** Notice and request for comments.

**SUMMARY:** As part of its continuing effort to reduce paperwork burdens, and as required by the Paperwork Reduction Act (PRA) of 1995, the Federal Communications Commission (FCC or Commission) invites the general public and other Federal agencies to take this opportunity to comment on the following information collections. Comments are requested concerning: whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; the accuracy of the Commission's burden estimate; ways to enhance the quality, utility, and clarity of the information collected; ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and ways to further reduce the information collection burden on small business concerns with fewer than 25 employees. The FCC may not conduct or sponsor a collection of information unless it displays a currently valid OMB control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the PRA that does not display a valid OMB control number.

**DATES:** Written PRA comments should be submitted on or before February 3, 2025. If you anticipate that you will be submitting comments but find it difficult to do so within the period of time allowed by this notice, you should advise the contact listed below as soon as possible.

**ADDRESSES:** Direct all PRA comments to Cathy Williams, FCC, via email to [PRA@fcc.gov](mailto:PRA@fcc.gov) and to [Cathy.Williams@fcc.gov](mailto:Cathy.Williams@fcc.gov).

**FOR FURTHER INFORMATION CONTACT:** For additional information about the information collection, contact Cathy Williams at (202) 418–2918.

**SUPPLEMENTARY INFORMATION:**

*OMB Control Number:* 3060–0748.

*Title:* Section 64.104, 64.1509, 64.1510 Pay-Per-Call and Other Information Services.

*Form Number:* N/A.

*Type of Review:* Extension of a currently approved collection.

*Respondents:* Business or other for-profit entities.

*Number of Respondents and Responses:* 5,125 respondents; 5,175 responses.

*Estimated Time per Response:* 2 to 260 hours.

*Frequency of Response:* Annual and on occasion reporting and recordkeeping requirements; Third party disclosure requirement.

*Obligation to Respond:* Required to obtain or retain benefits. The statutory authority(s) for the information collection is found at 47 U.S.C. 228(c)(7)–(10); Public Law 192–556, 106 Stat. 4181 (1992), codified at 47 U.S.C. 228 (The Telephone Disclosure and Dispute Resolution Act of 1992).

*Total Annual Burden:* 47,750 hours.

*Total Annual Cost:* None.

*Needs and Uses:* Regulations at 47 CFR 64.1504 of the Commission's rules incorporate the requirements of sections 228(c)(7)–(10) of the Communications Act restricting the manner in which toll-free numbers may be used to charge telephone subscribers for information services. Common carriers may not charge a calling party for information conveyed on a toll-free number call, unless the calling party: (1) has executed a written agreement that specifies the material terms and conditions under which the information is provided, or (2) pays for the information by means of a prepaid account, credit, debit, charge, or calling card and the information service provider gives the calling party an introductory message disclosing the cost and other terms and conditions for the service. The disclosure requirements are intended to ensure that consumers know when charges will be levied for calls to toll-free numbers and are able to obtain information necessary to make informed choices about whether to purchase toll-free information services. Regulations at 47 CFR 64.1509 of the Commission rules incorporate the requirements of 47 U.S.C. (c)(2) and 228 (d)(2)–(3) of the Communications Act. Common carriers that assign telephone numbers to pay-per-call services must disclose to all interested parties, upon

request, a list of all assigned pay-per-call numbers. For each assigned number, carriers must also make available: (1) a description of the pay-per-call services; (2) the total cost per minute or other fees associated with the service; and (3) the service provider's name, business address, and telephone number. In addition, carriers handling pay-per-call services must establish a toll-free number that consumers may call to receive information about pay-per-call services. Finally, the Commission requires carriers to provide statements of pay-per-call rights and responsibilities to new telephone subscribers at the time service is established and, although not required by statute, to all subscribers annually.

Under 47 CFR 64.1510 of the Commission's rules, telephone bills containing charges for interstate pay-per-call and other information services must include information detailing consumers' rights and responsibilities with respect to these charges. Specifically, telephone bills carrying pay-per-call charges must include a consumer notification stating that: (1) the charges are for non-communication services; (2) local and long distance telephone services may not be disconnected for failure to pay per-call charges; (3) pay-per-call (900 number) blocking is available upon request; and (4) access to pay-per-call services may be involuntarily blocked for failure to pay per-call charges. In addition, each call billed must show the type of services, the amount of the charge, and the date, time, and duration of the call. Finally, the bill must display a toll-free number which subscribers may call to obtain information about pay-per-call services. Similar billing disclosure requirements apply to charges for information services either billed to subscribers on a collect basis or accessed by subscribers through a toll-free number. The billing disclosure requirements are intended to ensure that telephone subscribers billed for pay-per-call or other information services can understand the charges levied and are informed of their rights and responsibilities with respect to payment of such charges.

Federal Communications Commission.

**Marlene Dortch,**

*Secretary, Office of the Secretary.*

[FR Doc. 2024–27547 Filed 12–2–24; 8:45 am]

**BILLING CODE 6712–01–P**

**DEPARTMENT OF THE TREASURY**

**Office of the Comptroller of the Currency**

**FEDERAL RESERVE SYSTEM**

**FEDERAL DEPOSIT INSURANCE CORPORATION**

**Joint Report to Congressional Committees: Differences in Accounting and Capital Standards Among the Federal Banking Agencies as of September 30, 2024**

**AGENCY:** Office of the Comptroller of the Currency, Treasury; Board of Governors of the Federal Reserve System; and Federal Deposit Insurance Corporation.

**ACTION:** Report to congressional committees.

**SUMMARY:** The Office of the Comptroller of the Currency (OCC), the Board of Governors of the Federal Reserve System (Board), and the Federal Deposit Insurance Corporation (FDIC) (collectively, the agencies) have prepared this report pursuant to section 37(c) of the Federal Deposit Insurance Act. Section 37(c) requires the agencies to jointly submit an annual report to the Committee on Financial Services of the U.S. House of Representatives and to the Committee on Banking, Housing, and Urban Affairs of the U.S. Senate describing differences among the accounting and capital standards used by the agencies for insured depository institutions (institutions). Section 37(c) requires that this report be published in the **Federal Register**. The agencies have not identified any material differences among the agencies' accounting and capital standards applicable to the institutions they regulate and supervise.

**FOR FURTHER INFORMATION CONTACT:**

*OCC:* Joshua Kuntz, Risk Expert, Capital Policy, (202) 649–5074, Carl Kaminski, Assistant Director, Chief Counsel's Office, (202) 649–5869, Office of the Comptroller of the Currency, 400 7th Street SW, Washington, DC 20219. If you are deaf, hard of hearing, or have a speech disability, please dial 7–1–1 to access telecommunications relay services.

*Board:* Andrew Willis, Manager, (202) 912–4323, Daniel Schwindt, Financial Institution Policy Analyst III, (202) 960–5463, Division of Supervision and Regulation, Mark Buresh, Senior Special Counsel (202) 452–5270 and Jasmin Keskinen, Senior Attorney, (202) 475–6650, Legal Division, Board of Governors of the Federal Reserve System, 20th Street and Constitution Avenue NW, Washington, DC 20551.

For users of Telecommunications Device for the Deaf (TDD) and TTY-TRS, please call 711 from any telephone, anywhere in the United States.

*FDIC:* Benedetto Bosco, Chief, Capital Policy Section, (703) 245-0778, Christine Bouvier, Assistant Chief Accountant, (202) 898-7289, Richard Smith, Capital Policy Analyst, Capital Policy Section, (703) 254-0782, Division of Risk Management Supervision, Merritt Pardini, Counsel, (202) 898-6680, Legal Division, Federal Deposit Insurance Corporation, 550 17th Street NW, Washington, DC 20429.

**SUPPLEMENTARY INFORMATION:** *The text of the report follows:*

## Report to Congress

### Report to the Committee on Financial Services of the U.S. House of Representatives and to the Committee on Banking, Housing, and Urban Affairs of the U.S. Senate Regarding Differences in Accounting and Capital Standards Among the Federal Banking Agencies

#### Introduction

In accordance with section 37(c),<sup>1</sup> the agencies are submitting this joint report, which covers differences among their accounting and capital standards existing as of September 30, 2024, applicable to institutions.<sup>2</sup> As of September 30, 2024, the agencies have not identified any material differences among the agencies' accounting standards applicable to institutions.

In 2013, the agencies revised the risk-based and leverage capital rule for institutions (capital rule),<sup>3</sup> which harmonized the agencies' capital rule in a comprehensive manner.<sup>4</sup> Since 2013, the agencies have revised the capital

rule on several occasions, further reducing the number of differences in the agencies' capital rule. Today, only a few differences remain, which are statutorily mandated for certain categories of institutions, or which reflect certain technical, generally nonmaterial differences among the agencies' capital rule. No new material differences were identified in the capital standards applicable to institutions in this report compared to the previous report submitted by the agencies pursuant to section 37(c).

### Differences in the Standards Among the Federal Banking Agencies

#### *Differences in Accounting Standards*

As of September 30, 2024, the agencies have not identified any material differences among themselves in the accounting standards applicable to institutions.

#### *Differences in Capital Standards*

The following are the remaining technical differences among the capital standards of the agencies' capital rule.<sup>5</sup>

#### Definitions

The agencies' capital rule largely contains the same definitions.<sup>6</sup> The differences that exist generally serve to accommodate the different needs of the institutions that each agency charters, regulates, and/or supervises.

The agencies' capital rule has differing definitions of a pre-sold construction loan. The capital rule of all three agencies provides that a pre-sold construction loan means any "one-to-four family residential construction loan to a builder that meets the requirements of section 618(a)(1) or (2) of the Resolution Trust Corporation Refinancing, Restructuring, and Improvement Act of 1991 (12 U.S.C. 1831n), and, in addition to other criteria, the purchaser has not terminated the contract."<sup>7</sup> The Board's definition provides further clarification that, if a purchaser has terminated the contract, the institution must immediately apply a 100 percent risk weight to the loan and report the revised risk weight in the next quarterly Consolidated Reports of Condition and Income (Call Report).<sup>8</sup> Similarly, if the purchaser has terminated the contract, the OCC and FDIC capital rule would immediately disqualify the loan from

receiving a 50 percent risk weight, and would apply a 100 percent risk weight to the loan. The change in risk weight would be reflected in the next quarterly Call Report. Thus, the minor wording difference between the agencies should have no practical consequence.

### Capital Components and Eligibility Criteria for Regulatory Capital Instruments

While the capital rule generally provides uniform eligibility criteria for regulatory capital instruments, there are some textual differences among the agencies' capital rule. The capital rule of each of the three agencies requires that, for an instrument to qualify as common equity tier 1 or additional tier 1 capital, cash dividend payments be paid out of net income and retained earnings, but the Board's capital rule also allows cash dividend payments to be paid out of related surplus.<sup>9</sup> The provision in the Board's capital rule that allows dividends to be paid out of related surplus is a difference in substance among the agencies' capital rule. However, due to the restrictions on institutions regulated by the Board in separate regulations, this additional language in the Board's rule has a practical impact only on bank holding companies (BHCs) and savings and loan holding companies (SLHCs) and is not a difference as applied to institutions. The agencies apply the criteria for determining eligibility of regulatory capital instruments in a manner that ensures consistent outcomes for institutions.

Both the Board's capital rule and the FDIC's capital rule also include an additional sentence noting that institutions regulated by each agency are subject to restrictions independent of the capital rule on paying dividends out of surplus and/or that would result in a reduction of capital stock.<sup>10</sup> These additional sentences do not create differences in substance between the agencies' capital standards, but rather note that restrictions apply under separate regulations.

In addition, the Board's capital rule includes a requirement that a Board-regulated institution must obtain prior approval before redeeming regulatory

<sup>9</sup> 12 CFR 217.20(b)(1)(v) and 217.20(c)(1)(viii) (Board).

<sup>10</sup> 12 CFR 217.20(b)(1)(v) and 217.20(c)(1)(viii) (Board); 12 CFR 324.20(b)(1)(v) and 324.20(c)(1)(viii) (FDIC). Although not referenced in the capital rule, the OCC has similar restrictions on dividends; 12 CFR 5.55 and 12 CFR 5.63. Certain restrictions on the payment of dividends that apply under separate regulations, and therefore not discussed in this report, are different among the agencies. Compare 12 CFR 208.5 (Board) and 12 CFR 5.64 (OCC) with 12 CFR 303.241 (FDIC).

<sup>1</sup> 12 U.S.C. 1831n(c)(1) and 12 U.S.C. 1831n(c)(3).

<sup>2</sup> Although not required under section 37(c), this report includes descriptions of certain of the Board's capital standards applicable to depository institution holding companies where such descriptions are relevant to the discussion of capital standards applicable to institutions.

<sup>3</sup> See 78 FR 62018 (October 11, 2013) (final rule issued by the OCC and the Board); 78 FR 55340 (September 10, 2013) (interim final rule issued by the FDIC). The FDIC later issued its final rule in 79 FR 20754 (April 14, 2014). The agencies' respective capital rule is at 12 CFR part 3 (OCC), 12 CFR part 217 (Board), and 12 CFR part 324 (FDIC). The capital rule applies to institutions, as well as to certain bank holding companies (BHCs) and savings and loan holding companies (SLHCs). See also 12 CFR 217.1(c).

<sup>4</sup> The capital rule reflects the scope of each agency's regulatory jurisdiction. For example, the Board's capital rule includes requirements related to BHCs, SLHCs, and state member banks (SMBs), while the FDIC's capital rule includes provisions for state nonmember banks and state savings associations, and the OCC's capital rule includes provisions for national banks and federal savings associations.

<sup>5</sup> Certain minor differences, such as terminology specific to each agency for the institutions that it supervises, are not included in this report.

<sup>6</sup> See 12 CFR 3.2 (OCC); 12 CFR 217.2 (Board); 12 CFR 324.2 (FDIC).

<sup>7</sup> 12 CFR 3.2 (OCC); 12 CFR 217.2 (Board); 12 CFR 324.2 (FDIC).

<sup>8</sup> 12 CFR 217.2.

capital instruments.<sup>11</sup> This requirement effectively applies only to a BHC or an SLHC and is, therefore, not included in the OCC's and FDIC's capital rule. All three agencies require institutions to obtain prior approval before redeeming regulatory capital instruments in other regulations.<sup>12</sup> The additional provision in the Board's capital rule, therefore, only has a practical impact on BHCs and SLHCs and is not a difference as applied to institutions.

#### Capital Deductions

There is a technical difference between the FDIC's capital rule and the OCC's and Board's capital rule with regard to an explicit requirement for deduction of examiner-identified losses. The agencies require their examiners to determine whether their respective supervised institutions have appropriately identified losses. The FDIC's capital rule, however, explicitly requires FDIC-supervised institutions to deduct identified losses from common equity tier 1 capital elements, to the extent that the institutions' common equity tier 1 capital would have been reduced if the appropriate accounting entries had been recorded.<sup>13</sup> Generally, identified losses are those items that an examiner determines to be chargeable against income, capital, or general valuation allowances.

For example, identified losses may include, among other items, assets classified as loss, off-balance-sheet items classified as loss, any expenses that are necessary for the institution to record in order to replenish its general valuation allowances to an adequate level, and estimated losses on contingent liabilities. The Board and the OCC expect their supervised institutions to promptly recognize examiner-identified losses, but the requirement is not explicit under their capital rule. Instead, the Board and the OCC apply their supervisory authorities to ensure that their supervised institutions charge off any identified losses.

#### Subsidiaries of Savings Associations

There are special statutory requirements for the agencies' capital treatment of a savings association's investment in or credit to its subsidiaries as compared with the capital treatment of such transactions between other types of institutions and their subsidiaries. Specifically, the Home Owners' Loan Act (HOLA)

<sup>11</sup> Board-regulated institution refers to an SMB, a BHC, or an SLHC. See 12 CFR 217.2; 12 CFR 217.20(f); see also 12 CFR 217.20(b)(1)(iii).

<sup>12</sup> See 12 CFR 5.46, 5.47, 5.55, and 5.56 (OCC); 12 CFR 208.5 (Board); 12 CFR 303.241 (FDIC).

<sup>13</sup> 12 CFR 324.22(a)(9).

distinguishes between subsidiaries of savings associations engaged in activities that are permissible for national banks and those engaged in activities that are not permissible for national banks.<sup>14</sup>

When subsidiaries of a savings association are engaged in activities that are not permissible for national banks,<sup>15</sup> the parent savings association generally must deduct the parent's investment in and extensions of credit to these subsidiaries from the capital of the parent savings association. If a subsidiary of a savings association engages solely in activities permissible for national banks, no deduction is required, and investments in and loans to that organization may be assigned the risk weight appropriate for the activity.<sup>16</sup> As the appropriate federal banking agencies for federal and state savings associations, respectively, the OCC and the FDIC apply this capital treatment to those types of institutions. The Board's regulatory capital framework does not apply to savings associations and, therefore, does not include this requirement.

#### Tangible Capital Requirement

Federal law subjects savings associations to a specific tangible capital requirement but does not similarly do so with respect to banks. Under section 5(t)(2)(B) of HOLA, savings associations are required to maintain tangible capital in an amount not less than 1.5 percent of total assets.<sup>17</sup> The capital rule of the OCC and the FDIC includes a requirement that savings associations maintain a tangible capital ratio of 1.5 percent.<sup>18</sup> This statutory requirement does not apply to banks and, thus, there is no comparable regulatory provision for banks. The distinction is of little practical consequence, however, because under the Prompt Corrective Action (PCA) framework, all institutions are considered critically undercapitalized if their tangible equity falls below 2 percent of total assets.<sup>19</sup> Generally speaking, the appropriate

<sup>14</sup> 12 U.S.C. 1464(t)(5).

<sup>15</sup> Subsidiaries engaged in activities not permissible for national banks are considered non-includable subsidiaries.

<sup>16</sup> A deduction from capital is only required to the extent that the savings association's investment exceeds the generally applicable thresholds for deduction of investments in the capital of an unconsolidated financial institution.

<sup>17</sup> 12 U.S.C. 1464(t)(1)(A)(ii) and (t)(2)(B).

<sup>18</sup> 12 CFR 3.10(a)(6) (OCC); 12 CFR 324.10(a)(1)(vi) (FDIC). The Board's regulatory capital framework does not apply to savings associations and, therefore, does not include this requirement.

<sup>19</sup> See 12 U.S.C. 1831o(c)(3); see also 12 CFR 6.4 (OCC); 12 CFR 208.45 (Board); 12 CFR 324.403 (FDIC).

federal banking agency must appoint a receiver within 90 days after an institution becomes critically undercapitalized.<sup>20</sup>

#### Enhanced Supplementary Leverage Ratio

The agencies adopted enhanced supplementary leverage ratio standards that took effect beginning on January 1, 2018.<sup>21</sup> These standards require certain BHCs to exceed a 5 percent supplementary leverage ratio to avoid limitations on distributions and certain discretionary bonus payments and also require the subsidiary institutions of these BHCs to meet a 6 percent supplementary leverage ratio to be considered "well capitalized" under the PCA framework.<sup>22</sup> The rule text establishing the scope of application for the enhanced supplementary leverage ratio differs among the agencies. The Board and the FDIC apply the enhanced supplementary leverage ratio standards for institutions based on parent BHCs being identified as global systemically important BHCs as defined in 12 CFR 217.2.<sup>23</sup> The OCC applies enhanced supplementary leverage ratio standards to the institution subsidiaries under their supervisory jurisdiction of a top-tier BHC that has more than \$700 billion in total assets or more than \$10 trillion in assets under custody.<sup>24</sup>

#### Michael J. Hsu,

*Acting Comptroller of the Currency, Board of Governors of the Federal Reserve System.*

#### Ann E. Misback,

*Secretary of the Board.*

Federal Deposit Insurance Corporation.

Dated at Washington, DC, on November 25, 2024.

#### James P. Sheesley,

*Assistant Executive Secretary.*

[FR Doc. 2024-28227 Filed 12-2-24; 8:45 am]

BILLING CODE 6210-01-P; 6714-01-P; 4810-33-P

## FEDERAL RESERVE SYSTEM

### Change in Bank Control Notices; Acquisitions of Shares of a Bank or Bank Holding Company

The notificants listed below have applied under the Change in Bank Control Act (Act) (12 U.S.C. 1817(j)) and § 225.41 of the Board's Regulation Y (12 CFR 225.41) to acquire shares of a bank

<sup>20</sup> 12 U.S.C. 1831o(h)(3)(A).

<sup>21</sup> See 79 FR 24,528 (May 1, 2014).

<sup>22</sup> 12 CFR 6.4(b)(1)(i)(D)(2) (OCC); 12 CFR 208.43(b)(1)(i)(D)(2) (Board); 12 CFR 324.403(b)(1)(ii) (FDIC).

<sup>23</sup> 12 CFR 208.43(b)(1)(i)(D)(2) (Board); 12 CFR 324.403(b)(1)(ii) (FDIC).

<sup>24</sup> 12 CFR 6.4(b)(1)(i)(D)(2) (OCC).



or bank holding company. The factors that are considered in acting on the applications are set forth in paragraph 7 of the Act (12 U.S.C. 1817(j)(7)).

The public portions of the applications listed below, as well as other related filings required by the Board, if any, are available for immediate inspection at the Federal Reserve Bank(s) indicated below and at the offices of the Board of Governors. This information may also be obtained on an expedited basis, upon request, by contacting the appropriate Federal Reserve Bank and from the Board's Freedom of Information Office at <https://www.federalreserve.gov/foia/request.htm>. Interested persons may express their views in writing on the standards enumerated in paragraph 7 of the Act.

Comments received are subject to public disclosure. In general, comments received will be made available without change and will not be modified to remove personal or business information including confidential, contact, or other identifying information. Comments should not include any information such as confidential information that would not be appropriate for public disclosure.

Comments regarding each of these applications must be received at the Reserve Bank indicated or the offices of the Board of Governors, Ann E. Misback, Secretary of the Board, 20th Street and Constitution Avenue NW, Washington, DC 20551-0001, not later than December 18, 2024.

A. Federal Reserve Bank of Minneapolis (Mark Rauzi, Vice President), 90 Hennepin Avenue, Minneapolis, Minnesota 55480-0291. Comments can also be sent electronically to [MA@mpls.frb.org](mailto:MA@mpls.frb.org):

1. *Lindsey M. Anderson, individually and as trustee of the Rick H. Gerber-Lindsey Irrevocable Trust, both of Chippewa Falls, Wisconsin; Brittney L. Gerber, individually and as trustee of the Rick H. Gerber-Brittney Irrevocable Trust, both of Altoona, Wisconsin; and Ryan M. Gerber, individually and as trustee of the Rick H. Gerber-Ryan Irrevocable Trust, both of Hayward, Wisconsin;* to join the Gerber Family Control Group, a group acting in concert, to acquire voting shares of Chippewa Valley Agency, Ltd., and thereby indirectly acquire voting shares of Chippewa Valley Bank, both of Hayward, Wisconsin.

Board of Governors of the Federal Reserve System.

**Michele Taylor Fennell,**

*Associate Secretary of the Board.*

[FR Doc. 2024-28325 Filed 12-2-24; 8:45 am]

**BILLING CODE 6210-01-P**

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Centers for Disease Control and Prevention

[30Day-25-1061]

#### Agency Forms Undergoing Paperwork Reduction Act Review

In accordance with the Paperwork Reduction Act of 1995, the Centers for Disease Control and Prevention (CDC) has submitted the information collection request titled Behavioral Risk Factor Surveillance System (BRFSS), to the Office of Management and Budget (OMB) for review and approval. CDC previously published a Proposed Data Collection Submitted for Public Comment and Recommendations notice on August 9, 2024, to obtain comments from the public and affected agencies. There were four public comments with two being substantive, related to the previous notice. This notice serves to allow an additional 30 days for public and affected agency comments.

CDC will accept all comments for this proposed information collection project. The Office of Management and Budget is particularly interested in comments that:

(a) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(b) Evaluate the accuracy of the agencies estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(c) Enhance the quality, utility, and clarity of the information to be collected;

(d) Minimize the burden of the collection of information on those who are to respond, including, through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses; and

(e) Assess information collection costs.

To request additional information on the proposed project or to obtain a copy

of the information collection plan and instruments, call (404) 639-7570. Comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting "Currently under 30-day Review—Open for Public Comments" or by using the search function. Direct written comments and/or suggestions regarding the items contained in this notice to the Attention: CDC Desk Officer, Office of Management and Budget, 725 17th Street NW, Washington, DC 20503 or by fax to (202) 395-5806. Provide written comments within 30 days of notice publication.

#### Proposed Project

Behavioral Risk Factor Surveillance System (BRFSS) (OMB Control No. 0920-1061, Exp. 12/31/2024)—Revision—National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Centers for Disease Control and Prevention (CDC).

#### Background and Brief Description

CDC is requesting OMB approval to revise information collection for the Behavioral Risk Factor Surveillance System (BRFSS) for the period of 2025–2027. The BRFSS is a nationwide system of cross-sectional surveys using random digit dialed (RDD) samples administered by health departments in states, territories, and the District of Columbia (collectively referred to here as states) in collaboration with the CDC. Traditionally subject recruitment and interview have been conducted by telephone. In 2025–2027, the BRFSS will introduce the option to allow participants to voluntarily complete online surveys, after telephone recruitment. The BRFSS produces state-level information primarily on health risk behaviors, health conditions, and preventive health practices that are associated with chronic diseases, infectious diseases, and injury. Designed to meet the data needs of individual states and territories, the CDC sponsors the BRFSS information collection project under a cooperative agreement with states and territories. Under this partnership, BRFSS state coordinators determine questionnaire content with technical and methodological assistance provided by CDC. For most states and territories, the BRFSS provides the only sources of data amenable to state and local level health and health risk indicator uses. Over time, it has also developed into an important data collection system that federal agencies rely on for state and



local health information and to track national health objectives such as Healthy People.

CDC bases the BRFSS questionnaire on modular design principles to accommodate a variety of state-specific needs within a common framework. All participating states are required to administer a standardized core questionnaire, which provides a set of shared health indicators for all BRFSS partners. The BRFSS core questionnaire consists of fixed core, rotating core, and emerging core questions. Fixed core questions are asked every year. Rotating core questions cycle on and off the core questionnaire in two- or three-year cycles, depending on the question. Emerging core questions are included in the core questionnaire as needed to collect data on urgent or emerging

health topics such as infectious disease. In addition, the BRFSS includes a series of optional modules on a variety of topics. In off years, when the rotating questions are not included in the core questionnaire, they are offered to states as optional modules. This framework allows each state to produce a customized BRFSS survey by appending selected optional modules to the core survey. States may select which, if any, optional modules to administer. As needed, CDC provides technical and methodological assistance to state BRFSS coordinators in the construction of their state-specific surveys. Each state administers its BRFSS questionnaire throughout the calendar year.

CDC periodically updates the BRFSS core survey and optional modules. The purpose of this Revision request is to

continue with the following topics in the questionnaires: Traumatic brain injury, medical adherence, cardiovascular health, veterans' health, positive childhood experiences, and the use of newly available tobacco products. In addition, this request seeks approval for reinstating topics which have been included in BRFSS in the past, dependent upon state interest and funding.

Participation is voluntary and there is no cost to participate. The average time burden per response will be no more than 22 minutes by phone and 60 minutes by mail. The total time burden across all respondents will be approximately 274,632 hours. OMB approval is requested for three years.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondents	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hours)
U.S. General Population .....	Landline Screener .....	173,000	1	1/60
	Cell Phone Screener .....	694,000	1	1/60
	Field Test Screener .....	900	1	1/60
Annual Survey Respondents (Adults >18 Years).	BRFSS Core Survey by Phone Interview .....	480,000	1	15/60
	BRFSS Optional Modules by Phone Interview.	440,000	1	15/60
	BRFSS Core Survey by Online Survey .....	100,000	1	10/60
Field Test Respondents (Adults >18 Years) ..	BRFSS Optional Modules by Online Survey	80,000	1	10/60
	Field Test Survey by Phone Interview .....	500	1	20/60

Jeffrey M. Zirger,

Lead, Information Collection Review Office, Office of Public Health Ethics and Regulations, Office of Science, Centers for Disease Control and Prevention.

[FR Doc. 2024-28324 Filed 12-2-24; 8:45 am]

BILLING CODE 4163-18-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[30Day-25-1408]

Agency Forms Undergoing Paperwork Reduction Act Review

In accordance with the Paperwork Reduction Act of 1995, the Centers for Disease Control and Prevention (CDC) received approval from the Office of Management and Budget (OMB) to conduct the National Center for Health Statistics (NCHS) Rapid Surveys System (RSS) (OMB Control No. 0920-1408), which includes fielding four surveys per year. RSS Round 1 Survey was approved in June 2023. A second, third,

and fourth round of the RSS were additionally approved. In accordance with the Terms of Clearance, NCHS will publish a 30-day **Federal Register** Notice announcing each new survey so that public comments can be received about the specific content of each survey. Interested persons are invited to send comments regarding this information collection, including ways to enhance the quality, utility, and clarity of the Round 6 content. This notice includes specific details about the questions that would be asked in the sixth round (Round 6) of the RSS and serves to allow 30 days for public and affected agency comments, consistent with OMB's terms of clearance.

CDC will accept all comments for this proposed information collection project. The Office of Management and Budget is particularly interested in comments that:

(a) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(b) Evaluate the accuracy of the agencies estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(c) Enhance the quality, utility, and clarity of the information to be collected;

(d) Minimize the burden of the collection of information on those who are to respond, including, through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses; and

(e) Assess information collection costs.

To request additional information on the proposed project or to obtain a copy of the information collection plan and instruments, call (404) 639-7570. Comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting

“Currently under 30-day Review—Open for Public Comments” or by using the search function. Direct written comments and/or suggestions regarding the items contained in this notice to the Attention: CDC Desk Officer, Office of Management and Budget, 725 17th Street NW, Washington, DC 20503 or by fax to (202) 395–5806. Provide written comments within 30 days of notice publication.

**Proposed Project**

Rapid Surveys System (RSS) Round 6 (OMB Control No. 0920–1408)—National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC).

*Background and Brief Description*

Section 306 of the Public Health Service (PHS) Act (42 U.S.C.), as amended, authorizes that the Secretary of Health and Human Services (HHS), acting through NCHS, collect data about the health of the population of the United States. The Rapid Survey System (RSS) (OMB Control No. 0920–1408) collects data on emerging public health topics, attitudes, and behaviors using cross-sectional samples from two commercially available, national probability-based online panels. The RSS then combines these data to form estimates that approximate national representation in ways that many data collection approaches cannot. The RSS collects data in contexts in which decision makers’ need for time-sensitive data of known quality about emerging and priority health concerns is a higher priority than their need for statistically unbiased estimates.

The RSS complements NCHS’s current household survey systems. As quicker turnaround surveys that require less accuracy and precision than CDC’s more rigorous population representative surveys, the RSS incorporates multiple mechanisms to carefully evaluate the resulting survey data for their appropriateness for use in public health surveillance and research (e.g., hypothesis generating) and facilitate continuous quality improvement by

supplementing these panels with intensive efforts to understand how well the estimates reflect populations at most risk. The RSS data dissemination strategy communicates the strengths and limitations of data collected through online probability panels as compared to more robust data collection methods.

The RSS has three major goals: (1) to provide CDC and other partners with time-sensitive data of known quality about emerging and priority health concerns; (2) to use these data collections to continue NCHS’s evaluation of the quality of public health estimates generated from commercial online panels; and (3) to improve methods to communicate the appropriateness of public health estimates generated from commercial online panels.

The RSS is designed to have several rounds of data collection each year with data being collected by two contractors with probability panels. A cross-sectional nationally representative sample will be drawn from the online probability panel maintained by each of the contractors. As part of the base (minimum sample size), each round of data collection will collect 2,000 responses per quarter. The RSS can be expanded by increasing the number of completed responses per round or the number of rounds per year as needed up to a maximum of 28,000 responses per year per contractor or 56,000 total responses per year. Additionally, each data collection may include up to 2,000 additional responses per quarter (8,000 for the year) to improve representativeness. This increases the maximum burden by up to 16,000 responses per year. The RSS may also target individual surveys to collect data only from specific subgroups within existing survey panels and may supplement data collection for such groups with additional respondents from other probability or nonprobability samples. An additional 12,000 responses per year may be used for these developmental activities.

Each round’s questionnaire will consist of four main components: (1)

basic demographic information on respondents to be used as covariates in analyses; (2) new, emerging, or supplemental content proposed by NCHS, other CDC Centers, Institute, and Offices, and other HHS agencies; (3) questions used for calibrating the survey weights; and (4) additional content selected by NCHS to evaluate against relevant benchmarks. NCHS will use questions from Components 1 and 2 to provide relevant, timely data on new, emerging, and priority health topics to be used for decision making. NCHS will use questions from Components 3 and 4 to weight and evaluate the quality of the estimates coming from questions in Components 1 and 2. NCHS submits a 30-day **Federal Register** Notice with information on the contents of each round of data collection.

NCHS calibrates survey weights from the RSS to gold standard surveys. Questions used for calibration in this round of RSS will include healthcare access and utilization, social and work limitation, employment, marital status, civic engagement, language used at home and in other settings, and health information technology use. All of these questions have been on the National Health Interview Survey (NHIS) in prior years allowing calibration to these data. Finally, all RSS rounds will include several questions that were previously on NHIS or other suitable federal surveys for benchmarking to evaluate data quality. Panelists in the RSS will be asked about health status, chronic conditions, cigarette and tobacco use, healthcare access and utilization, immunizations, health insurance, and social determinants of health including the ability to pay medical bills and food insecurity.

The estimated total annual burden hours for the three-year approval period remains at 28,079 burden hours. The NCHS RSS Round 6 (2024) data collection is based on 8,000 complete surveys (2,664 hours). There are no costs to respondents other than their time.

**ESTIMATED ANNUALIZED BURDEN HOURS**

Type of respondents	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hours)
Adults 18+ .....	Survey: NCHS RSS Round 6 .....	8,000	1	20/60
Adult 18+ .....	Cognitive Interviews .....	20	1	1

Jeffrey M. Zirger,

Lead, Information Collection Review Office,  
Office of Public Health Ethics and  
Regulations, Office of Science, Centers for  
Disease Control and Prevention.

[FR Doc. 2024-28320 Filed 12-2-24; 8:45 am]

BILLING CODE 4163-18-P

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Centers for Disease Control and Prevention

[60Day-25-1363; Docket No. CDC-2024-0097]

#### Proposed Data Collection Submitted for Public Comment and Recommendations

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice with comment period.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden and maximize the utility of government information, invites the general public and other federal agencies to take this opportunity to comment on a continuing information collection, as required by the Paperwork Reduction Act of 1995. This notice invites comment on the Research Data Center (RDC) Proposal for Access to Confidential Data for the National Center for Health Statistics (NCHS). This data collection is used to assess researcher's request for access to confidential NCHS data for their research projects.

**DATES:** Written comments must be received on or before February 3, 2025.

**ADDRESSES:** You may submit comments, identified by Docket No. CDC-2024-0097 by any of the following methods:

- *Federal eRulemaking Portal:* [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.
- *Mail:* Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS-H21-8, Atlanta, Georgia 30329.

*Instructions:* All submissions received must include the agency name and Docket Number. All relevant comments received will be posted without change to [www.regulations.gov](http://www.regulations.gov), including any

personal information provided. For access to the docket to read background documents or comments received, go to [www.regulations.gov](http://www.regulations.gov).

*Please note:* All public comment should be submitted through the Federal eRulemaking portal ([www.regulations.gov](http://www.regulations.gov)) or by U.S. mail to the address listed above.

**FOR FURTHER INFORMATION CONTACT:** To request more information on the proposed project or to obtain a copy of the information collection plan and instruments, contact Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS-H21-8, Atlanta, Georgia 30329; Telephone: 404-639-7570; Email: [omb@cdc.gov](mailto:omb@cdc.gov).

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501-3520), federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. In addition, the PRA also requires federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

The OMB is particularly interested in comments that will help:

1. Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
2. Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
3. Enhance the quality, utility, and clarity of the information to be collected;
4. Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or

other forms of information technology, e.g., permitting electronic submissions of responses; and

5. Assess information collection costs.

#### Proposed Project

Research Data Center (RDC) Proposal for Access to Confidential Data for the National Center for Health Statistics (OMB Control No. 0920-1363, Exp. 4/30/2025)—Extension—National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC).

#### Background and Brief Description

Section 306(b)(4) of the Public Health Service (PHS) Act (42 U.S.C. 242k(b)(4)), as amended, authorizes the Secretary of Health and Human Services (DHHS), acting through NCHS, to receive requests for providing data and statistics to the public. NCHS receives requests for confidential data from the public through the Research Data Center (RDC) Proposal for Access to Confidential Data. This is a request for an Extension without change from OMB to collect information via the RDC proposal over the next three years at an overall burden rate of 990 hours.

As part of a comprehensive data dissemination program, the Research Data Center (RDC), National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention, requires prospective researchers who need access to confidential data to complete a research proposal. Researchers self-select whether they need access to confidential data to answer their research questions. The RDC requires the researcher to complete a research proposal so NCHS understands the research proposed, whether confidential data are available to address the research questions, how the confidential data will be used and what data outputs the researcher needs to satisfy their project. The completed proposal is sent to NCHS for adjudication on whether the proposed research is possible.

To capture the information needed to adjudicate researchers' need for access to confidential NCHS data, this request allows for both respondents and time per response for a total estimated annual burden total of 330 hours (990 hours for a three-year clearance period). There is no cost to respondents other than their time to complete the proposal.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondents	Form name	Number of respondents	Number of responses per respondent	Avg. burden per response (in hrs.)	Total burden (in hrs.)
Researcher .....	Research Data Center proposal .....	110	1	3	330
Total .....	.....	330	.....	.....	.....

Jeffrey M. Zirger,

Lead, Information Collection Review Office, Office of Public Health Ethics and Regulations, Office of Science, Centers for Disease Control and Prevention.

[FR Doc. 2024-28322 Filed 12-2-24; 8:45 am]

BILLING CODE 4163-18-P

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

[Docket No. CDC-2024-0100]

**Draft CDC’s Recommendations for HIV Screening in Clinical Settings**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice.

**SUMMARY:** The Centers for Disease Control and Prevention in the Department of Health and Human Services announces the opening of a docket to obtain comment on the draft Recommendations for HIV Screening in Clinical Settings, that update portions of CDC’s “Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings,” published in 2006.

**DATES:** Written comments must be received on or before January 2, 2025.

**ADDRESSES:** You may submit comments, identified by Docket No. CDC-2024-0100 by either of the methods listed below. Do not submit comments by email. CDC does not accept comments by email.

- *Federal eRulemaking Portal:* <https://www.regulations.gov>. Follow the instructions for submitting comments.

- *Mail:* National Center for HIV, Viral Hepatitis, STD, and TB Prevention, CDC, 1600 Clifton Road NE, Mailstop U.S. 8-6, Atlanta, GA 30329-4027.

*Instructions:* All submissions received must include the agency name and Docket Number. All relevant comments received will be posted without change to <https://regulations.gov>, including any personal information provided. For access to the docket to read background documents or comments received, go to <https://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:**

Cecily Campbell, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, CDC, 1600 Clifton Road NE, Mailstop U.S. 8-6, Atlanta, GA 30329-4027, Email: [nchhstppolicy@cdc.gov](mailto:nchhstppolicy@cdc.gov). Office phone: 404-639-0485.

**SUPPLEMENTARY INFORMATION:** CDC is requesting public comment on the draft “Recommendations for HIV Screening in Clinical Settings,” which is available on [regulations.gov](https://www.regulations.gov) in Docket CDC-2024-0100. These recommendations modify the ages for HIV screening including eliminating an upper age limit, encourage providers to use clinical decision support tools such as automated HIV test laboratory orders to implement HIV screening, provide considerations for healthcare populations on which to conduct HIV screening, recommend anyone who requests a test should be tested, and emphasize the use of a general consent process as used for other routine tests. CDC describes the methods and supporting evidence in the recommendations. The recommendations’ objectives are to diagnose and link patients with undiagnosed infection to clinical care; relink persons with previously diagnosed HIV to clinical care; diagnose HIV infection earlier; and reduce HIV transmission in the United States.

**Public Participation**

Interested persons or organizations are invited to participate by submitting written views, recommendations, and data. In addition, CDC invites comments specifically on the following questions proposed in this document:

- Does the evidence presented support the proposed recommendations for HIV screening in clinical settings, including the benefits and harms of HIV screening? If not, please state the reason why and, if available, provide additional evidence for consideration.
  - Are CDC’s proposed recommendations for HIV screening in clinical settings clearly written? If not, what changes do you propose to make it clearer?
  - If implemented as currently drafted, do you believe these recommendations would improve HIV screening in

clinical settings, improve diagnoses and linking patients with undiagnosed infection to clinical care; relinking persons with previously diagnosed HIV to clinical care; diagnosing HIV infection earlier; and reducing HIV transmission in the United States? If not, please provide an explanation and supporting data or evidence.

- How should CDC disseminate the final recommendations to effectively reach end users such as healthcare providers in clinical settings?
- After the recommendations are finalized, CDC is planning to publish an implementation guide for healthcare providers to supplement the updated recommendations. What should the implementation guide include?

Please note that comments received, including attachments and other supporting materials, are part of the public record and are subject to public disclosure. Comments will be posted on <https://www.regulations.gov>. Therefore, do not include any information in your comment or supporting materials that you consider confidential or inappropriate for public disclosure. If you include your name, contact information, or other information that identifies you in the body of your comments, that information will be on public display. CDC will review all submissions and may choose to redact, or withhold, submissions containing private or proprietary information such as Social Security numbers, medical information, inappropriate language, or duplicate/near duplicate examples of a mass-mail campaign. Do not submit comments by email. CDC does not accept comment by email.

After the comments received on the draft are considered and addressed, the final recommendations will be published on CDC’s website at <https://www.cdc.gov/hiv/guidelines/testing.html>. The final recommendations will also be posted to docket CDC-2024-0100 at [www.regulations.gov](https://www.regulations.gov).

**Background**

Human immunodeficiency virus (HIV) is a virus that attacks the body’s immune system. The only way a person can know their HIV status is by getting tested (CDC, 2024a). While there is no

cure, people with HIV who get on and stay on effective HIV treatment can live long, healthy lives and protect their partners (CDC, 2024a).

While the number of persons living with HIV in the United States has slightly increased from an estimated 1.1 million people at the end of 2006 to 1.2 million people in 2022, the estimated HIV incidence has decreased from 48,600 in 2006 to 31,800 in 2022 (Campsmith, Rhodes, Hall, & Green, 2008; CDC, 2024b; Prejean et al., 2011). There are now better HIV assays for more accurate diagnosis, improved antiretroviral treatment, pre-exposure prophylaxis, post-exposure prophylaxis, and self-testing, which taken together improve the prevention, diagnosis, and treatment of HIV infections.

In 2006, the CDC published “Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings,” (hereafter referred to as 2006 HIV Testing Recommendations). These guidelines transformed the HIV testing paradigm in the United States by recommending routine, voluntary HIV screening among all adults and adolescents between 13–64 years of age unless prevalence of undiagnosed HIV infection in their patients has been documented to be less than 0.1%. In addition, it was recommended that repeat screening of persons not likely to be at high risk for HIV should be performed based on clinical judgment.

The 2006 HIV Testing Recommendations aimed to normalize HIV screening. To update the evidence, CDC conducted an in-depth systematic review and analysis of other data sources using rigorous methods for guidelines development. CDC obtained input from the public prior to starting the update process and from internal and external experts at different points in the process. CDC seeks to engage a diverse range of perspectives to inform the development of the recommendations, improve their credibility, and increase the transparency of the process.

CDC invites written comments by the public (any interested persons or organizations) on the draft HIV screening guideline. These recommendations will also undergo peer review.

**Noah Aleshire,**

*Chief Regulatory Officer, Centers for Disease Control and Prevention.*

[FR Doc. 2024–28294 Filed 12–2–24; 8:45 am]

**BILLING CODE 4163–18–P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

[60Day–25–1365; Docket No. CDC–2024–0099]

**Proposed Data Collection Submitted for Public Comment and Recommendations**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice with comment period.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden and maximize the utility of government information, invites the general public and other federal agencies the opportunity to comment on a continuing information collection, as required by the Paperwork Reduction Act of 1995. This notice invites comment on a proposed information collection project titled Performance Monitoring of CDC’s Core State Injury Prevention Program (SIPP). The goal of Core SIPP is to strengthen the awardee’s injury prevention programs and policies and demonstrate impact in the reduction of injury-related morbidity and mortality.

**DATES:** CDC must receive written comments on or before February 3, 2025.

**ADDRESSES:** You may submit comments, identified by Docket No. CDC–2024–0099 by either of the following methods:

- *Federal eRulemaking Portal:* [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.
- Mail: Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21–8, Atlanta, Georgia 30329.

*Instructions:* All submissions received must include the agency name and Docket Number. CDC will post, without change, all relevant comments to [www.regulations.gov](http://www.regulations.gov).

*Please note:* Submit all comments through the Federal eRulemaking portal ([www.regulations.gov](http://www.regulations.gov)) or by U.S. mail to the address listed above.

**FOR FURTHER INFORMATION CONTACT:** To request more information on the proposed project or to obtain a copy of the information collection plan and instruments, contact Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21–8, Atlanta, Georgia 30329;

Telephone: 404–639–7570; Email: [omb@cdc.gov](mailto:omb@cdc.gov).

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501–3520), federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. In addition, the PRA also requires federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to the OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

The OMB is particularly interested in comments that will help:

1. Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
2. Evaluate the accuracy of the agency’s estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
3. Enhance the quality, utility, and clarity of the information to be collected;
4. Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.*, permitting electronic submissions of responses; and
5. Assess information collection costs.

**Proposed Project**

Performance Monitoring of CDC’s Core State Injury Prevention Program (SIPP) (OMB Control No. 0920–1365, Exp. 7/31/2025)—Revision—National Center for Injury Prevention and Control (NCIPC), Centers for Disease Control and Prevention (CDC).

*Background and Brief Description*

This is a Revision request for the currently approved Performance Monitoring of CDC’s Core State Injury Prevention Program (SIPP) (OMB Control No. 0920–1369, Exp. Date 7/31/2025). Approval is requested for an additional three years to continue collecting information from awardees funded under the Core SIPP cooperative agreement. Data collected up until this

point has been used for monitoring the impact of Core SIPP.

Monitoring the impact of population-based strategies and identifying new insights and innovative solutions to health problems are two of the noted public health activities that all public health systems should undertake. For NCIPC, these objectives cannot be satisfied without the systematic collection of data and information from state health departments. The information collection will enable the accurate, reliable, uniform, and timely submission to NCIPC of each awardee’s progress report and injury indicators, including strategies and performance measures. The information collection plan proposed here will also generate a variety of routine and customizable reports. State-specific reports will allow each awardee to summarize activities and progress towards meeting strategies and performance measure targets related to the reduction and prevention of unintentional and intentional injuries. NCIPC will also have the capacity to generate reports that describe activities and health outcomes across multiple recipients, which will enable better reporting of trends and provision of technical assistance through linking partners across state health departments and collaborating divisions within CDC.

The information collection and reporting requirements have been carefully designed to align with and support the specific goals and outcomes outlined in the Core SIPP cooperative agreement. The overarching goal of Core SIPP is to strengthen the awardee’s injury prevention programs and policies and demonstrate impact in the reduction of injury-related morbidity and mortality. Although the data are limited to the 26 recipients of the Core SIPP NOFO, the results can be generalizable and inform injury prevention work. Moreover, it is steadfastly asserted that the results of the data collection are vital to ensuring the Core SIPP’s efficient management. Results will not only allow NCIPC staff to provide data-driven technical assistance to recipients, but also to assess patterns across other NCIPC injury prevention programs such as, Prescription Drug Overdose Prevention for States and the Injury Control Research Centers. In addition, the data collection will inform the continuous quality improvement process and allow NCIPC staff to make mid-course corrections and describe the impact on health outcomes. The information collection procedures allow NCIPC to respond to inquiries from the HHS, the White House, Congress and other stakeholders about program activities

and their impact; as well as, work towards CDC’s overarching mission to protect America from health, safety and security threats, both foreign and in the U.S.

Program recipients use the information collected to manage and coordinate their activities and to improve their efforts to prevent and control injuries. The Partners’ Portal allows recipients to fulfill their annual reporting obligations efficiently by employing user-friendly, easily accessible web-based instruments to collect necessary information for both progress reports and continuation applications including work plans. This approach enables recipients to save pertinent information from one reporting period to the next and reduces the administrative burden on the annual continuation application and the performance monitoring process. Awardee program staff are able to review the completeness of data needed to generate required reports, enter basic summary data for reports annually, and finalize and save required reports for upload into other reporting systems as required.

CDC requests OMB approval for an estimated 286 annual burden hours. There are no costs to respondents other than their time to participate.

**ESTIMATED ANNUALIZED BURDEN HOURS**

Type of respondents	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hours)	Total burden (in hours)
Core SIPP Program Recipients .....	Annual Progress Report .....	26	1	11	286
Total .....	.....	.....	.....	.....	286

**Jeffrey M. Zirger,**  
*Lead, Information Collection Review Office,  
 Office of Public Health Ethics and  
 Regulations, Office of Science, Centers for  
 Disease Control and Prevention.*  
 [FR Doc. 2024-28323 Filed 12-2-24; 8:45 am]  
**BILLING CODE 4163-18-P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Disease Control and Prevention**

[60Day-25-25BN; Docket No. CDC-2024-0098]

**Proposed Data Collection Submitted for Public Comment and Recommendations**

**AGENCY:** Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

**ACTION:** Notice with comment period.

**SUMMARY:** The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden and maximize the utility of government information, invites the

general public and other federal agencies the opportunity to comment on a proposed information collection, as required by the Paperwork Reduction Act of 1995. This notice invites comment on a proposed information collection project titled 2024 Marburg Traveler Symptom Monitoring and Feedback. This information collection is designed to conduct post-arrival symptom monitoring of travelers who have been in the outbreak area and evaluate the impact of rerouting and public health entry screening on travelers.

**DATES:** CDC must receive written comments on or before February 3, 2025.

**ADDRESSES:** You may submit comments, identified by Docket No. CDC-2024-0098 by either of the following methods:

• *Federal eRulemaking Portal:* [www.regulations.gov](http://www.regulations.gov). Follow the instructions for submitting comments.

• *Mail:* Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21-8, Atlanta, Georgia 30329.

*Instructions:* All submissions received must include the agency name and Docket Number. CDC will post, without change, all relevant comments to [www.regulations.gov](http://www.regulations.gov). Please note: Submit all comments through the Federal eRulemaking portal ([www.regulations.gov](http://www.regulations.gov)) or by U.S. mail to the address listed above.

**FOR FURTHER INFORMATION CONTACT:** To request more information on the proposed project or to obtain a copy of the information collection plan and instruments, contact Jeffrey M. Zirger, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE, MS H21-8, Atlanta, Georgia 30329; Telephone: 404-639-7570; Email: [omb@cdc.gov](mailto:omb@cdc.gov).

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501-3520), federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. In addition, the PRA also requires federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to the OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

The OMB is particularly interested in comments that will help:

1. Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
2. Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
3. Enhance the quality, utility, and clarity of the information to be collected;
4. Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated,

electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submissions of responses; and

5. Assess information collection costs.

### Proposed Project

2024 Marburg Traveler Symptom Monitoring and Feedback—New—National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Centers for Disease Control and Prevention (CDC).

### Background and Brief Description

The Centers for Disease Control and Prevention (CDC), National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Global Migration Health (DGMH) requests an Emergency approval for a New information collection. Section 361 of the Public Health Service (PHS) Act (42 U.S.C. 264) authorizes the Secretary of Health and Human Services to make and enforce regulations necessary to prevent the introduction, transmission or spread of communicable diseases from foreign countries into the United States. Under its delegated authority, DGMH works to fulfill this responsibility through a variety of activities, including the operation of Port Health Stations at ports of entry and administration of foreign quarantine regulations; 42 Code of Federal Regulation part 71 (specifically 42 CFR 71.20), public health prevention measures to detect communicable disease. This information collection concerns CDC's responsibility to ensure the successful implementation of traveler monitoring to prevent the transmission or spread of communicable diseases into the United States.

On February 21, 2020, CDC issued an interim final rule (IFR) to amend its Foreign Quarantine regulations, to enable CDC to require airlines to collect, and provide to CDC, certain data regarding passengers and crew arriving from foreign countries for the purposes of health education, treatment, prophylaxis, or other appropriate public health interventions, including travel restrictions. CDC's authority for collecting data for travelers arriving in the United States is contained in 42 CFR 71. Under this IFR, airlines must transmit these data to CDC within 24 hours of an order. The order Requirement for Airlines and Operators to Collect and Transmit Designated Information for Passengers and Crew Arriving into the United States; Requirement for Passengers to Provide Designated Information requiring the collection of this information was

issued on October 25, 2021 and went into effect on November 8, 2021. Under this order, airlines may transmit the required information using the existing data-sharing infrastructure in place between the United States Department of Homeland Security (DHS) and HHS/CDC or they must retain the information for a minimum of 30 days and transmit it to CDC within 24 hours upon request. This information collection for contact information is already approved under OMB Control No. 0920-1354.

In September 2024, an outbreak of Marburg virus was detected in the Republic of Rwanda. DHS has instructed airlines to redirect flights carrying persons who have recently traveled from or were otherwise present within Rwanda to land at designated U.S. airports. CDC is conducting public health entry screening at these designated U.S. airports of travelers coming from Rwanda. The purpose of public health entry screening is to detect ill travelers or travelers arriving from regions affected by the outbreak who are at risk of becoming ill with Marburg to facilitate post-arrival management. This information collection has been approved under OMB Control Number 0920-1443.

CDC will utilize information collected during public health entry screening (approved under OMB Control Number 0920-1443) to determine which travelers should be monitored for Marburg symptoms in accordance with CDC's interim recommendations for post-arrival public health management of travelers from Rwanda. Monitoring of travelers will be done via text message and web survey and will take place over a period of 21 days from the traveler's last documented Marburg exposure. Text messages and web survey will be available in English and with an additional translated Kinyarwanda version. The information collected will allow CDC to identify the level of follow up necessary based on the level of risk of exposure to Marburg and determine if additional risk assessment and/or targeted public health measures are needed. Information collected from travelers during symptom monitoring will be shared with state and local health departments through existing secure data-sharing infrastructure. This information collection is necessary to facilitate post-arrival public health management of travelers as specified in CDC interim recommendations for management of U.S.-based healthcare personnel who have been in Rwanda and interim recommendations for post-arrival public health management of travelers from Rwanda. At the end of the 21-day monitoring period, CDC will

send a final survey to travelers intended to evaluate the impact of rerouting and public health entry screening on travelers. The results of this final survey

will allow CDC to identify the most efficient channels for reaching travelers and refine public health messaging for travelers coming from the outbreak area.

CDC requests OMB approval for an estimated 2,833 annual burden hours. There is no cost to respondents other than their time to participate.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondent	Form name	Number of respondents	Number responses per respondent	Avg. burden per response (in hrs.)	Total burden (in hrs.)
Traveler .....	2024 Marburg Symptom Monitoring Daily Group .....	438	21	1/60	153
	2024 Marburg Symptom Monitoring Daily Group—Web Survey for Symptomatic Travelers.	438	21	5/60	767
Traveler .....	2024 Marburg Symptom Monitoring Weekly Group ....	3,942	3	1/60	197
	2024 Marburg Symptom Monitoring Weekly Group—Web Survey for Symptomatic Travelers.	3,942	3	5/60	986
Traveler .....	2024 Marburg Response Survey of Travelers .....	4,380	1	10/60	730
Total .....	.....	.....	.....	.....	2,833

**Jeffrey M. Zirger,**  
*Lead, Information Collection Review Office, Office of Public Health Ethics and Regulations, Office of Science, Centers for Disease Control and Prevention.*  
 [FR Doc. 2024–28321 Filed 12–2–24; 8:45 am]  
**BILLING CODE 4163–18–P**

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Centers for Medicare & Medicaid Services**

[Document Identifier: CMS–10141]

**Agency Information Collection Activities: Submission for OMB Review; Comment Request**

**AGENCY:** Centers for Medicare & Medicaid Services, Health and Human Services (HHS).  
**ACTION:** Notice.

**SUMMARY:** The Centers for Medicare & Medicaid Services (CMS) is announcing an opportunity for the public to comment on CMS’ intention to collect information from the public. Under the Paperwork Reduction Act of 1995 (PRA), Federal agencies are required to publish notice in the **Federal Register** concerning each proposed collection of information, including each proposed extension or reinstatement of an existing collection of information, and to allow a second opportunity for public comment on the notice. Interested persons are invited to send comments regarding the burden estimate or any other aspect of this collection of information, including the necessity and utility of the proposed information collection for the proper performance of the agency’s functions, the accuracy of the estimated burden, ways to enhance the quality, utility, and clarity of the information to be collected, and the use

of automated collection techniques or other forms of information technology to minimize the information collection burden.

**DATES:** Comments on the collection(s) of information must be received by the OMB desk officer by January 2, 2025.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function.

To obtain copies of a supporting statement and any related forms for the proposed collection(s) summarized in this notice, please access the CMS PRA website by copying and pasting the following web address into your web browser: <https://www.cms.gov/Regulations-and-Guidance/Legislation/PaperworkReductionActof1995/PRA-Listing>.

**FOR FURTHER INFORMATION CONTACT:** William Parham at (410) 786–4669.

**SUPPLEMENTARY INFORMATION:** Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501–3520), Federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. The term “collection of information” is defined in 44 U.S.C. 3502(3) and 5 CFR 1320.3(c) and includes agency requests or requirements that members of the public submit reports, keep records, or provide information to a third party. Section 3506(c)(2)(A) of the PRA (44 U.S.C. 3506(c)(2)(A)) requires Federal agencies to publish a 30-day notice in the **Federal Register** concerning each proposed collection of information,

including each proposed extension or reinstatement of an existing collection of information, before submitting the collection to OMB for approval. To comply with this requirement, CMS is publishing this notice that summarizes the following proposed collection(s) of information for public comment:

- Type of Information Collection Request:* Revision of a currently approved information collection; *Title of Information Collection:* Medicare Prescription Drug Benefit Program; *Use:* CMS will use this information from plan sponsors and States to approve contract applications, monitor compliance with contract requirements, make proper payment to plans, and ensure that correct information is disclosed to potential and current enrollees. *Form Number:* CMS–10141 (OMB control number: 0938–0964); *Frequency:* Annually; *Affected Public:* Private Sector, State, Local, or Tribal Governments; *Number of Respondents:* 4,633,032; *Total Annual Responses:* 87,014,803; *Total Annual Hours:* 25,409,037. (For policy questions regarding this collection contact Chad Buskirk at 410–786–1630 or [chad.buskirk@cms.hhs.gov](mailto:chad.buskirk@cms.hhs.gov)).

**William N. Parham, III,**  
*Director, Division of Information Collections and Regulatory Impacts, Office of Strategic Operations and Regulatory Affairs.*

[FR Doc. 2024–28308 Filed 12–2–24; 8:45 am]

**BILLING CODE 4120–01–P**



**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Food and Drug Administration**

[Docket No. FDA-2024-N-4821]

**Food and Drug Administration's Best Practices for Food and Drug Administration Communication with Interested Parties: Draft Report for Public Comment; Availability**

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Notice of availability.

**SUMMARY:** The Food and Drug Administration (FDA or Agency) is announcing the availability of a draft document entitled "Best Practices for FDA Communication with Interested Parties: Draft Report for Public Comment." This draft report and implementation plan respond to the Consolidated Appropriations Act of 2023, which directs FDA to issue a report on FDA's practices for broadly communicating with external interested parties and a plan for implementation of such best practices. In addition, FDA is to conduct a review of the types and methods of public communication that FDA uses to communicate and interact with medical product sponsors and other external interested parties; identify best practices for the efficient development, issuance, and use of such communications; and develop a plan for implementation of best practices for these communications. As directed, FDA is publishing and soliciting feedback on this draft report and implementation plan.

**DATES:** Submit either electronic or written comments on the draft report and implementation plan by February 3, 2025.

**ADDRESSES:** You may submit comments as follows:

*Electronic Submissions*

Submit electronic comments in the following way:

- *Federal eRulemaking Portal:* <https://www.regulations.gov>. Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to <https://www.regulations.gov> will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note

that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on <https://www.regulations.gov>.

- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see "Written/Paper Submissions" and "Instructions").

*Written/Paper Submissions*

Submit written/paper submissions as follows:

- *Mail/Hand Delivery/Courier (for written/paper submissions):* Dockets Management Staff (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

- For written/paper comments submitted to the Dockets Management Staff, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in "Instructions."

*Instructions:* All submissions received must include the Docket No. FDA-2024-N-4821 for "Best Practices for FDA Communication with Interested Parties." Received comments will be placed in the docket and, except for those submitted as "Confidential Submissions," publicly viewable at <https://www.regulations.gov> or at the Dockets Management Staff between 9 a.m. and 4 p.m., Monday through Friday, 240-402-7500.

- *Confidential Submissions—*To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states "THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION." The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on <https://www.regulations.gov>. Submit both copies to the Dockets Management Staff. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as "confidential." Any information marked as "confidential" will not be disclosed except in accordance with 21 CFR 10.20

and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: <https://www.govinfo.gov/content/pkg/FR-2015-09-18/pdf/2015-23389.pdf>.

*Docket:* For access to the docket to read background documents or the electronic and written/paper comments received, go to <https://www.regulations.gov> and insert the docket number, found in brackets in the heading of this document, into the "Search" box and follow the prompts and/or go to the Dockets Management Staff, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852, 240-402-7500.

See the **SUPPLEMENTARY INFORMATION** section for electronic access to the draft report and plan.

**FOR FURTHER INFORMATION CONTACT:** Will Bet-Sayad, Office of External Affairs, Food and Drug Administration, [will.betsayad@fda.hhs.gov](mailto:will.betsayad@fda.hhs.gov), 301-796-4523.

**SUPPLEMENTARY INFORMATION:**

**I. Background**

Clear, concise, and timely communication with medical product sponsors and other interested parties, including the public, using Agency regulatory documents as well as a variety of other communication methods, is essential to the public health mission of FDA. FDA currently uses a wide range of communication methods (e.g., website posting, online resource libraries, webinars and town halls, email, press releases and press conferences, social media, blogs, podcasts, guidance snapshots, graphics and short videos, conferences, meetings, workshops, focus groups, and public speeches) to reach external parties and the public. During the COVID-19 Public Health Emergency (PHE), FDA considered innovative approaches and novel communication methods to reach a broad audience in an expedited manner. Now that the PHE determined under section 319 of the Public Health Service Act (42 U.S.C. 247d) is over, FDA is internally discussing the lessons learned from that experience and reassessing our current best practices for communication to look for additional areas for improvement consistent with our statutory and regulatory framework.

In accordance with section 2505(b) of the Consolidated Appropriations Act (Pub. L. 117-328) of 2023, FDA's draft report and plan on "Best Practices for FDA Communication with Interested Parties" reviews the types and methods of public communication outside of guidance that FDA uses to communicate and interact with medical product

sponsors and other external parties and identifies our current best practices for the efficient development, issuance, and use of such communications. As a part of this draft report and plan, FDA is also considering opportunities to advance the use of innovative forms of communication, to streamline the processes for regulatory submissions, and to implement innovative communication development processes and to transition or update communication practices used during the COVID-19 PHE. Pursuant to section 2505(c) of the Consolidated Appropriations Act, in this **Federal Register** notice announcing the availability of this document, FDA is seeking public comment on this “Best Practices for FDA Communication with Interested Parties: Draft Report for Public Comment.”

## II. Request for Comments

FDA is soliciting comments on its “Best Practices for FDA Communication with Interested Parties: Draft Report for Public Comment” from interested parties. Specifically, we request feedback on the following areas of communication:

### *Communications Questions*

1. Are there communication practices that other Federal agencies use to communicate with interested parties, such as regulated industry, that would be consistent with FDA’s statutory and regulatory requirements and helpful for FDA to consider implementing?

2. Recognizing that FDA used many innovative communications processes and practices during the COVID-19 public health emergency, what types of communications were most beneficial/ useful during the COVID-19 pandemic and why?

## III. Electronic Access

Persons with access to the internet may obtain the draft report and plan at <https://www.fda.gov/about-fda/reports/reports-agency-policies-and-initiatives> or <https://www.regulations.gov>.

Dated: November 25, 2024.

### P. Ritu Nalubola,

*Associate Commissioner for Policy.*

[FR Doc. 2024-28229 Filed 12-2-24; 8:45 am]

**BILLING CODE 4164-01-P**

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### Food and Drug Administration

[Docket No. FDA-2023-N-5653]

#### Food and Drug Administration Report and Plan on Best Practices for Guidance; Availability

**AGENCY:** Food and Drug Administration, HHS.

**ACTION:** Notice of availability.

**SUMMARY:** The Food and Drug Administration (FDA or Agency) is announcing the availability of a document entitled “Food and Drug Administration Report and Plan on Best Practices for Guidance” (Report and Plan). FDA is publishing this Report and Plan in response to the Consolidated Appropriations Act, 2023, which directs FDA to issue a report identifying best practices for the efficient prioritization, development, issuance, and use of guidance documents and a plan for implementation of such best practices.

**DATES:** The announcement of the report and plan is published in the **Federal Register** on December 3, 2024.

**ADDRESSES:** For access to the docket to read background documents or the electronic and written/paper comments received, go to <https://www.regulations.gov> and insert the docket number, found in brackets in the heading of this document, into the “Search” box and follow the prompts and/or go to the Dockets Management Staff, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852, 240-402-7500. See the **SUPPLEMENTARY INFORMATION** section for electronic access to the Report and Plan.

**FOR FURTHER INFORMATION CONTACT:** Julie Finegan, Office of Policy, Office of the Commissioner, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 32, Rm. 4252, Silver Spring, MD 20993-0002, 301-827-4830.

#### **SUPPLEMENTARY INFORMATION:**

### I. Background

Clear, concise, and timely communication through guidance documents is essential to the public health mission of FDA. FDA guidance documents are prepared for FDA staff, industry, and the public to describe the Agency’s interpretation of, or policy on, a regulatory issue. (21 CFR 10.115(b)). Specifically, FDA uses guidance documents to assist regulated industry, FDA staff, and the public in understanding the Agency’s current thinking on policy, scientific, medical, and regulatory issues, such as: the

design, manufacturing, and testing of regulated products; content and evaluation of applications for product approvals; and inspection and enforcement policies. Timely publication of guidance documents significantly benefits public health by providing transparency and valuable insight into approaches that may assist industry and other interested parties in complying with applicable statutes and regulations, ensuring consumer and patient safety, and developing new and innovative products to improve public health.

As part of FDA’s Transparency Initiative, in 2011, FDA publicly released a comprehensive report entitled “Food and Drug Administration Report on Good Guidance Practices: Improving Efficiency and Transparency” (2011 GGP Report).<sup>1</sup> The 2011 GGP Report identified “best practices” and made recommendations to streamline the development of guidance documents, reduce the time between issuing draft and final guidance documents, and improve access to guidance documents on FDA’s website. Since 2011, FDA has made significant strides to implement the recommendations in the 2011 GGP Report and to modernize and enhance our best practices for the efficient initiation, prioritization, development, review, clearance, and issuance of our guidance documents. As a result of these and other Agency improvement efforts, and as explained in the Report and Plan, FDA has significantly increased the number of guidance documents it publishes annually.

As part of FDA’s reassessment of its best practices for guidance and in accordance with section 2505(a) of the Consolidated Appropriations Act, 2023, FDA published a “Draft Report and Plan on Best Practices for Guidance” (Draft Report and Plan) on our website on December 28, 2023.<sup>2</sup> Pursuant to section 2505(c) of the Consolidated Appropriations Act, 2023 in a **Federal Register** notice announcing the availability of the Draft Report and Plan, FDA solicited public comment from a broad range of interested parties, including researchers; academic organizations; pharmaceutical, biotechnology, and medical device developers; clinical research

<sup>1</sup> FDA, “Food and Drug Administration Report on Good Guidance Practices: Improving Efficiency and Transparency,” available at <https://www.fda.gov/media/82644/download>.

<sup>2</sup> See <https://www.fda.gov/about-fda/reports/fda-reports-good-guidance-practices>. As explained in the Draft Report and Plan, FDA will issue a separate Report and Plan in accordance with Section 2505(b) of the Consolidated Appropriations Act, 2023.

organizations; clinical laboratories; healthcare providers; food manufacturers; and patient and consumer groups.<sup>3</sup> The 60-day public comment period closed on March 4, 2024.

FDA received over 30 sets of comments on the Draft Report and Plan from interested parties, including industry and trade groups; healthcare providers and entities; patient and consumer advocacy groups; researchers, scientific, and academic experts; and private citizens. The majority of comments focused on the following topics: (1) general best practices for guidance documents; (2) suggestions for improving FDA's current "Search for FDA Guidance Documents" web page; (3) FDA's guidance agendas; and (4) FDA's proposal to publish additional guidance documents as Level 1 "for immediate implementation" and Level 2 guidance, consistent with applicable statutes and regulations. FDA also received comments encouraging FDA's continued use of guidance to streamline the process for regulatory submissions and providing support for further Agency use of novel and innovative guidance formats. A few comments proposed specific topic areas for consideration of future guidance development. FDA convened a cross-Agency workgroup to carefully review, discuss, and consider all comments received as it prepared this Report and Plan.

FDA carefully considered all relevant comments received in developing this Report and Plan and is now announcing the availability of "Food and Drug Administration Report and Plan on Best Practices for Guidance." FDA's Report and Plan addresses many of the themes seen across comments received in response to the Draft Report and Plan. FDA appreciates all the feedback and will continue to reassess its best practices for guidance and make further improvements in the future as appropriate.

## II. Electronic Access

Persons with access to the internet may also obtain the report and plan at <https://www.fda.gov/about-fda/reports/reports-agency-policies-and-initiatives>.

Dated: November 25, 2024.

**P. Ritu Nalubola,**

*Associate Commissioner for Policy.*

[FR Doc. 2024-28228 Filed 12-2-24; 8:45 am]

**BILLING CODE 4164-01-P**

<sup>3</sup> See 89 FR 380 (January 3, 2024), available at <https://www.federalregister.gov/documents/2024/01/03/2023-28872/food-and-drug-administrations-draft-report-and-plan-on-best-practices-for-guidance-availability>.

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### National Institutes of Health

#### National Institute on Drug Abuse; Notice of Closed Meeting

Pursuant to section 1009 of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

*Name of Committee:* National Institute on Drug Abuse Special Emphasis Panel; Avenir Award Program for Genetics or Epigenetics of Substance Use Disorders.

*Date:* February 24–25, 2025.

*Time:* 10:00 a.m. to 5:00 p.m.

*Agenda:* To review and evaluate grant applications.

*Address:* National Institute of Health, National Institute on Drug Abuse, 301 North Stonestreet Avenue, Bethesda, MD 20892.

*Meeting Format:* Virtual Meeting.

*Contact Person:* Ipolia R. Ramadan, Ph.D., Scientific Review Officer, Scientific Review Branch, Division of Extramural Research, National Institute on Drug Abuse, NIH, Bethesda, MD 20892, (301) 827-4471, [ramadanir@mail.nih.gov](mailto:ramadanir@mail.nih.gov).

(Catalogue of Federal Domestic Assistance Program Nos. 93.277, Drug Abuse Scientist Development Award for Clinicians, Scientist Development Awards, and Research Scientist Awards; 93.278, Drug Abuse National Research Service Awards for Research Training; 93.279, Drug Abuse and Addiction Research Programs, National Institutes of Health, HHS)

Dated: November 27, 2024.

**Lauren A. Fleck,**

*Program Analyst, Office of Federal Advisory Committee Policy.*

[FR Doc. 2024-28355 Filed 12-2-24; 8:45 am]

**BILLING CODE 4140-01-P**

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### National Institutes of Health

#### Government-Owned Inventions; Availability for Licensing

**AGENCY:** National Institutes of Health, HHS.

**ACTION:** Notice.

**SUMMARY:** The invention listed below is owned by an agency of the U.S. Government and is available for licensing to achieve expeditious commercialization of results of federally-funded research for the benefit of the public health.

#### FOR FURTHER INFORMATION CONTACT:

Licensing information may be obtained by emailing the licensing contact Malabika Ghosh, J.D., Ph.D.; 301-827-5414; [Malabika.Ghosh@nih.gov](mailto:Malabika.Ghosh@nih.gov), at the National Heart, Lung, and Blood, Office of Technology Transfer and Development, 31 Center Drive Room 4A25, MSC2479, Bethesda, MD 20892-2479. A signed Confidential Disclosure Agreement may be required to receive any unpublished information.

#### SUPPLEMENTARY INFORMATION:

Technology description follows.

#### Analogues of N-Lactoyl-Phenylalanine, Methods of Synthesis, and Methods of Use

Available for licensing and commercial development are patent rights covering N-Lactoyl-Phenylalanine (Lac-Phe) analogues having appetite suppressant activity, which may be useful as therapeutics in the treatment of obesity and related secondary diseases. The patent rights also cover methods of synthesis of the N-Lactoyl-Phenylalanine (Lac-Phe) analogues are also disclosed, as well as methods of use and treatment of obesity and related secondary diseases with the Lac-Phe analogues.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR part 404, as well as for further development and evaluation under a research collaboration.

#### Inventors

- Alan T. Remaley, M.D., Ph.D. NHLBI
- Anna Wolska, Ph.D. NHLBI
- Amaury Lucien-Philip Dasseux

#### Potential Commercial Applications

- Therapeutics
- obesity
- obesity co-morbidities

#### Development Stage

- Preclinical (data from compound optimization and in vivo validation)

#### Intellectual Property

- NIH Reference No. E-160-2023-0, U.S. Provisional Patent Application 63/585,791 filed September 27, 2023, International Patent Application PCT/US2024/048617 filed September 26, 2024, entitled "N-Lactoyl-Phenylalanine (Lac-Phe) compound derivatives."

Dated: November 27, 2024.

**Malabika J. Ghosh,**

*Technology Transfer and Patent Specialist, National Heart, Lung, and Blood Institute, Office of Technology Transfer and Development.*

[FR Doc. 2024-28329 Filed 12-2-24; 8:45 am]

**BILLING CODE 4140-01-P**

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### National Institutes of Health

#### National Cancer Institute; Notice of Closed Meeting

Pursuant to section 1009 of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), title 5 U.S.C., as amended. The purpose of this meeting is to evaluate requests for preclinical development resources for potential new therapeutics for the treatment of cancer. The outcome of the evaluation will provide information to internal NCI committees that will decide whether NCI should support requests and make available contract resources for development of the potential therapeutic to improve the treatment of various forms of cancer. The research proposals and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the proposed research projects, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

*Name of Committee:* National Cancer Institute Special Emphasis Panel; OCT2024 Cycle 48 NExT SEP Committee Meeting.

*Date:* December 10, 2024.

*Time:* 10:00 a.m. to 3:00 p.m.

*Agenda:* To evaluate the NCI Experimental Therapeutics Program Portfolio.

*Place:* National Institutes of Health, 9000 Rockville Pike, Building 31, Room 3A44, Bethesda, Maryland 20892 (Virtual Meeting).

*Contact Persons:* Barbara Mroczkowski, Ph.D., Executive Secretary, Discovery Experimental Therapeutics Program, National Cancer Institute, NIH, 31 Center Drive, Room 3A44, Bethesda, Maryland 20817, 301-496-4291, [mroczkoskib@mail.nih.gov](mailto:mroczkoskib@mail.nih.gov).

Toby Hecht, Ph.D., Executive Secretary, Development Experimental Therapeutics Program, National Cancer Institute, NIH, 9609 Medical Center Drive, Room 3W110, Rockville, Maryland 20850, 240-276-5683, [toby.hecht2@nih.gov](mailto:toby.hecht2@nih.gov).

This notice is being published less than 15 days from the meeting date due to exceptional circumstances. An unanticipated number of projects for clinical trial support of promising experimental therapeutics treating various cancer types, including pediatric cancer, were received which delayed the identification of panel members with the appropriate expertise. If the meeting is not held on December 10, 2024, there will be a profound negative impact on translational cancer research resulting in a 6-9-month delay in funding which will significantly slow down the initiation of meritorious projects/clinical trials by one year.

(Catalogue of Federal Domestic Assistance Program Nos. 93.392, Cancer Construction; 93.393, Cancer Cause and Prevention Research; 93.394, Cancer Detection and Diagnosis Research; 93.395, Cancer Treatment Research; 93.396, Cancer Biology Research; 93.397, Cancer Centers Support; 93.398, Cancer Research Manpower; 93.399, Cancer Control, National Institutes of Health, HHS)

Dated: November 27, 2024.

**Lauren A. Fleck,**

*Program Analyst, Office of Federal Advisory Committee Policy.*

[FR Doc. 2024-28356 Filed 12-2-24; 8:45 am]

**BILLING CODE 4140-01-P**

## DEPARTMENT OF HEALTH AND HUMAN SERVICES

### National Institutes of Health

#### Eunice Kennedy Shriver National Institute of Child Health & Human Development; Notice of Closed Meeting

Pursuant to section 1009 of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

*Name of Committee:* Eunice Kennedy Shriver National Institute of Child Health and Human Development Initial Review Group Function, Integration, and Rehabilitation Sciences Study Section.

*Date:* March 17-18, 2025.

*Time:* 10:00 a.m. to 5:00 p.m.

*Agenda:* To review and evaluate grant applications.

*Address:* Eunice Kennedy Shriver National Institute of Child Health and Human

Development, 6710 Rockledge Drive, Bethesda, MD 20892.

*Meeting Format:* Virtual Meeting.

*Contact Person:* Helen Huang, Ph.D., Scientific Review Branch, Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH 6710B Rockledge Drive, Room 2137D Bethesda, MD 20892, (301) 435-8207, [Helen.Huang@nih.gov](mailto:Helen.Huang@nih.gov).

(Catalogue of Federal Domestic Assistance Program Nos. 93.864, Population Research; 93.865, Research for Mothers and Children; 93.929, Center for Medical Rehabilitation Research; 93.209, Contraception and Infertility Loan Repayment Program, National Institutes of Health, HHS)

Dated: November 26, 2024.

**Lauren A. Fleck,**

*Program Analyst, Office of Federal Advisory Committee Policy.*

[FR Doc. 2024-28242 Filed 12-2-24; 8:45 am]

**BILLING CODE 4140-01-P**

## DEPARTMENT OF HOMELAND SECURITY

### Federal Emergency Management Agency

[Docket ID: FEMA-2023-0009]

#### Community Disaster Resilience Zones and the National Risk Index

**AGENCY:** Federal Emergency Management Agency, Department of Homeland Security.

**ACTION:** Notice.

**SUMMARY:** The Federal Emergency Management Agency (FEMA) is issuing this Notice to provide an update on responses to the Community Disaster Resilience Zones and the National Risk Index request for information and share FEMA's initial designations of census tracts as Community Disaster Resilience Zones.

**FOR FURTHER INFORMATION CONTACT:** Samantha A. Medlock, Assistant Administrator for Resilience Strategy, Federal Emergency Management Agency, [fema-actionoffice-resilience-strategy@fema.dhs.gov](mailto:fema-actionoffice-resilience-strategy@fema.dhs.gov), 202-212-8007.

#### SUPPLEMENTARY INFORMATION:

##### I. Background

##### A. Community Disaster Resilience Zones Act

The Community Disaster Resilience Zones Act of 2022, Public Law 117-255, 136 Stat. 2363, amended title II of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 *et seq.*) (Stafford Act) to add a new section 206 (42 U.S.C. 5136) that requires the: (1) maintenance of a natural hazard assessment program and

development and maintenance of products for the public's use that show the risk of natural hazards through use of risk ratings at the census tract level; and (2) designation, at the census tract level, of community disaster resilience zones based on the natural hazard risk ratings derived from a natural hazard risk product maintained by the natural hazard assessment program.

Section 206 also provides FEMA the discretion to: (1) increase the Federal cost share to not more than 90 percent under the Building Resilient Infrastructure and Communities grant program for mitigation projects within, or primarily benefiting, a community disaster resilience zone; (2) provide financial and technical assistance to State, local, Tribal, and Territorial governments for project planning assistance to carry out activities in preparation for a mitigation project within, or primarily benefiting, a community disaster resilience zone; and (3) establish a process for FEMA certification, and provide certification for mitigation projects within, or primarily benefiting, a community disaster resilience zone.

#### B. National Risk Index

The National Risk Index is a publicly available dataset and online mapping application that identifies the U.S. communities most at risk for 18 different natural hazards. The 18 hazard types evaluated by the National Risk Index were chosen after reviewing FEMA-approved State Hazard Mitigation Plans for all 50 States in early 2016.<sup>1</sup> FEMA announced the availability of the National Risk Index with limited access to data in November 2020 and released a full web application, which enhanced the data and report functionality, on August 16, 2021.<sup>2</sup> The National Risk Index data and application was last updated on March 23, 2023.

The National Risk Index application visualizes natural hazard risk metrics and includes important data about expected annual loss, social vulnerability, and community resilience.<sup>3</sup> The data are derived from

probabilistic data sources or built from historic event and historic loss information and are aggregated to the county and census tract levels, thus providing a baseline risk assessment and natural hazard risk profiles.

In addition to Federal collaborators, the National Risk Index incorporates data from a wide range of relevant sources across the country to ensure the tool's robustness.<sup>4</sup> This includes more than 90 partners across the public and private sectors, including State, regional, and local government agencies; academia; private organizations; and nonprofits. While natural hazard occurrences can induce secondary natural hazard occurrences, only primary natural hazard occurrences (and not their results or after-effects) are considered in the National Risk Index. Currently, the National Risk Index does not account for future conditions or anticipated impacts due to climate change.

With current National Risk Index information, users can discover a holistic view of their community's baseline and current risk from natural hazards via online maps and data downloads. Potential users might be planners and emergency managers at the State, local, Tribal, Territorial, and Federal levels; as well as other decision makers, private sector entities, and interested members of the public.

The interactive mapping application can help decision makers better prepare for and mitigate natural hazard events by providing standardized risk data for planning and an overview of multiple risk factors. In turn, this data can help State, local, Tribal, or Territorial governments develop FEMA-approved hazard mitigation plans, required to apply for and/or receive certain FEMA assistance and mitigation grants. More importantly, use of this data can help all users plan for disasters and increase resilience.

The National Risk Index is different from other traditional hazard data and models because of the scope and scale of its analyses. For communities that do not have access to natural hazard risk assessment services, the National Risk Index is a valuable product because it uses authoritative data from a variety of

Federal, State, local, academic, non-profit, and private sector partners and contributors,<sup>5</sup> and it provides users analysis of their risk to a natural hazard. The National Risk Index leverages best-available source data and methods to provide a holistic view of the current and baseline community-level risk nationwide by combining multiple hazards with socioeconomic and built environment factors.

FEMA publishes and maintains a publicly available National Risk Index-specific technical document to highlight the National Risk Index research and methodologies for developing all components of the tool.<sup>6</sup> Previously released National Risk Index data versions, documentation, and data updates documentation are available through the National Risk Index Data Archive.

#### II. Request for Information

On May 26, 2023, FEMA issued a notice and request for information to seek input from the public on implementation of the Community Disaster Resilience Zones Act of 2022. This included updates to the methodology and data used for the National Risk Index and any other hazard assessment products; potential improvements to FEMA's provision of hazard data; the process used to designate community disaster resilience zones; financial and technical assistance for resilience or mitigation projects in or primarily benefitting community disaster resilience zones; and the community disaster resilience zone project application and certification process.<sup>7</sup>

This request for information closed for comments on July 25, 2023, during which time FEMA received responses from over 100 commentors.<sup>8</sup> The request for information responses indicated six themes: designation methodology, post-designation support, community engagement, data and the National Risk Index, equity, and community displacement.

FEMA has summarized the comments and developed summary responses based on the general themes noted above. Comments and responses may be

<sup>1</sup> More information about data availability can be found in FEMA's National Risk Index Technical Documentation. FEMA, *National Risk Index, Technical Documentation*, Chapters 5–1 to 5–2 (March 2023), [https://www.fema.gov/sites/default/files/documents/fema\\_national-risk-index-technical-documentation.pdf](https://www.fema.gov/sites/default/files/documents/fema_national-risk-index-technical-documentation.pdf) (last visited Sept. 9, 2024).

<sup>2</sup> FEMA, *National Risk Index for Natural Hazards*, <https://www.fema.gov/nri> (last visited Sept. 10, 2024).

<sup>3</sup> More information about these risk components can be found in FEMA's *National Risk Index Technical Documentation* (March 2023), <http://>

[www.fema.gov/sites/default/files/documents/fema\\_national-risk-index-technical-documentation.pdf](http://www.fema.gov/sites/default/files/documents/fema_national-risk-index-technical-documentation.pdf); FEMA, *Data Glossary*, <https://hazards.fema.gov/nri/data-glossary> (last visited May 29, 2024).

<sup>4</sup> More information on the review and selection process for data used in the National Risk Index is available in the Technical Documentation. See FEMA, *National Risk Index, Technical Documentation*, 2–4 to 2–6 (March 2023), [https://www.fema.gov/sites/default/files/documents/fema\\_national-risk-index-technical-documentation.pdf](https://www.fema.gov/sites/default/files/documents/fema_national-risk-index-technical-documentation.pdf) (last visited Sept. 8, 2024).

<sup>5</sup> FEMA, *Risk Index Contributors*, <https://hazards.fema.gov/nri/contributors> (last visited May 29, 2024).

<sup>6</sup> FEMA, *National Risk Index, Technical Documentation* (March 2023), [https://www.fema.gov/sites/default/files/documents/fema\\_national-risk-index-technical-documentation.pdf](https://www.fema.gov/sites/default/files/documents/fema_national-risk-index-technical-documentation.pdf) (last visited Sept. 19, 2024).

<sup>7</sup> 88 FR 34171 (May 26, 2023).

<sup>8</sup> The comments received on the request for information may be found in the docket, available on the Federal eRulemaking Portal at <https://www.regulations.gov/docket/FEMA-2023-0009>.

found at <https://www.fema.gov/fact-sheet/summary-request-information-implementation-community-disaster-resilience-zones>.

### III. List of Community Disaster Resilience Zones

On September 6, 2023, FEMA announced the designation of an initial set of 483 community disaster resilience zones across the United States.<sup>9</sup> To identify resilience zones, FEMA used components of the National Risk Index to identify the census tracts most at-risk and in-need. FEMA is currently working on additional designations and plans to announce them soon. These designations will help build resilience across the nation by driving Federal, public, and private resources to these designated zones.

FEMA also used the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool, a geospatial platform that identifies areas across the nation that face especially acute climate and other resilience burdens, to help focus the designations on disadvantaged communities.<sup>10</sup>

A map of the census tracts that were designated as community disaster resilience zones on September 6, 2023, can be found at <https://www.fema.gov/partnerships/community-disaster-resilience-zones>.

#### Deanne Criswell,

Administrator, Federal Emergency Management Agency.

[FR Doc. 2024-28015 Filed 12-2-24; 8:45 am]

BILLING CODE 9111-12-P

## DEPARTMENT OF HOMELAND SECURITY

### Federal Emergency Management Agency

[Docket ID: FEMA-2024-0021; OMB No. 1660-0144]

#### Agency Information Collection Activities: Submission for OMB Review, Comment Request; Individual & Community Preparedness Division (ICPD) Youth Preparedness Council (YPC) Application Form

**AGENCY:** Federal Emergency Management Agency, Department of Homeland Security.

**ACTION:** 30-Day notice of extension and request for comments.

**SUMMARY:** The Federal Emergency Management Agency (FEMA) will submit the information collection abstracted below to the Office of Management and Budget for review and clearance in accordance with the requirements of the Paperwork Reduction Act of 1995. FEMA invites the general public to take this opportunity to comment on an extension, without change, of a currently approved information collection information collection. In accordance with the requirements of the Paperwork Reduction Act of 1995, this notice seeks comments concerning this collection allowing potential candidates to apply for FEMA's Youth Preparedness Council.

**DATES:** Comments must be submitted on or before January 2, 2025.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting "Currently under 30-day Review—Open for Public Comments" or by using the search function.

**FOR FURTHER INFORMATION CONTACT:** Requests for additional information or copies of the information collection should be made to Director, Information Management Division, 500 C Street SW, Washington, DC 20472, email address [FEMA-Information-Collections-Management@fema.dhs.gov](mailto:FEMA-Information-Collections-Management@fema.dhs.gov) or Shanna Scherbinske, Emergency Management Specialist, Individual and Community Preparedness Division, 202-286-3052, and [Shanna.Scherbinske@fema.dhs.gov](mailto:Shanna.Scherbinske@fema.dhs.gov).

**SUPPLEMENTARY INFORMATION:** The FEMA Youth Preparedness Council (YPC) was formed to bring together youth leaders from across the country

who are highly interested and engaged in advocating youth preparedness and making a difference in their communities. This collection meets the requirements of 6 U.S.C. 742, National Preparedness, and Presidential Policy Directive—8 (PPD-8) which emphasize the need for involvement from all sectors of society in preparing for and responding to threats and hazards.

This application form is used to select interested council members based on dedication to public service, efforts in making a difference in their community, and potential for expanding their impact as a national advocate for youth preparedness.

Council members' involvement and activities align with goals 5.2 and 5.3 from the Quadrennial Homeland Security Review (QHSR). Members are expected to represent the youth perspective on emergency preparedness and take information back to their communities to share. Council members are expected to develop and complete preparedness-related projects.

Youth apply using personal identifiable demographic and contact information, which FEMA retains confidentially for the purposes of providing acceptance/denial responses to applicants and determining a representative sample of applicants. Letters of recommendation and academic records are required, while supplemental materials highlighting past achievements are encouraged.

This proposed information collection previously published in the **Federal Register** on July 16, 2024, at 89 FR 57923 with a 60-day public comment period. FEMA received no public comments. The purpose of this notice is to notify the public that FEMA will submit the information collection abstracted below to the Office of Management and Budget for review and clearance.

#### Collection of Information

**Title:** Individual & Community Preparedness Division (ICPD) Annual Youth Preparedness Council (YPC) Application Form.

**Type of Information Collection:** Extension, without change, of a currently approved information collection.

**OMB Number:** 1660-0144.

**FEMA Forms:** FEMA Form FF-008-FY-21-111 (formerly 008-0-0-24), FEMA Youth Preparedness Council Application.

**Abstract:** The FEMA Youth Preparedness Council (YPC) was formed to bring together youth leaders from across the country who are highly interested and engaged in advocating

<sup>9</sup> FEMA, *FEMA Designates First Communities to Receive Targeted Assistance for Hazards Resilience* (Sept. 6, 2023), <https://www.fema.gov/press-release/20230906/fema-designates-first-communities-receive-targeted-assistance-hazards> (last visited Sept. 10, 2024).

<sup>10</sup> Council on Environmental Quality, *Climate and Economic Justice Screening Tool*, <https://screeningtool.geoplatform.gov/en/> (last visited May 29, 2024).

youth preparedness and making a difference in their communities. This collection meets the requirements of 6 U.S.C. 742, National Preparedness, and Presidential Policy Directive—8 (PPD—8) which emphasize the need for involvement from all sectors of society in preparing for and responding to threats and hazards. This application form is used to select interested council members based on dedication to public service, efforts in making a difference in their community, and potential for expanding their impact as a national advocate for youth preparedness.

*Affected Public:* Individuals and Households; State, Local, or Tribal Governments.

*Estimated Number of Respondents:* 200.

*Estimated Number of Responses:* 200.

*Estimated Total Annual Burden Hours:* 283.

*Estimated Total Annual Respondent Cost:* \$2,974.

*Estimated Respondents' Operation and Maintenance Costs:* \$0.

*Estimated Respondents' Capital and Start-Up Costs:* \$0.

*Estimated Total Annual Cost to the Federal Government:* \$77,538.

### Comments

Comments may be submitted as indicated in the **ADDRESSES** caption above. Comments are solicited to (a) evaluate whether the proposed data collection is necessary for the proper performance of the Agency, including whether the information shall have practical utility; (b) evaluate the accuracy of the Agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (c) enhance the quality, utility, and clarity of the information to be collected; and (d) minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

#### Millicent Brown Wilson,

*Records Management Branch Chief, Office of the Chief Administrative Officer, Mission Support, Federal Emergency Management Agency, Department of Homeland Security.*

[FR Doc. 2024-28310 Filed 12-2-24; 8:45 am]

**BILLING CODE 9111-27-P**

## DEPARTMENT OF HOMELAND SECURITY

### Federal Emergency Management Agency

[Docket ID FEMA-2024-0035]

#### FEMA Tribal Declarations Interim Guidance

**AGENCY:** Federal Emergency Management Agency, Department of Homeland Security.

**ACTION:** Notice of availability; request for comments.

**SUMMARY:** The Federal Emergency Management Agency (FEMA) is accepting comments on interim guidance, *FEMA Tribal Declarations Interim Guidance* (Guidance). This Guidance updates FEMA's 2017 Tribal Declarations Pilot Guidance.

**DATES:** This Interim Guidance is effective December 3, 2024. Comments must be received by January 2, 2025. Late comments will be considered to the extent practicable.

**ADDRESSES:** The Guidance is available for review on <https://www.regulations.gov> using the docket number noted above. Interested persons may submit comments through the Federal eRulemaking Portal: <https://www.regulations.gov>. Follow the instructions for submitting comments.

**FOR FURTHER INFORMATION CONTACT:** Robert Pesapane, Director, Public Assistance Division, Office of Response and Recovery, DHS/FEMA, 500 C St. SW, Washington, DC 20472-3020. Phone: 202-646-3834; Email: [fema-recovery-tribal@fema.dhs.gov](mailto:fema-recovery-tribal@fema.dhs.gov).

#### SUPPLEMENTARY INFORMATION:

##### I. Public Participation

Interested persons are invited to submit comments and related materials. We will consider all comments and materials received during the comment period. If you submit a comment, include the Docket ID, indicate the specific section of this document to which each comment applies, and give the reason for each comment. All submissions must be posted to <https://www.regulations.gov>, and will include any personal information you provide. Therefore, submitting this information makes it public. For more about privacy and the docket, visit <https://www.regulations.gov/privacy-notice>.

The Guidance is available in docket ID FEMA-2024-0035. For access to the docket and to read background documents or comments received, please go to <https://www.regulations.gov> and search for the docket ID.

## II. Background

In 2022, FEMA published the 2022–2026 FEMA National Tribal Strategy to better address the needs of the 574 federally recognized Tribal Nations and recognized the need to update the Tribal Declarations Pilot Guidance. Throughout 2023, FEMA worked in a Nation-to-Nation manner with Tribal Nations across the country through extensive consultations and listening sessions to identify solutions to alleviate barriers faced by Tribal Nations when seeking Federal assistance through disaster declarations. The Guidance revision is a direct outcome of the extensive engagement with Tribal Nations.

FEMA seeks comments on the Guidance, which is available online at <https://www.regulations.gov> under docket ID FEMA-2024-0035. Based on the comments received, FEMA may make appropriate revisions to the Guidance. When or if FEMA finalizes the Guidance, FEMA will publish a notice of availability in the **Federal Register** and make the final Guidance available at <https://www.regulations.gov>. The final Guidance will not have the force and effect of law.

*Authority:* The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, 42 U.S.C. 5121, *et seq.*

#### Deanne B. Criswell,

*Administrator, Federal Emergency Management Agency.*

[FR Doc. 2024-28272 Filed 12-2-24; 8:45 am]

**BILLING CODE 9111-23-P**

## DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR-6501-N-01]

### Manufactured Housing Consensus Committee (MHCC): Notice Inviting Nominations of Individuals To Serve on the Committee

**AGENCY:** Office of the Assistant Secretary for Housing—Federal Housing Commissioner, HUD.

**ACTION:** Notice of request for nominations to serve on the Manufactured Housing Consensus Committee.

**SUMMARY:** The Department of Housing and Urban Development (HUD or the Department) invites the public to nominate individuals for appointment, with the approval of the Secretary, to the Manufactured Housing Consensus Committee (MHCC), a Federal advisory



committee established by the National Manufactured Housing Construction and Safety Standards Act of 1974, as amended by the Manufactured Housing Improvement Act of 2000. HUD will make appointments from nominations submitted in response to this Notice. Also, individuals that applied earlier this calendar year do not need to reapply; pursuant to this notice those applications are on file and may be considered for future appointments. Current MHCC members whose first term ends on December 31, 2024, are eligible for reappointment, but will need to submit their nomination to be considered.

**DATES:** The Department will accept nominations until January 2, 2025.

**ADDRESSES:** Nominations must be submitted through the following website: <https://mhcc.homeinnovation.com/Application.aspx>. Submitted nominations must be addressed to: Teresa B. Payne, Deputy Assistant Secretary—Administrator, Office of Manufactured Housing Programs, Department of Housing and Urban Development, c/o Home Innovation Research Labs; Attention: Kevin Kauffman, 400 Prince Georges Blvd., Upper Marlboro, MD 20774.

**FOR FURTHER INFORMATION CONTACT:** Teresa B. Payne, Deputy Assistant Secretary—Administrator, Office of Manufactured Housing Programs, Department of Housing and Urban Development, 451 7th Street SW, Room 9166, Washington, DC 20410; telephone 202-402-2698 (this is not a toll-free number), email [mhcc@hud.gov](mailto:mhcc@hud.gov). Individuals can dial 7-1-1 to access the Telecommunications Relay Service (TRS), which permits users to make text-based calls, including Text Telephone (TTY) and Speech to Speech (STS) calls. Individuals who require an alternative aid or service to communicate effectively with HUD should email the point of contact listed above and provide a brief description of their preferred method of communication.

**SUPPLEMENTARY INFORMATION:**

**Background**

Section 604 of the Manufactured Housing Improvement Act of 2000 (Pub. L. 106-569) amended the National Manufactured Housing Construction and Safety Standards Act of 1974 (42 U.S.C. 5401-5426) (the Act) to require the establishment of the Manufactured Housing Consensus Committee (MHCC), a Federal advisory committee, to: (1) provide periodic recommendations to the Secretary to adopt, revise, and interpret the manufactured housing

construction and safety standards; and (2) provide periodic recommendations to the Secretary to adopt, revise, and interpret the procedural and enforcement manufactured housing regulations. The Act authorizes the Secretary to appoint a total of twenty-two members to the MHCC. Twenty-one members have voting rights; the twenty-second member represents the Secretary and is a non-voting position. Service on the MHCC is voluntary. Travel and per diem for meetings is provided in accordance with Federal travel policy pursuant to 5 U.S.C. 5703.

HUD encourages nominations from highly qualified and motivated individuals of diverse backgrounds, interests, and experience, who meet the requirements set forth in the Act to serve as voting members of the MHCC for up to two terms of three years each. The MHCC expects to meet at least one to two times annually. Meetings may take place by conference call, virtually, or in person. Members of the MHCC undertake additional work commitments on subcommittees and task forces regarding issues under deliberation.

**Nominee Selection and Appointment**

Members of the MHCC are appointed to serve in one of three member categories. Nominees will be appointed to fill voting member vacancies in the following categories:

1. *Producers*—Seven individuals from producers or retailers of manufactured housing.

2. *Users*—Seven individuals representing consumer interests, such as consumer organizations, recognized consumer leaders, and owners who are residents of manufactured homes.

3. *General Interest and Public Officials*—Seven general interest and public official members.

The Act provides that the Secretary shall ensure that all interests directly and materially affected by the work of the MHCC have the opportunity for fair and equitable participation without dominance by any single interest. The Secretary may reject the appointment of any one or more individuals to ensure that there is not dominance by any single interest. For purposes of this determination, dominance is defined as a position or exercise of dominant authority, leadership, or influence by reason of superior leverage, strength, or representation.

Additional requirements governing appointment and member service include:

(1) Nominees appointed to the User category and three of the individuals appointed to the General Interest and

Public Official category shall not have a significant financial interest in any segment of the manufactured housing industry or a significant relationship to any person engaged in the manufactured housing industry.

(2) Each member serving in the User category shall be subject to a ban disallowing compensation from the manufactured housing industry during the period of, and during the one year following, his or her membership on the MHCC.

(3) Nominees selected for appointment to the MHCC shall be required to provide disclosures and certifications regarding conflict-of-interest and eligibility for membership prior to finalizing an appointment.

All selected nominees will be required to submit certifications of eligibility under the foregoing criteria, as a prerequisite to final appointment.

**Consensus Committee—Advisory Role**

The MHCC's role is solely to advise the Secretary on the subject matter described above.

**Federal Advisory Committee Act**

The MHCC is subject to the requirements of the Federal Advisory Committee Act (5 U.S.C. ch. 10), 41 CFR part 102-3 (the FACA Final Rule), and to the Presidential Memorandum, dated June 18, 2010, directing all heads of executive departments and agencies not to make any new appointments or reappointments of federally registered lobbyists to advisory committees and other boards and commissions. The June 18, 2010, Presidential Memorandum authorized the Director of the Office of Management and Budget (OMB) to issue guidance to implement this policy. On August 13, 2014, OMB issued guidance (79 FR 47482) regarding the prohibition against appointing or re-appointing federally registered lobbyists to clarify that the ban applies to persons serving on advisory committees, boards, and commissions in their individual capacity and does not apply if they are specifically appointed to represent the interests of a nongovernmental entity, a recognizable group of persons or nongovernmental entities (an industry sector, labor unions, environmental groups, etc.), or state or local governments (79 FR 47482).

**Term of Office**

MHCC members serve at the discretion of the Secretary or for a three-year term, up to two terms.

**Nominee Information**

Individuals seeking nomination to the MHCC should submit detailed



information documenting their qualifications as addressed in the Act and this notice. In furtherance of Executive Order 14035, *Executive Order on Diversity, Equity, and Inclusion, and Accessibility in the Federal Workforce* (E.O. 14035, 86 FR 34593), HUD seeks for the MHCC to reflect the diversity of stakeholders in the housing market. The nomination website listed above, therefore, contains questions to elicit demographic information. Nominees may briefly summarize why they want to be a member of the MHCC and include unique skills, knowledge, and experiences that they would bring to inform the work of the committee. Individuals may nominate themselves. HUD recommends that the application for nomination be accompanied by a resume.

#### Additional Information

The Department will make appointments and reappointments from nominations submitted in response to this Notice. Also, individuals that applied earlier this calendar year do not need to reapply; pursuant to this notice those applications are on file and may be considered for future appointments. Current MHCC members whose first term ends on December 31, 2024, are eligible for reappointment, but will need to submit their nomination to be considered.

To be considered for appointment to a position of an MHCC member whose term will expire in December of 2024 or to fill any MHCC vacancy that currently exists, the application must be submitted by January 2, 2025. Appointments will be made at the discretion of the Secretary.

**Julia R. Gordon,**

*Assistant Secretary for Housing—Federal Housing Commissioner.*

[FR Doc. 2024–28235 Filed 12–2–24; 8:45 am]

BILLING CODE P

## DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–6493–N–01]

### Section 8 Housing Assistance Payments Program—Annual Adjustment Factors, Fiscal Year 2025

**AGENCY:** Office of the Assistant Secretary for Policy Development and Research, Department of Housing and Urban Development, HUD.

**ACTION:** Notice of fiscal year (FY) 2025 Annual Adjustment Factors (AAFs).

**SUMMARY:** The United States Housing Act of 1937 requires that certain

assistance contracts signed by owners participating in the Department's Section 8 housing assistance payment programs provide annual adjustments to monthly rentals for units covered by the contracts. For owners subject to a Reserve for Replacement deposit requirement, HUD also requires that the amount of the required deposit be adjusted each year by the AAF. This notice announces FY 2025 AAFs for adjustment of contract rents on the anniversary of those assistance contracts. The factors are based on a formula using residential rent and utility cost changes from the most recent annual Bureau of Labor Statistics Consumer Price Index (CPI) survey and market rents from a total of six possible private sector rent data sources. AAFs continue to be based on the shelter and gross rent inflation factors methodology used in HUD's Fair Market Rent calculation that was adopted in FY 2024.

**DATES:** The FY 2025 AAFs are effective December 3, 2024.

**FOR FURTHER INFORMATION CONTACT:** Ryan Jones, Director, Management and Operations Division, Office of Housing Voucher Programs, Office of Public and Indian Housing, 202–708–1380, for questions relating to the Moderate Rehabilitation programs (not the Single Room Occupancy program); Norman A. Suchar, Director, Office of Special Needs Assistance Programs, Office of Community Planning and Development, 202–402–5015, for questions regarding the Single Room Occupancy (SRO) Moderate Rehabilitation program; Jennifer Larson, Director, Office of Asset Management, Office of Multifamily Housing, 202–402–7769, for questions relating to all other Section 8 programs; and Adam Bibler, Director, Program Parameters and Research Division, Office of Policy Development and Research, 202–402–6057, for technical information regarding the development of the schedules for specific areas or the methods used for calculating the AAFs. The mailing address for these individuals is: Department of Housing and Urban Development, 451 7th Street SW, Washington, DC 20410. HUD welcomes and is prepared to receive calls from individuals who are deaf or hard of hearing, as well as individuals with speech or communication disabilities. To learn more about how to make an accessible telephone call, please visit <https://www.fcc.gov/consumers/guides/telecommunications-relay-service-trs>.

**SUPPLEMENTARY INFORMATION:** The AAFs are applied at the anniversary of Housing Assistance Payment (HAP)

contracts for which rents are to be adjusted using the AAF for those calendar months commencing after the effective date of this notice. The amount that an owner is required to deposit to the Reserve for Replacement account is also adjusted annually by the most recently published AAF, at the HAP contract anniversary. AAFs are distinct from, and do not apply to the same properties as, Operating Cost Adjustment Factors (OCAFs). OCAFs are annual factors used to adjust rents for project-based rental assistance contracts issued under Section 8 of the United States Housing Act of 1937 and renewed under section 515 or section 524 of the Multifamily Assisted Housing Reform and Affordability Act of 1997 (MAHRA). HUD has published OCAFs for 2024 in the **Federal Register** at 88 FR 83571. The AAFs are also distinct from Renewal Funding Inflation Factors which help determine renewal funding for public housing agencies operating the Housing Choice Voucher program. A separate **Federal Register** notice, to be published following the passage of FY 2025 HUD appropriations, will contain the 2025 Renewal Funding Inflation Factors.

Tables showing AAFs will be available electronically from the HUD data information page at <http://www.huduser.gov/portal/datasets/aaf.html>.

#### I. Applying AAFs to Various Section 8 Programs

AAFs established by this notice are used to adjust contract rents for units assisted in certain Section 8 housing assistance payment programs during the initial (*i.e.*, pre-renewal) term of the HAP contract. There are two categories of Section 8 programs that use the AAFs:

*Category 1:* The Section 8 New Construction, Substantial Rehabilitation, and Moderate Rehabilitation programs; and

*Category 2:* The Section 8 Loan Management Set-Aside (LMSA) and Property Disposition (PD) programs.

Each Section 8 program category uses the AAFs differently. The specific application of the AAFs is determined by the law, the HAP contract, and appropriate program regulations or requirements.

AAFs are not used in the following cases:

*Renewal Rents.* AAFs are not used to determine renewal rents after expiration of the original Section 8 HAP contract. In general, renewal rents are established in accordance with the statutory provision in MAHRA, as amended, under which the HAP is renewed. After

renewal, annual rent adjustments will be provided in accordance with MAHRA.

**Budget-based Rents.** AAFs are not used for budget-based rent adjustments. For projects receiving Section 8 subsidies under the LMSA program (24 CFR part 886, subpart A) and for projects receiving Section 8 subsidies under the PD program (24 CFR part 886, subpart C), contract rents are adjusted, at HUD's option, either by applying the AAFs or by budget-based adjustments in accordance with 24 CFR 886.112(b) and 24 CFR 886.312(b). Budget-based adjustments are used for most Section 8/202 projects.

**Housing Choice Voucher Program.** AAFs are not used to adjust rents in the Tenant-Based or the Project-Based Voucher programs.

**Reserve for Replacement.** The amount that an owner is required to deposit to the Reserve for Replacement account is adjusted annually by the AAF at the HAP contract anniversary.

## II. Adjustment Procedures

This section of the notice provides a broad description of procedures for adjusting the contract rent. Technical details and requirements are described in HUD notices H 2002–10 (Section 8 New Construction and Substantial Rehabilitation, Loan Management, and Property Disposition) and PIH 97–57 (Moderate Rehabilitation). HUD publishes two separate AAF Tables, Table 1 and Table 2. The difference between Table 1 and Table 2 is that each AAF in Table 2 is 0.01 less than the corresponding AAF in Table 1. Where an AAF in Table 1 would otherwise be less than 1.0, it is set at 1.0, as required by statute; the corresponding AAF in Table 2 will also be set at 1.0, as required by statute. Because of statutory and structural distinctions among the various Section 8 programs, there are separate rent adjustment procedures for the three program categories:

### *Category 1: Section 8 New Construction, Substantial Rehabilitation, and Moderate Rehabilitation Programs*

In the Section 8 New Construction and Substantial Rehabilitation programs, the published AAF factor is applied to the pre-adjustment contract rent. In the Section 8 Moderate Rehabilitation program (both the regular program and the single room occupancy program), the published AAF is applied to the pre-adjustment base rent.

For Category 1 programs, the Table 1 AAF factor is applied before determining comparability (rent reasonableness). Comparability applies if the pre-adjustment gross rent (pre-

adjustment contract rent plus any allowance for tenant-paid utilities) is above the published Fair Market Rent (FMR).

If the comparable rent level (plus any initial difference) is lower than the contract rent as adjusted by application of the Table 1 AAF, the comparable rent level (plus any initial difference) will be the new contract rent. However, the pre-adjustment contract rent will not be decreased by application of comparability.

In all other cases (*i.e.*, unless the contract rent is reduced by comparability):

- Table 1 AAF is used for a unit occupied by a new family since the last annual contract anniversary.
- Table 2 AAF is used for a unit occupied by the same family as at the time of the last annual contract anniversary.

### *Category 2: Section 8 Loan Management Program (24 CFR Part 886, Subpart A) and Property Disposition Program (24 CFR Part 886, Subpart C)*

Category 2 programs are not currently subject to comparability. Comparability will again apply if HUD establishes regulations for conducting comparability studies under 42 U.S.C. 1437f(c)(2)(C).

The applicable AAF is determined as follows:

- Table 1 AAF is used for a unit occupied by a new family since the last annual contract anniversary.
- Table 2 AAF is used for a unit occupied by the same family as at the time of the last annual contract anniversary.

### *Category 3: Reserve for Replacement*

The amount of the deposit to the Reserve for Replacement account must be increased annually using the most recently published “AAF with Highest Utility Excluded” for the Metropolitan/Region in which the project is located as described in Section IV below. This adjustment must be made without regard to vacancies.

## III. When To Use Reduced AAFs (From AAF Table 2)

In accordance with Section 8(c)(2)(A) of the United States Housing Act of 1937 (42 U.S.C. 1437f(c)(2)(A)), the AAF is reduced by 0.01:

In Section 8 programs, for a unit occupied by the same family at the time of the last annual rent adjustment (and where the rent is not reduced by application of comparability (rent reasonableness)).

The law provides that:

[F]or any unit occupied by the same family at the time of the last annual rental

adjustment, where the assistance contract provides for the adjustment of the maximum monthly rent by applying an annual adjustment factor and where the rent for a unit is otherwise eligible for an adjustment based on the full amount of the factor . . . 0.01 shall be subtracted from the amount of the annual adjustment factor (except that the factor shall not be reduced to less than 1.0), and the adjusted rent shall not exceed the rent for a comparable unassisted unit of similar quality, type and age in the market area. 42 U.S.C. 1437f(c)(2)(A).

Legislative history for this statutory provision states that “the rationale [for lower AAFs for non-turnover units is] that operating costs are less if tenant turnover is less . . .” (see Department of Veteran Affairs and Housing and Urban Development, and Independent Agencies Appropriations for 1995, Hearings Before a Subcommittee of the Committee on Appropriations 103d Cong., 2d Sess. 591 (1994)). The Congressional Record also states the following:

Because the cost to owners of turnover-related vacancies, maintenance, and marketing are lower for long-term stable tenants, these tenants are typically charged less than recent movers in the unassisted market. Since HUD pays the full amount of any rent increases for assisted tenants in section 8 projects . . . HUD should expect to benefit from this ‘tenure discount.’ Turnover is lower in assisted properties than in the unassisted market, so the effect of the current inconsistency with market-based rent increases is exacerbated. (140 Cong. Rec. 8659, 8693 (1994)).

## IV. How To Find the AAF

AAF Table 1 and Table 2 are posted on the HUD User website at <http://www.huduser.gov/portal/datasets/aaf.html>. Both tables provide the Regional and Metropolitan Component Areas to be used in selecting a project's geographic area for the AAF. For projects located in non-metropolitan areas, select the Query Tool, AAF Documentation, State, then county to determine which Metropolitan Component Area to use when selecting the AAF for the project.

There are two numeric columns in each AAF table. The first column is used to adjust contract rent for rental units where the highest cost utility is included in the contract rent, *i.e.*, where the owner pays for the highest cost utility. The second column is used where the highest cost utility is not included in the contract rent, *i.e.*, where the tenant pays for the highest cost utility.

The applicable AAF is selected as follows:

- Determine whether Table 1 or Table 2 is applicable. In Table 1 or Table 2,

locate the AAF for the geographic area where the contract unit is located.

- Determine whether the highest cost utility is or is not included in contract rent for the contract unit.
- If highest cost utility is included, select the AAF from the column for “Highest Cost Utility Included.” If highest cost utility is not included, select the AAF from the column for “Highest Cost Utility Excluded.”

## V. Methodology

AAFs are rent inflation factors. Two types of rent inflation factors are calculated for AAFs: gross rent factors and shelter rent factors. The gross rent factor accounts for inflation in the cost of both the rent of the residence and the utilities used by the unit; the shelter rent factor accounts for the inflation in the rent of the residence but does not reflect any change in the cost of utilities. The gross rent inflation factor is designated as “Highest Cost Utility Included” and the shelter rent inflation factor is designated as “Highest Cost Utility Excluded.” HUD calculates the AAFs based on the shelter and gross rent inflation factors used in FMR calculations. The source data for AAFs therefore come from the 23 local and 4 regional CPI components (rent of primary residence and household fuels and utilities), depending on the location of the AAF area, and are combined with available measures of private data sources in calculating a weighted average shelter and gross rent inflation factor. The private measures of rent used by HUD are the RealPage average effective rent per unit; Moody’s Analytics REIS average market rent; CoStar Group average effective rent; CoreLogic, Inc. single-family combined 3-bedroom median rent; Apartment List Rent Estimate; and Zillow Observed Rent Index.

In calculating the AAF from these data, HUD first takes the annual average of each statistic, then its year-to-year change. HUD then takes the mean of changes from all available sources for each area. Next, HUD takes an average of this private-sector measure of rent inflation with rent inflation as captured by the CPI for the area, where the private-sector measure is weighted at approximately 75 percent and the CPI rent inflation measure is weighted at approximately 25 percent. HUD has determined these weights by comparing the national average of the private rent changes and changes in CPI rent of primary residence to changes in the national average of recent mover rents from the American Community Survey (ACS) from 2018 through 2022. HUD weights the private data averages and

overall CPI rent of primary residence in such a way as to minimize the root mean squared error between the resulting average and the ACS recent mover rents. For future AAFs, HUD will update the weights by adding the most recent years of ACS recent mover rents, private rent data, and CPI rent of primary residence to the analysis.

HUD uses a local measure of private rent inflation for markets that are covered by at least three of the six available sources of private rent data. HUD combines this local measure of rent inflation with either the local metropolitan area CPI rent of primary residence for the 23 areas where such data exist or the regional CPI rent in areas without a local index. For areas without at least three of the six private rent data sources available, HUD uses a regional average of private rent inflation factors alongside the regional CPI rent of primary residence. HUD constructs the regional average by taking the rental unit weighted average of the change in rents of each area in a region that does have private rent data coverage. This ensures that smaller areas that are not directly covered by the private sources will still have current rental market conditions taken into account in the calculation of the rent inflation factor for such areas.

The results of the above calculation are the “Highest Cost Utility Excluded” AAF. For the “Highest Cost Utility Included” AAF, HUD averages the result of this step with the year-to-year change in the CPI housing fuels and utilities index for the area in order to make the resulting inflation measure reflective of gross rents.

## VI. Area Definitions

To make certain that they are using the correct AAFs, users should refer to the Area Definitions Table section at <https://www.huduser.gov/portal/datasets/aaf.html>. Furthermore, users can also search for AAF area definitions using an online lookup tool available on HUD User at the link in the previous sentence. AAFs are based on the updated metropolitan area definitions published by the Office of Management and Budget (OMB) on September 14, 2018, and first incorporated by the U.S. Census Bureau into the 2019 ACS data and the corresponding FY 2022 FMRs. On July 21, 2023, OMB published Bulletin No. 23–01, which contains revisions to metropolitan area definitions. However, the U.S. Census Bureau has not yet incorporated these revisions into the data available to HUD,

and therefore HUD is not using these new definitions for FY 2025.

**Solomon Greene,**

*Principal Deputy Assistant Secretary for Policy Development and Research.*

[FR Doc. 2024–28314 Filed 12–2–24; 8:45 am]

**BILLING CODE 4210–67–P**

## DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–6474–N–01]

### Notice of Partial Claim Electronic Delivery Alternative Demonstration

**AGENCY:** Office of the Assistant Secretary for Housing—Federal Housing Commissioner, HUD.

**ACTION:** Notice, with request for comments.

**SUMMARY:** This notice announces the Partial Claim Electronic Delivery Alternative Demonstration (the Demonstration). Under the Demonstration, participating mortgagees will submit digital copies of partial claim promissory notes and subordinate mortgages (PC Documents) to HUD instead of originals, which they will retain and provide to HUD upon request. The Demonstration will include any mortgagees that elect to participate but will only include partial claim subordinate mortgages secured by mortgage properties where the use of digital copies is permissible under applicable law. When the Demonstration ends, HUD will evaluate its success, determine whether to permanently implement the Demonstration processes, and identify any other necessary changes.

**DATES:** Comments are due no later than February 3, 2025. Following the conclusion of the 60-day comment period, HUD will fully evaluate submitted comments and may modify the design of the Demonstration. HUD will then issue another notice announcing the start date of the Demonstration and will also publish a mortgagee letter with further information.

**ADDRESSES:** There are two methods for submitting public comments. All submissions must refer to the above docket number and title.

*1. Electronic Submission of Comments.* Comments may be submitted electronically through the Federal eRulemaking Portal at [www.regulations.gov](http://www.regulations.gov). HUD strongly encourages commenters to submit comments electronically. Electronic submission of comments allows the commenter maximum time to prepare

and submit a comment, ensures timely receipt by HUD, and enables HUD to make comments immediately available to the public. Comments submitted electronically through [www.regulations.gov](http://www.regulations.gov) can be viewed by other commenters and interested members of the public. Commenters should follow the instructions provided on that website to submit comments electronically.

**2. Submission of Comments by Mail.** Comments may be submitted by mail to the Regulations Division, Office of General Counsel, Department of Housing and Urban Development, 451 7th Street SW, Room 10276, Washington, DC 20410-0500.

*Note:* To receive consideration as public comments, comments must be submitted through one of the two methods specified above.

*No Facsimile Comments.* Facsimile (FAX) comments are not acceptable.

**Public Inspection of Public Comments.** HUD will make all properly submitted comments and communications available for public inspection and copying during regular business hours at the above address. Due to security measures at the HUD Headquarters building, you must schedule an appointment in advance to review the public comments by calling the Regulations Division at 202-708-3055 (this is not a toll-free number). HUD welcomes and is prepared to receive calls from individuals who are deaf or hard of hearing, as well as individuals with speech or communication disabilities. To learn more about how to make an accessible telephone call, please visit: <https://www.fcc.gov/consumers/guides/telecommunications-relay-service-trs>. Copies of all comments submitted are available for inspection and downloading at <https://www.regulations.gov/>.

**FOR FURTHER INFORMATION CONTACT:**

Elissa Saunders, Director, Office of Single Family Asset Management, Office of Housing, Department of Housing and Urban Development, 100 South Charles Street, Bank of America Building, Tower II, 11th Floor, Baltimore, MD 21201; telephone number 202-402-2378 (this is not a toll-free number). HUD welcomes and is prepared to receive calls from individuals who are deaf or hard of hearing, as well as individuals with speech or communication disabilities. To learn more about how to make an accessible telephone call, please visit <https://www.fcc.gov/consumers/guides/telecommunications-relay-service-trs>.

**SUPPLEMENTARY INFORMATION:**

## I. Background

### A. Partial Claim Processes and Mortgage Responsibilities

Pursuant to section 230(b) of the National Housing Act (12 U.S.C. 1715u), HUD will pay a partial claim to a mortgagee to cure arrearages and, in certain cases, to achieve principal reduction on an FHA-insured mortgage in default or facing imminent default. In exchange for this partial claim payment, the borrower agrees to execute PC Documents in favor of HUD.

HUD's PC Documents do not accrue interest and require repayment only when the first of the following events occurs: the maturity of the first mortgage, the sale of the property, the payoff of the first mortgage, or if provided for under the partial claim note, the termination of FHA insurance, except that HUD will agree to subordinate the partial claim note to an FHA streamline refinance.

The mortgagee is responsible for having the PC Documents executed, recording the partial claim mortgage, and delivering the original PC Documents to HUD (see 24 CFR 203.371 and HUD Handbook 4000.1 III.A.2.k.v.(H)). If the mortgagee fails to provide HUD with the original PC Documents within the required timeframes, HUD requires reimbursement of the full amount of the partial claim and partial claim incentive fee (see 24 CFR 203.371(d), specifically). The mortgagee must retain copies of the PC Documents and other required partial claim information in its servicing file. The mortgagee is currently required to retain these items in its servicing file for at least seven years after the transfer or sale of the first mortgage or termination of mortgage insurance.

### B. Partial Claim Servicing and Debt Collection

The mortgagee services the partial claim until it records the partial claim mortgage and delivers the PC Documents to HUD. Thereafter, HUD, through its Loan Servicing Contractor (LSC), services partial claims and serves as the document custodian for PC Documents.

When HUD is informed that the first mortgage is being paid in full, sold, transferred or assumed, terminated, or refinanced without resubordinating the partial claim, HUD, through its LSC, may provide a payoff figure on a partial claim. Once PC Documents become due and payable, HUD's LSC issues a payoff letter. If the borrower fails to pay the partial claim debt, it can be referred to HUD's Financial Operations Center for appropriate collection action. The

referral package includes a copy of the PC Documents.

While HUD primarily relies on copies of PC Documents to conduct its servicing and collection activities, there are limited occasions where original PC Documents are required to support such efforts. This is why HUD requires the mortgagee to deliver original PC Documents to HUD and why HUD retains original PC Documents.

HUD is aware of the costs incurred and burdens associated with the mortgagee's delivery of and HUD's retention of original PC Documents. Besides these regular costs and burdens, there are also additional costs and burdens when original PC Documents are lost during delivery and it becomes necessary to take various steps to locate the lost PC Documents and execute lost note affidavits. In light of these costs and burdens, HUD now seeks to evaluate whether mortgagees could retain original PC Documents in their servicing files and deliver them to HUD only upon HUD's request.

## II. Notice of Demonstration Program

### A. Duration

HUD will announce the start date of the Demonstration in a subsequent notice that will be issued after the conclusion of the 60-day comment period for this notice. The Demonstration will continue for five years after this start date, unless extended. Mortgagees electing to participate in the Demonstration would be required to retain original PC Documents for the same records retention timeframe as the associated first mortgage. The requirement to retain the original PC Documents would not end after the expiration of the Demonstration for any PC Documents that have been electronically submitted to HUD as part of this Demonstration.

### B. Overview

Under the Demonstration, mortgagees would, after execution of the PC Documents by all required parties, agree to: (1) submit an electronic copy of the executed partial claim note to HUD no later than 60 days from the execution date, (2) submit an electronic copy of the recorded partial claim mortgage to HUD no later than six months following the execution date, (3) retain the original PC Documents for the required duration of document retention, as described in HUD Handbook 4000.1 III.A.1.n, unless HUD otherwise instructs the mortgagee that the retention requirements have changed or that retention is no longer required, and (4) deliver the original PC Documents to

HUD upon HUD's request no later than five business days after the date of the request, or within another timeframe prescribed by HUD. Mortgagees that elect to submit electronic PC Documents for a subordinate mortgage must continue to process all future PC Documents electronically, for the duration of the Demonstration, unless a particular mortgage property is located in a jurisdiction where the use of digital documents is prohibited.

### C. Goals

The main goal of the Demonstration is to reduce the costs and burdens for mortgagees associated with the mailing and tracking of original PC Documents. The Demonstration is also intended to reduce the incidence of original PC Documents being lost during delivery, as when this occurs mortgagees have to obtain and resubmit replacements and borrowers have to re-execute lost documents. In addition, it is intended to reduce the amount of mortgagee reimbursement to HUD in connection with lost PC Documents. Finally, the Demonstration is also intended to reduce HUD's costs related to the retention of original PC Documents and to enhance HUD's ability to conduct servicing and debt collection activities associated with partial claims.

### D. Participating Mortgagees

Mortgagee participation in the Demonstration is voluntary. HUD will allow all mortgagees to participate in the Demonstration, where state and local law permits. The actions the participating mortgagees will take related to the submission of electronic PC Documents and the retention of original PC Documents will be performed without any expectation of compensation. If a mortgagee does not adhere to the requirements of the Demonstration, they may be removed from participation in the Demonstration.

### III. Impacted Regulations

For the duration of the Demonstration, participating mortgagees will not adhere to the 24 CFR 203.371(d) requirements to submit original PC Documents to HUD within certain prescribed timeframes. Failure to submit original PC Documents within these timeframes will not result in mortgagees having to reimburse HUD for the full amount of the partial claim or any partial claim incentive fee, so long as electronic copies of the PC Documents were submitted within the required timeframes and original PC Documents are delivered to HUD, upon HUD's request, within the required timeframe.

### IV. Evaluating the Success of the Demonstration

At the conclusion of the Demonstration, HUD will assess its success, determine whether to implement the Demonstration's PC Documents submission and retention processes on a permanent basis, and identify any additional changes that may be needed to implement those processes. In conducting this evaluation, HUD will assess such factors as whether the Demonstration processes: (1) reduce the costs and burdens for mortgagees associated with delivering original PC Documents to HUD, (2) reduce the number of lost original PC Documents, (3) reduce the costs and burdens for HUD associated with the retention of original PC Documents, (4) enhance HUD's ability to conduct servicing and debt collection activities associated with partial claims, and (5) allow for the assessment of risk to HUD's partial claim recoveries and FHA's Mutual Mortgage Insurance Fund.

### V. Solicitation of Public Comments

In accordance with 24 CFR part 10 and section 470 of the Housing and Urban-Rural Recovery Act of 1983 (42 U.S.C. 3542), HUD is seeking comment on the Demonstration in this **Federal Register** notice for 60 days of public comment. The public comment period will give HUD the opportunity to consider submitted comments and to be in a position to commence implementation of the Demonstration following the conclusion of the 60-day comment period and publication of an additional notice announcing the Demonstration start date. HUD will fully evaluate submitted comments before the Demonstration commences and may modify the design of the Demonstration. If HUD decides to make any changes to the Demonstration, HUD will provide separate notice to the public prior to commencing the Demonstration.

**Julia R. Gordon,**

*Assistant Secretary for Housing—Federal Housing Commissioner.*

[FR Doc. 2024-28298 Filed 12-2-24; 8:45 am]

**BILLING CODE 4210-67-P**

### DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR-6492-N-01]

### Notice of Adoption of U.S. Department of Agriculture Farm Service Agency Categorical Exclusions Pursuant to Section 109 of the National Environmental Policy Act

**AGENCY:** Office of the Secretary, HUD.

**ACTION:** Notice.

**SUMMARY:** HUD has identified categorical exclusions (CEs) to the National Environmental Policy Act (NEPA) established by the U.S. Department of Agriculture—Farm Service Agency (USDA—FSA) that cover categories of actions that HUD proposes to adopt. This notice identifies the USDA—FSA CEs and HUD's categories of proposed actions for which it intends to use USDA—FSA's CEs and describes the consultation between the agencies.

**DATES:** This action is effective upon publication.

#### FOR FURTHER INFORMATION CONTACT:

Lauren Hayes Knutson, Environmental Planning Division Director, Office of Environment and Energy, U.S. Department of Housing and Urban Development, 451 7th Street SW, Room 7282, Washington, DC 20410-5000; telephone 202-402-4270 (this is not a toll-free number); email [EnvironmentalPlanningDivision@hud.gov](mailto:EnvironmentalPlanningDivision@hud.gov). HUD welcomes and is prepared to receive calls from individuals who are deaf or hard of hearing, as well as individuals with speech and communication disabilities. To learn more about how to make an accessible telephone call, please visit <https://www.fcc.gov/consumers/guides/telecommunications-relay-service-trs>.

#### SUPPLEMENTARY INFORMATION:

#### I. Background

*National Environmental Policy Act and Categorical Exclusions*

Congress enacted the National Environmental Policy Act, 42 U.S.C. 4321-4347, (NEPA) in order to encourage productive and enjoyable harmony between humans and the environment, recognizing the profound impact of human activity and the critical importance of restoring and maintaining environmental quality to the overall welfare of humankind. 42 U.S.C. 4321, 4331. NEPA seeks to ensure that agencies consider the environmental effects of their proposed major actions in their decision-making processes and inform and involve the public in that process. NEPA created the

Council on Environmental Quality (CEQ), which promulgated NEPA implementing regulations, 40 CFR parts 1500 through 1508 (CEQ regulations).

To comply with NEPA, agencies determine the appropriate level of review for any major Federal action—an environmental impact statement (EIS), environmental assessment (EA), or categorical exclusion (CE). 40 CFR 1501.3. If a proposed action is likely to have significant environmental effects, the agency must prepare an EIS and document its decision in a record of decision. 40 CFR part 1502, 1505.2. If the proposed action is not likely to have significant environmental effects or the effects are unknown, the agency may instead prepare an EA, which involves a more concise analysis and process than does an EIS. 40 CFR 1501.5. Following the EA, the agency may conclude that the action will have no significant effects and document that conclusion in a finding of no significant impact. 40 CFR 1501.6. If the analysis concludes that the action is likely to have significant effects, however, then an EIS is required.

Under NEPA and the CEQ regulations, a Federal agency also can establish CEs—categories of actions that the agency has determined normally do not significantly affect the quality of the human environment—in their agency NEPA procedures. 42 U.S.C. 4336e(1); 40 CFR 1501.4, 1507.3(e)(2)(ii), 1508.1(d). If an agency determines that a CE covers a proposed action, it then evaluates the proposed action for extraordinary circumstances in which a normally excluded action may have a significant effect. 40 CFR 1501.4(b). If no extraordinary circumstances are present, the agency may apply the CE to the proposed action without preparing an EA or EIS. 42 U.S.C. 4336(a)(2), 40 CFR 1501.4. If extraordinary circumstances are present, the agency nevertheless may still categorically exclude the proposed action if it determines that there are circumstances that lessen the impacts or other conditions sufficient to avoid significant effects.

Section 109 of NEPA, enacted as part of the Fiscal Responsibility Act of 2023, allows a Federal agency to “adopt” another Federal agency’s CEs for proposed actions. 42 U.S.C. 4336c. To use another agency’s CEs under section 109, the borrowing agency must identify the relevant CE listed in another agency’s (“establishing agency”) NEPA procedures that covers the borrowing agency’s category of proposed actions or related actions; consult with the establishing agency to ensure that the proposed adoption of the CE for a

category of actions is appropriate; identify to the public the CE that the borrowing agency plans to use for its proposed actions; and document adoption of the CE. 42 U.S.C. 4336c. HUD has prepared this notice to meet these statutory requirements.

#### *HUD Programs*

For many HUD programs, HUD is authorized by statute to allow Responsible Entities (REs), typically states, units of general local government, and tribes, to assume responsibility to conduct NEPA reviews under HUD regulations at 24 CFR part 58. For other HUD programs, HUD performs the environmental review under 24 CFR part 50. HUD intends to apply these categorical exclusions to reviews conducted under both parts 50 and 58.

Both parts 50 and 58, as well as 24 CFR part 51, contain additional environmental requirements that certain HUD projects must comply with. Proposed actions that are categorically excluded from NEPA but still subject to these requirements are known as “Categorically Excluded Subject to” the requirements listed in 24 CFR 58.5 and 50.4 (CEST), and proposed actions that are categorically excluded from NEPA but *not* subject to these requirements are known as “Categorically Excluded Not Subject to” the requirements listed in §§ 58.5 and 50.4 (CENST). HUD has evaluated the identified USDA–FSA CEs and has designated each as CENST or CEST in Section II. USDA–FSA Categorical Exclusions.

#### *HUD Regulatory Limitations on Adopting CEs*

HUD’s regulations at 24 CFR 58.36 and 50.17 limit HUD’s ability to utilize adopted categorical exclusions without a waiver. This notice will not go into effect until 58.36 and 50.17 are amended or until a waiver of these regulations is issued.

## **II. USDA–FSA Categorical Exclusions**

HUD has identified the following CEs listed in USDA–FSA regulation, 7 CFR part 799 Subpart D—Categorical Exclusions, for adoption. Under each CE, HUD has described categories of proposed actions for which HUD, under part 50, or an RE, under part 58, may use the CE and if the activity will be evaluated as CENST or CEST. The list of categories comprises the proposed actions for which HUD contemplates using the CEs at this time, primarily in support of agricultural activities funded with HUD’s Community Development Block Grant—Disaster Recovery (CDBG–DR) program. However, HUD may

expand the use of the CEs identified below to other substantially similar agricultural activities, where appropriate.

1. *7 CFR 799.31(b)(2)(i)*: Existing fence repair.

*HUD Level of Review*: CENST.

Potential application to HUD activities:

- Repair, improvement, or minor modification of existing fences.

2. *7 CFR 799.31(b)(2)(ii)*: Improvement or repair of farm-related structures under 50 years of age.

*HUD Level of Review*: CENST.

Potential application to HUD activities:

- Repair, improvements, or minor modifications of farm-related structures under 50 years of age.

3. *7 CFR 799.32(d)(2)(i)*: Minor construction, such as a small addition.

*HUD Level of Review*: CENST.

Potential application to HUD activities:

- Minor construction, such as a small addition, without ground disturbance, of agricultural related structures.

4. *7 CFR 799.32(d)(2)(iv)*: Grading, leveling, shaping, and filling.

*HUD Level of Review*: CENST.

Potential application to HUD activities:

- Grading, leveling, shaping, and filling occurring specifically in areas with previous ground disturbance, soils that are not likely to possess intact and distinct soil horizons and have the reduced likelihood of possessing historic properties with their original depositional contexts in the area and to the depth to be excavated, also referred to as the plow zone.

5. *7 CFR 799.32(d)(2)(xiii)*: Trough or tank installation.

*HUD Level of Review*: CENST.

Potential application to HUD activities:

- Agricultural water trough or tank installation without ground disturbance.

6. *7 CFR 799.32(d)(3)(i)*: Fence installation and replacement.

*HUD Level of Review*: CENST.

Potential application to HUD activities:

- Fence installation and replacement that support agricultural needs, without ground disturbance.

7. *7 CFR 799.32(e)(2)(iii)*:

Construction of a new farm storage facility.

*HUD Level of Review*: CEST.

Potential application to HUD activities:

- Construction of a new farm storage facility with ground disturbance.

8. *7 CFR 799.32(e)(2)(xi)*: Grading, leveling, shaping, and filling in areas or to depths not previously disturbed.

*HUD Level of Review:* CEST.  
Potential application to HUD activities:

- Grading, leveling, shaping, and filling in areas or to depths not previously disturbed for agricultural efforts.

9. 7 CFR 799.32(e)(2)(xiv): Land smoothing.

*HUD Level of Review:* CEST.  
Potential application to HUD activities:

- Land smoothing for agricultural needs.

10. 7 CFR 799.32(e)(2)(xxvii): Watering tank or trough installation, if in areas not previously disturbed.

*HUD Level of Review:* CEST.  
Potential application to HUD activities:

- Agricultural watering tank or trough installation that includes new ground disturbance.

11. 7 CFR 799.32(e)(2)(xxviii): Wells.  
*HUD Level of Review:* CEST.

Potential application to HUD activities:

- Well installation and repairs for agricultural needs, with ground disturbance.

### III. Consideration of Extraordinary Circumstances

When applying the adopted CEs, HUD or the RE will evaluate the proposed action to ensure evaluation of integral elements listed above. In addition, in considering extraordinary circumstances, HUD will consider whether the proposed action has the potential to result in significant effects as described in USDA–FSA’s extraordinary circumstances listed at 7 CFR 799.33. USDA–FSA defines extraordinary circumstances in which a normally categorically excluded action may have a significant environmental effect, including, but not limited to, scientific controversy about the environmental effects of the proposal; uncertain effects or effects involving unique or unknown risks; a proposed action connected to other actions with potential impacts; a proposed action that is related to other proposed actions with cumulative impacts; proposed actions that do not comply with 40 CFR 1506.1 Limitations on actions during the NEPA process; and/or contains violations of any existing Federal, State, or local government law, policy, or requirements.

### IV. Consultation With USDA–FSA and Determination of Appropriateness

HUD and USDA–FSA began consultation in December 2023 to identify USA–FSA CEs that could apply to HUD proposed agricultural actions.

This consultation included a review of USDA–FSA’s experience developing and applying the CEs and the types of actions for which HUD plans to utilize the CEs. Based on this consultation and review, HUD has determined that the types of agricultural projects it intends to undertake are substantially similar to such projects for which USDA–FSA has applied the CE. Accordingly, the impacts of HUD projects will be substantially similar to the impacts of USDA–FSA projects, which are not significant, absent the existence of extraordinary circumstances. Therefore, HUD has determined that its proposed use of the agricultural-related CEs, as described within this notice, would be appropriate.

### V. Conclusion

This notice documents adoption of the USDA–FSA CEs listed above in accordance with 42 U.S.C. 4336c(4), and they will be available for use by HUD and REs effective either upon amendment of 24 CFR 58.36 and 50.17 or upon issuance of a waiver of these regulations.

#### Marion McFadden,

*Principal Deputy Assistant Secretary for Community Planning and Development, Office of Community Planning and Development.*

[FR Doc. 2024–28293 Filed 12–2–24; 8:45 am]

**BILLING CODE 4210–67–P**

## INTER-AMERICAN FOUNDATION

### Sunshine Act Meetings

**TIME AND DATE:** Monday, December 16, 2024 9:30am–11:00am

**PLACE:** Hybrid with public attendance held virtually

**STATUS:** Meeting of the Board of Directors, open to the public

#### MATTERS TO BE CONSIDERED:

- Call to Order
- Overview of Meeting Rules by General Counsel
- Approval of Minutes from May 7, 2024 Meeting
- Fiscal Year 2024 in Review
- Fiscal Year 2025 Planning:
  - Strategic Priorities
  - Programs & Fellowships Updates
  - Operational Updates: Move and Staff
- Adjournment

#### CONTACT PERSON FOR MORE INFORMATION:

Nicole Stinson, Associate General Counsel, (202) 683–7117 or [generalcounsel@iaf.gov](mailto:generalcounsel@iaf.gov).

*For Dial-in Information contact:* Nicole Stinson, Associate General Counsel, [generalcounsel@iaf.gov](mailto:generalcounsel@iaf.gov).

The Inter-American Foundation is holding this meeting under the Government in the Sunshine Act, 5 U.S.C. 552b and 22 CFR 1004.

#### Natalia Mandrus,

*Associate General Counsel.*

[FR Doc. 2024–28393 Filed 11–29–24; 4:15 pm]

**BILLING CODE 7025–01–P**

## DEPARTMENT OF THE INTERIOR

### National Park Service

[NPS–NER–ACAD–38762; PPNEACADSO, PPMPSPDIZ.YM0000]

### Notice of Public Meetings for the Acadia National Park Advisory Commission

**AGENCY:** National Park Service, Interior.

**ACTION:** Meeting notice.

**SUMMARY:** In accordance with the Federal Advisory Committee Act, as amended, the National Park Service (NPS) is hereby giving notice that the Acadia National Park Advisory Commission (Commission) will meet as indicated below.

**DATES:** The Commission will meet: Monday, February 3, 2025; Monday, June 2, 2025; and Monday, September 8, 2025. All scheduled meetings will begin at 1:00 p.m. and will end by 4:00 p.m. (Eastern).

**ADDRESSES:** The February 3, 2025, and June 2, 2025, meetings will be held at the training trailer at park headquarters, Acadia National Park, 20 McFarland Hill Drive, Bar Harbor, Maine 04609. The September 8, 2025, meeting will be held at the Schoodic Education and Research Center, Moore Auditorium, Winter Harbor, Maine 04693. All meetings are open to the public and a virtual participation option will be available for those who are unable to attend in person and will be closed captioned. Virtual registration and final agendas will be posted online at least seven (7) business days prior to the meeting dates at *Acadia Advisory Commission—Acadia National Park (U.S. National Park Service)*.

#### FOR FURTHER INFORMATION CONTACT:

Kathy Flanders, Superintendent’s Secretary, Acadia National Park, P.O. Box 177, Bar Harbor, Maine 04609, telephone (207) 288–8702 or [kathy\\_flanders@nps.gov](mailto:kathy_flanders@nps.gov). Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States



should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

**SUPPLEMENTARY INFORMATION:** The Commission was established by section 103 of Public Law 99–420, as amended, (16 U.S.C. 341 note), and in accordance with the Federal Advisory Committee Act (5 U.S.C. Ch. 10). The Commission advises the Secretary of the Interior and the NPS on matters relating to the management and development of Acadia National Park, including but not limited to, the acquisition of lands and interests in lands (including conservation easements on islands) and the termination of rights of use and occupancy.

The meetings are open to the public. Interested persons may make oral presentations to the Commission. Such requests should be made to the Superintendent at the beginning of the meeting. Depending on the number of persons wishing to speak, and the time available, the time for individual comments may be limited. Written comments can be sent to Kathy Flanders [see **FOR FURTHER INFORMATION CONTACT**]. All comments received will be provided to the Commission.

The Commission meeting locations may change based on inclement weather or exceptional circumstances. If a meeting location is changed, the Superintendent will issue a press release and use local newspapers to announce the change. Detailed minutes of the meeting will be available for public inspection within 90 days of the meeting.

*Purpose of the Meeting:* The Commission meeting will consist of the following proposed agenda items:

1. Superintendent's Report
2. Committee Reports:
  - Land Conservation
  - Park Use
  - Science and Education
  - Historic
3. Old Business
4. New Business
5. Chairman's Report
6. Public Comments
7. Adjournment

*Request for Accommodations:* The meeting is open to the public. Please make requests in advance for sign language interpreter services, assistive listening devices, language translation services, or other reasonable accommodations. We ask that you contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section of this notice at least seven (7) business days prior to the meeting to give the Department of the Interior sufficient

time to process your request. All reasonable accommodation requests are managed on a case-by-case basis.

*Public Disclosure of Information:* Before including your address, phone number, email address, or other personal identifying information in your comments, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

*Authority:* 5 U.S.C. Ch. 10.

**Alma Ripps,**

*Chief, Office of Policy.*

[FR Doc. 2024–28233 Filed 12–2–24; 8:45 am]

**BILLING CODE 4312–52–P**

## DEPARTMENT OF THE INTERIOR

### National Park Service

**[NPS–WASO–NAGPRA–38847;  
PPWOCRADNO–PCU00RP16.R50000]**

#### **Native American Graves Protection and Repatriation Review Committee: Notice of Nomination Solicitation**

**AGENCY:** National Park Service, Interior.

**ACTION:** Request for nominations.

**SUMMARY:** The National Park Service is soliciting nominations for the Native American Graves Protection and Repatriation Review Committee (Committee). The Secretary of the Interior will appoint one member from nominations submitted by Indian Tribes, Native Hawaiian organizations, or traditional Native American religious leaders. The appointed member must be a traditional Indian religious leader.

**DATES:** Nominations must be received by February 3, 2025.

**ADDRESSES:** Please address nominations to Melanie O'Brien, Designated Federal Officer, National Native American Graves Protection and Repatriation Review Committee, via email [nagpra\\_info@nps.gov](mailto:nagpra_info@nps.gov).

**FOR FURTHER INFORMATION CONTACT:** Melanie O'Brien, via telephone at (202) 354–2201.

**SUPPLEMENTARY INFORMATION:** The Committee was established by the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) and is regulated by the Federal Advisory Committee Act.

The Committee is responsible for:

1. Monitoring the inventory and identification process.

2. Upon request, considering findings of fact or disputes related to the inventory, summary or repatriation process.

3. Compiling an inventory of culturally unidentifiable human remains and recommending specific actions for such remains.

4. Consulting with Indian Tribes and Native Hawaiian organizations and museums on matters within the scope of the work of the Committee.

5. Consulting with the Secretary of the Interior in the development of regulations.

6. Making recommendations regarding future care of repatriated cultural items.

The Committee consists of seven members appointed by the Secretary of the Interior. The Secretary may not appoint Federal officers or employees to the Committee. Three members are appointed from nominations submitted by Indian Tribes, Native Hawaiian organizations, and traditional Native American religious leaders. At least two of these members must be traditional Indian religious leaders. Three members are appointed from nominations submitted by national museum organizations or national scientific organizations. An organization that is created by, is a part of, and is governed in any way by a parent national museum or scientific organization must submit a nomination through the parent organization. One member is appointed from a list of persons developed and consented to by all of the other members.

Members are appointed for four-year terms and incumbent members may be reappointed for two-year terms. The Committee's work is completed during public meetings. The Committee attempts to meet several times a year. In person meetings normally last two or three days while virtual meetings last three to four hours.

Members will be appointed as special Government employees (SGEs). Please be aware that members selected to serve as SGEs will be required, prior to appointment, to file a Confidential Financial Disclosure Report in order to avoid involvement in real or apparent conflicts of interest. You may find a copy of the Confidential Financial Disclosure Report at the following website: <https://www.doi.gov/ethics/special-government-employees/financial-disclosure>. Additionally, after appointment, members appointed as SGEs will be required to meet applicable financial disclosure and ethics training requirements. Please contact 202–208–7960 or [DOI\\_Ethics@sol.doi.gov](mailto:DOI_Ethics@sol.doi.gov) with any questions about the



ethics requirements for members appointed as SGEs.

Committee members serve without pay but are reimbursed for each day of committee business. Committee members are also reimbursed for travel expenses incurred in association with Committee meetings (25 U.S.C. 3006(b)(4)). Additional information regarding the Committee, including the Committee's charter, meeting procedures, and past practice, is available on the National NAGPRA Program website, at <https://www.nps.gov/nagpra/review-committee.htm>.

Nominations must:

1. Be submitted on the official letterhead of the Indian Tribe or Native Hawaiian organization.
2. Affirm that the signatory is the official authorized by the Indian Tribe or Native Hawaiian organization.
3. If submitted by a Native American traditional religious leader, affirm that the signatory meets the definition of traditional Native American religious leader (see 43 CFR 10.2 "Traditional religious leader").
4. Provide the nominator's original signature, daytime telephone number, and email address.
5. Include the nominee's full legal name, home address, home telephone number, and email address.
6. Affirm that the nominee meets the description of a traditional Indian religious leader (see 43 CFR 10.12(b)(1)).

Nominations should include a resume providing an adequate description of the nominee's qualifications, including information that would enable the Department of the Interior to make an informed decision regarding meeting the membership requirements of the Committee and permit the Department of the Interior to contact a potential member.

*Authority:* 5 U.S.C. ch. 10; 25 U.S.C. 3006.

**Alma Ripps,**

*Chief, Office of Policy.*

[FR Doc. 2024-28234 Filed 12-2-24; 8:45 am]

**BILLING CODE 4312-52-P**

## INTERNATIONAL TRADE COMMISSION

[Investigation Nos. 701-TA-609 and 731-TA-1421 (Review)]

### Steel Trailer Wheels From China; Notice of Scheduling of Expedited Five-Year Reviews

**AGENCY:** United States International Trade Commission.

**ACTION:** Notice.

**SUMMARY:** The Commission hereby gives notice of the scheduling of expedited reviews pursuant to the Tariff Act of 1930 ("the Act") to determine whether revocation of the antidumping duty and countervailing duty orders on steel trailer wheels from China would be likely to lead to continuation or recurrence of material injury within a reasonably foreseeable time.

**DATES:** November 4, 2024.

**FOR FURTHER INFORMATION CONTACT:** Alec Resch ((202) 708-1448), Office of Investigations, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000. General information concerning the Commission may also be obtained by accessing its internet server (<https://www.usitc.gov>). The public record for this proceeding may be viewed on the Commission's electronic docket (EDIS) at <https://edis.usitc.gov>.

**SUPPLEMENTARY INFORMATION:**

*Background.*—On November 4, 2024, the Commission determined that the domestic interested party group response to its notice of institution (89 FR 62783, August 1, 2024) of the subject five-year reviews was adequate and that the respondent interested party group response was inadequate. The Commission did not find any other circumstances that would warrant conducting full reviews.<sup>1</sup> Accordingly, the Commission determined that it would conduct expedited reviews pursuant to section 751(c)(3) of the Act (19 U.S.C. 1675(c)(3)).

For further information concerning the conduct of these reviews and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A and B (19 CFR part 201), and part 207, subparts A, D, E, and F (19 CFR part 207).

*Staff report.*—A staff report containing information concerning the subject matter of the reviews has been placed in the nonpublic record, and will be made available to persons on the Administrative Protective Order service list for these reviews on February 5, 2025. A public version will be issued

<sup>1</sup> A record of the Commissioners' votes, the Commission's statement on adequacy, and any individual Commissioner's statements will be available from the Office of the Secretary and at the Commission's website.

thereafter, pursuant to § 207.62(d)(4) of the Commission's rules.

*Written submissions.*—As provided in § 207.62(d) of the Commission's rules, interested parties that are parties to the reviews and that have provided individually adequate responses to the notice of institution,<sup>2</sup> and any party other than an interested party to the reviews may file written comments with the Secretary on what determination the Commission should reach in the reviews. Comments are due on or before February 13, 2025 and may not contain new factual information. Any person that is neither a party to the five-year reviews nor an interested party may submit a brief written statement (which shall not contain any new factual information) pertinent to the reviews by February 13, 2025. However, should the Department of Commerce ("Commerce") extend the time limit for its completion of the final results of its reviews, the deadline for comments (which may not contain new factual information) on Commerce's final results is three business days after the issuance of Commerce's results. If comments contain business proprietary information (BPI), they must conform with the requirements of §§ 201.6, 207.3, and 207.7 of the Commission's rules. The Commission's *Handbook on Filing Procedures*, available on the Commission's website at [https://www.usitc.gov/documents/handbook\\_on\\_filing\\_procedures.pdf](https://www.usitc.gov/documents/handbook_on_filing_procedures.pdf), elaborates upon the Commission's procedures with respect to filings.

In accordance with §§ 201.16(c) and 207.3 of the rules, each document filed by a party to the reviews must be served on all other parties to the reviews (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

*Determination.*—The Commission has determined these reviews are extraordinarily complicated and therefore has determined to exercise its authority to extend the review period by up to 90 days pursuant to 19 U.S.C. 1675(c)(5)(B).

*Authority:* These reviews are being conducted under authority of title VII of the Act; this notice is published pursuant to § 207.62 of the Commission's rules.

By order of the Commission.

<sup>2</sup> The Commission has found the responses submitted on behalf of Dexstar Wheel Division of Americana Development Inc. to be individually adequate. Comments from other interested parties will not be accepted (see 19 CFR 207.62(d)(2)).

Issued: November 26, 2024.

**Lisa Barton,**

*Secretary to the Commission.*

[FR Doc. 2024–28254 Filed 12–2–24; 8:45 am]

BILLING CODE 7020–02–P

## DEPARTMENT OF LABOR

### Agency Information Collection Activities; Submission for OMB Review; Comment Request; Respiratory Protection Standard

**ACTION:** Notice of availability; request for comments.

**SUMMARY:** The Department of Labor (DOL) is submitting this Occupational Safety & Health Administration (OSHA)-sponsored information collection request (ICR) to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995 (PRA). Public comments on the ICR are invited.

**DATES:** The OMB will consider all written comments that the agency receives on or before January 2, 2025.

**ADDRESSES:** Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to [www.reginfo.gov/public/do/PRAMain](http://www.reginfo.gov/public/do/PRAMain). Find this particular information collection by selecting “Currently under 30-day Review—Open for Public Comments” or by using the search function.

**FOR FURTHER INFORMATION CONTACT:** Nicole Bouchet by telephone at 202–693–0213, or by email at [DOL\\_PRA\\_PUBLIC@dol.gov](mailto:DOL_PRA_PUBLIC@dol.gov).

**SUPPLEMENTARY INFORMATION:** The Respiratory Protection Standard requires employers to develop a written respiratory protection program, provide medical surveillance, fit test employees, obtain certificates of analysis on cylinders, change sorbent beds and filters, to inspect emergency-use respirators, mark emergency-use respirator storage compartments, and maintain accurate employee records for fit testing and medical surveillance. For additional substantive information about this ICR, see the related notice published in the *Federal Register* on September 6, 2024 (89 FR 72899).

*Comments are invited on:* (1) whether the collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; (2) the accuracy of the agency’s estimates of the burden and cost of the collection of information,

including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility and clarity of the information collection; and (4) ways to minimize the burden of the collection of information on those who are to respond, including the use of automated collection techniques or other forms of information technology.

This information collection is subject to the PRA. A Federal agency generally cannot conduct or sponsor a collection of information, and the public is generally not required to respond to an information collection, unless the OMB approves it and displays a currently valid OMB Control Number. In addition, notwithstanding any other provisions of law, no person shall generally be subject to penalty for failing to comply with a collection of information that does not display a valid OMB Control Number. See 5 CFR 1320.5(a) and 1320.6.

DOL seeks PRA authorization for this information collection for three (3) years. OMB authorization for an ICR cannot be for more than three (3) years without renewal. The DOL notes that information collection requirements submitted to the OMB for existing ICRs receive a month-to-month extension while they undergo review.

*Agency:* DOL–OSHA.

*Title of Collection:* Respiratory Protection Standard.

*OMB Control Number:* 1218–0099.

*Affected Public:* Private Sector—Businesses or other for-profits.

*Total Estimated Number of Respondents:* 733,538.

*Total Estimated Number of Responses:* 28,796,953.

*Total Estimated Annual Time Burden:* 8,502,430 hours.

*Total Estimated Annual Other Costs Burden:* \$416,350,792.

(Authority: 44 U.S.C. 3507(a)(1)(D))

**Nicole Bouchet,**

*Senior Paperwork Reduction Act Analyst.*

[FR Doc. 2024–28226 Filed 12–2–24; 8:45 am]

BILLING CODE 4510–26–P

## DEPARTMENT OF LABOR

### Occupational Safety and Health Administration

[Docket No. OSHA–2011–0197]

#### Occupational Safety and Health State Plans; Extension of the Office of Management and Budget’s (OMB) Approval of Information Collection (Paperwork) Requirements

**AGENCY:** Occupational Safety and Health Administration (OSHA), Labor.

**ACTION:** Request for public comments.

**SUMMARY:** OSHA solicits public comments concerning its request to extend OMB’s approval of information collection regarding the State Plans program and regulations for the development and enforcement of state occupational safety and health standards.

**DATES:** Comments must be submitted (postmarked, sent, or received) by February 3, 2025.

**ADDRESSES:**

*Electronically:* You may submit comments and attachments electronically at <https://www.regulations.gov>, which is the Federal eRulemaking Portal. Follow the instructions online for submitting comments.

*Docket:* To read or download comments or other material in the docket, go to <https://www.regulations.gov>. Documents in the docket are listed in the <https://www.regulations.gov> index; however, some information (e.g., copyrighted material) is not publicly available to read or download through the websites. All submissions, including copyrighted material, are available for inspection through the OSHA Docket Office. Contact the OSHA Docket Office at (202) 693–2350 (TTY (877) 889–5627) for assistance in locating docket submissions.

*Instructions:* All submissions must include the agency name and OSHA docket number (OSHA–2011–0197) for the Information Collection Request (ICR). OSHA will place all comments, including any personal information, in the public docket, which may be made available online. Therefore, OSHA cautions interested parties about submitting personal information such as social security numbers and birthdates.

For further information on submitting comments, see the “Public Participation” heading in the section of this notice titled **SUPPLEMENTARY INFORMATION**.

**FOR FURTHER INFORMATION CONTACT:**

Seleda Perryman, Directorate of Standards and Guidance, OSHA, U.S. Department of Labor; telephone (202) 693–2222.

**SUPPLEMENTARY INFORMATION:**

#### I. Background

The Department of Labor, as part of a continuing effort to reduce paperwork and respondent (i.e., the State plans) burden, conducts a preclearance process to provide the public with an opportunity to comment on proposed and continuing information collection requirements in accordance with the Paperwork Reduction Act of 1995

(PRA-95) (44 U.S.C. 3506(c)(2)(A)). This program ensures that information is in the desired format, the reporting burden (time and costs) is minimal, the collection instruments are clearly understood, and OSHA's estimate of the information collection burden is accurate. OSHA is soliciting comments concerning the extension of the information collection requirements contained in the series of regulations establishing requirements for the submission, initial approval, continuing approval, final approval, monitoring, and evaluation of OSHA-approved State Plans:

- 29 CFR part 1902, State Plans for the Development and Enforcement of State Standards;
- 29 CFR part 1953, Changes to State Plans for the Development and Enforcement of State Standards;
- 29 CFR part 1954, Procedures for the Evaluation and Monitoring of Approved State Plans; and
- 29 CFR part 1956, State Plans for the Development and Enforcement of State Standards Applicable to State and Local Government Employees in States Without Approved Private Employee Plans.

Section 18 of the Occupational Safety and Health Act (29 U.S.C. 667) offers an opportunity to the states to assume responsibility for the development and enforcement of state standards through the mechanism of an OSHA-approved State Plan. Absent an approved plan, states are precluded from enforcing occupational safety and health standards in the private sector with respect to any issue for which Federal OSHA has promulgated a standard. Once approved and operational, the state adopts standards and provides most occupational safety and health enforcement and compliance assistance in the state under the authority of its plan, instead of Federal OSHA. States also must extend their jurisdiction to cover state and local government employees and may obtain approval of State Plans limited in scope to these workers. To obtain and maintain State Plan approval, a state must submit various documents to OSHA describing program structure and operation, including any modifications thereto as they occur, in accordance with the identified regulations. OSHA funds 50 percent of the costs required to be incurred by an approved State Plan, with the state at least matching and providing additional funding at its discretion.

## II. Special Issues for Comment

OSHA has a particular interest in comments on the following issues:

- Whether the proposed information collection requirements are necessary for the proper performance of the agency's functions to protect workers, including whether the information is useful;
- The accuracy of OSHA's estimate of the burden (time and costs) of the information collection requirements, including the validity of the methodology and assumptions used;
- The quality, utility, and clarity of the information collected; and
- Ways to minimize the burden on employers who must comply; for example, by using automated or other technological information, and transmission techniques.

## III. Proposed Actions

OSHA is requesting that OMB extend the approval of the information collection requirements contained in Occupational Safety and Health State Plans.

The agency is requesting an adjustment increase to adjust the number of burden hours associated with the developmental steps necessary for certain states in the developmental process, including Maine, Massachusetts and Illinois. In addition, the number of Complaints About State Program Administration (CASPA) and State Plan Changes were modified to depict more realistically the current trends in these numbers. As a result, the total burden hours have increased from 11,055 to 11,370 (an increase of 315 burden hours).

OSHA will summarize the comments submitted in response to this notice and will include this summary in the request to OMB to extend the approval of the information collection requirements.

*Type of Review:* Extension of a currently approved data collection.

*Title:* Occupational Safety and Health State Plans.

*OMB Control Number:* 1218-0247.

*Affected Public:* State, Local, and Tribal, Governments.

*Number of Respondents:* 29.

*Number of Responses:* 1,299.

*Frequency of Responses:* On occasion; Quarterly; Annually.

*Average Time per Response:* Varies.

*Estimated Total Burden Hours:* 11,370.

*Estimated Cost (Operation and Maintenance):* \$0.

## IV. Public Participation—Submission of Comments on This Notice and Internet Access to Comments and Submissions

You may submit comments in response to this document as follows: (1) electronically at [https://](https://www.regulations.gov)

[www.regulations.gov](https://www.regulations.gov), which is the Federal eRulemaking Portal; or (2) by facsimile (fax), if your comments, including attachments, are not longer than 10 pages you may fax them to the OSHA Docket Office at 202-693-1648. All comments, attachments, and other material must identify the agency name and the OSHA docket number for the ICR (OSHA-2011-0197). You may supplement electronic submission by uploading document files electronically.

Comments and submissions are posted without change at <https://www.regulations.gov>. Therefore, OSHA cautions commenters about submitting personal information such as social security numbers and dates of birth. Although all submissions are listed in the <https://www.regulations.gov> index, some information (e.g., copyrighted material) is not publicly available to read or download from this website. All submission, including copyrighted material, are available for inspection and copying at the OSHA Docket Office. Information on using the <https://www.regulations.gov> website to submit comments and access the docket is available at the website's "User Tips" link. Contact the OSHA Docket Office at (202) 693-2350, (TTY) (877) 889-5627 for information about materials not available from the website, and for assistance in using the internet to locate docket submissions.

## V. Authority and Signature

James S. Frederick, Deputy Assistant Secretary of Labor for Occupational Safety and Health, directed the preparation of this notice. The authority for this notice is the Paperwork Reduction Act of 1995 (44 U.S.C. 3506 *et seq.*) and Secretary of Labor's Order No. 8-2020 (85 FR 58393).

Signed at Washington, DC, on November 26, 2024.

**James S. Frederick,**

*Deputy Assistant Secretary of Labor for Occupational Safety and Health.*

[FR Doc. 2024-28305 Filed 12-2-24; 8:45 am]

**BILLING CODE 4510-26-P**

## POSTAL REGULATORY COMMISSION

[Docket No. N2024-1; Order No. 8167]

### Service Standard Changes

**AGENCY:** Postal Regulatory Commission.

**ACTION:** Notice.

**SUMMARY:** The Commission is acknowledging a recently-filed Postal Service request for an advisory opinion regarding planned changes to its processing and transportation networks.

This document invites public comments on the request and addresses several related procedural steps.

**DATES:** *Notice of intent to file a rebuttal:* November 22, 2024; *Hearing:* December 4, 2024, at 10:00 a.m., Eastern Daylight Time, Virtual.

**ADDRESSES:** Submit notices electronically via the Commission's Filing Online system at <http://www.prc.gov>. Persons interested in intervening who cannot submit their views electronically should contact the person identified in the **FOR FURTHER INFORMATION CONTACT:** David A. Trissell, General Counsel, at 202-789-6820.

**SUPPLEMENTARY INFORMATION:**

**Table of Contents**

- I. Introduction
- II. The Motions for Late Acceptance
- III. Notice of Hearing, Scheduling Witnesses, Excusing Witnesses, Setting Hearing Procedures, and Adjusting Procedural Schedule
- IV. Ordering Paragraphs

**I. Introduction**

On November 24, 2024, Douglas F. Carlson filed, and on November 25, 2024, the Commission docketed, a Motion for Late Acceptance of Notice of Intent to File Rebuttal Case<sup>1</sup> and corresponding Notice of Intent to File a Rebuttal Case.<sup>2</sup> On November 25, 2024, the American Postal Workers Union (APWU) filed a Motion for Late Acceptance of Notice of Intent to File Rebuttal Testimony<sup>3</sup> and corresponding Notice of Intent to File Rebuttal Testimony.<sup>4</sup> These motions are granted. In addition, the Commission provides notice of the hearing, sets hearing procedures, modifies the deadline for registration for the hearing, and adjusts the procedural schedule.

**II. The Motions for Late Acceptance**

Mr. Carlson requests that the Commission excuse his failure to timely file his notice because the procedural schedule listed on the Commission's website differed from those set by order. Carlson Motion at 1–2. The Commission recognizes that the information previously presented on the procedural schedule on the website conflicted with the deadlines set forth in Order No.

7695<sup>5</sup> and Order No. 7998.<sup>6</sup> The Commission further recognizes that in Order No. 7998, the Commission unilaterally modified the procedural schedule by moving a deadline up to better support the in-person hearing in this proceeding. Order No. 7998 at 2. Therefore, the Commission grants Mr. Carlson's motion.

APWU similarly states that its filing was delayed because it relied on the procedural schedule set forth in Order No. 7695. APWU Motion at 1. For the reasons expressed above, the Commission also grants the APWU Motion.

The Commission is acting expeditiously on these motions because of the pending holiday and the fact that the hearing is 4 business days from today. The Postal Service will be permitted to conduct discovery and written cross-examination on Mr. Carlson's and APWU's rebuttal testimony. The Postal Service may request oral cross-examination but must provide justification for the request.

**III. Notice of Hearing, Scheduling Witnesses, Excusing Witnesses, Setting Hearing Procedures, and Adjusting Procedural Schedule**

Additionally, although the Commission previously stated that hearings with a rebuttal case would occur December 11 to 13, 2024,<sup>7</sup> given Mr. Carlson's indication that he cannot appear in person at the hearings, the Commission hereby gives notice that a hearing on the Postal Service's direct case in the above-captioned docket shall commence at 10 a.m. ET on Wednesday, December 4, 2024. Pursuant to Order No. 7998, the hearing will be conducted in person at 901 New York Avenue NW, Suite 200, Washington, DC 20268. The hearing shall be available by livestream at [www.youtube.com/thepostalregulatorycommiss9709](http://www.youtube.com/thepostalregulatorycommiss9709).<sup>8</sup>

Furthermore, the Commission modifies the registration deadline for the hearing. Each individual seeking to attend the live hearing (including motions practice or may conduct cross-examination or follow-up cross-examination) must register by sending an email to [registration@prc.gov](mailto:registration@prc.gov) with the subject line "N2024-1 Hearing

Registration" by Monday, December 2, 2024.<sup>9</sup> Please ensure the email contains the following information:

- your first and last name;
- your email address; and
- your affiliation.

The [registration@prc.gov](mailto:registration@prc.gov) email address is used solely for the exchange of information relating to the logistics of registering for and participating in the hearing.<sup>10</sup> No information related to the substance of the cases shall be provided or communicated via that email.

The Postal Service's witnesses shall appear on December 4, 2024, at 10:00 a.m. ET. The order of the witnesses is as follows:

- Stephen B. Hagenstein (USPS-T-1)
- Arslan Saleem (USPS-T-2)
- Leslie Johnson-Frick (USPS-T-3)
- Gregory White (USPS-T-4)
- Curtis Whiteman (USPS-T-5) or witness with equivalent knowledge<sup>11</sup>

It is the Commission's intent to have all the Postal Service witnesses called and excused by 4 p.m. ET.

One of the Postal Service's witnesses, Sharon Owens (Postal Service institutional witness), is not called and is excused. Likewise, the rebuttal witnesses, namely Anita Morrison, Stephen DeMatteo, and Douglas Carlson, are not called for the December 4 hearing.

The Postal Service shall file any corrected testimony, corrected designated written-cross examination, etc., applicable to the excused witnesses with a declaration/affidavit from the witness attesting to the proposed record material, no later than December 2, 2024. The Postal Service may move to admit these materials by written motion not later than December 4, 2024. Objections to the admission of the proposed record material for these excused witnesses are due not later than December 5, 2024.

On December 2, 2024, the Postal Service shall file a "Notice of Designated Materials" identifying any corrections to the testimony or designated materials for each witness sponsored by the Postal Service. Order No. 7695 at 26. Attached to that notice shall be an Adobe PDF file that contains

<sup>1</sup> Douglas F. Carlson Motion for Late Acceptance of Notice of Intent to File Rebuttal Case, November 25, 2024 (Carlson Motion).

<sup>2</sup> Douglas F. Carlson Notice of Intent to File Rebuttal Case, November 25, 2024 (Carlson Notice).

<sup>3</sup> American Postal Workers Union, AFL-CIO Motion for Late Acceptance of Notice of Intent to File Rebuttal Testimony, November 25, 2024 (APWU Motion).

<sup>4</sup> American Postal Workers Union, AFL-CIO Notice of Intent to File Rebuttal Testimony, November 25, 2024 (APWU Notice).

<sup>5</sup> Notice and Order on the Postal Service's Request for an Advisory Opinion on Changes in the Nature of Postal Services, October 9, 2024 (Order No. 7695).

<sup>6</sup> Order Establishing Hearing Procedures, November 15, 2024 (Order No. 7998).

<sup>7</sup> See Order No. 7998, Attachment 1 at 2; Order No. 7695, Attachment 1 at 2.

<sup>8</sup> The livestream will only allow participants to view, but not interact with, the live hearing taking place at the Commission's hearing room. Registration is not required to access the livestream.

<sup>9</sup> The Commission previously set the deadline as November 22, 2024. See Order No. 7998 at 3–4.

<sup>10</sup> Please refer to the Commission's privacy policy which is available at <https://www.prc.gov/privacy>.

<sup>11</sup> If a witness with equivalent knowledge appears for Mr. Whiteman, the Postal Service should be prepared to admit Mr. Whiteman's testimony by motion. Additionally, if the witness with equivalent knowledge is unable to answer certain oral cross-examination questions, the Commission reserves the right to require Mr. Whiteman to supplement, in writing, with answers to those questions generated at the hearing.

the witness’s designated written responses in alphabetical order by the name of the party propounding the interrogatory followed by numerical order of the interrogatory (with any corrections to the responses highlighted). The Postal Service shall also contemporaneously file any corrections to testimony (with those corrections highlighted).

Rebuttal testimony and all materials in support of the case must be filed by December 4, 2024.<sup>12</sup> Parties that wish to conduct oral cross-examination of a rebuttal witness shall file notice of an intent to do so by December 5, 2024. Written discovery (cross-examination) may be served on the parties offering rebuttal testimony immediately after filing of rebuttal testimony and must be filed no later than December 6, 2024. Parties must file a Notice of Designations, consistent with the procedure described above, should they wish to designate rebuttal case

discovery responses for the record, no later than December 10, 2024. The Presiding Officer will issue a further ruling admitting designated materials into evidence shortly thereafter.

Due to the filing of a rebuttal case, the briefing schedule is also modified. Initial briefs or statements of positions are now due no later than December 18, 2024. Reply briefs may be filed no later than December 23, 2024.

**IV. Ordering Paragraphs**

*It is ordered:*

1. Douglas F. Carlson’s Motion for Late Acceptance of Notice of Intent to File Rebuttal Case, filed November 25, 2024, is granted.

2. APWU’s Motion for Late Acceptance of Notice of Intent to File Rebuttal Testimony, filed November 25, 2024, is granted.

3. The hearing on the Postal Service’s direct case in the above-captioned docket shall commence at 10 a.m. ET on

Wednesday, December 4, 2024, at the Commission’s hearing room. The Postal Service shall make the identified witnesses available at the commencement of the hearing, consistent with the body of this Order.

4. If a witness with equivalent knowledge appears for Witness Whiteman, the Postal Service shall be prepared to admit Witness Whiteman’s testimony by motion at the hearing.

5. Participants who wish to attend the hearing in-person must register via email consistent with the body of this Order.

6. The modified procedural schedule for this proceeding is set forth below the signature of this Order.

7. The Secretary shall arrange for publication of this Order in the **Federal Register**.

By the Commission.  
**Erica A. Barker,**  
*Secretary.*

**PROCEDURAL SCHEDULE FOR DOCKET NO. N2024–1**

[Modified by the Commission, November 27, 2024]

Deadlines in Preparation for Hearing:	
Filing of Notice Confirming Intent to Conduct Oral Cross-Examination .....	November 22, 2024.
Filing of Request to Present Oral Argument .....	November 22, 2024.
Filing of Notice of Designations (Parties) .....	November 26, 2024.
Filing of Notices of Designated Materials (Postal Service) .....	December 2, 2024.
Rebuttal Case Deadlines:	
Filing of Notice Confirming Intent to File a Rebuttal Case .....	November 22, 2024.
Filing of Rebuttal Case .....	December 4, 2024.
Filing of Notice Confirming Intent to Conduct Oral Cross-Examination .....	December 5, 2024.
Filing of Request to Present Oral Argument .....	December 5, 2024.
Last Filing of Discovery Requests .....	December 6, 2024.
Notice of Designations .....	December 10, 2024.
Filing of the Rebuttal Witness’ Answers to Discovery .....	December 10, 2024.
Notice of Designated Materials .....	December 11, 2024.
Surrebuttal Case Deadlines (if applicable):	
Filing of Motion for Leave to File Surrebuttal Case .....	December 6, 2024.
Filing of Response to Motion for Leave to File Surrebuttal Case .....	December 10, 2024.
Filing of Surrebuttal Case (if authorized) .....	December 13, 2024.
Hearing Dates:	
Hearings .....	December 4–6, 2024.
Briefing Deadlines:	
Filing of Initial Briefs (with Rebuttal Case) .....	December 18, 2024.
Filing of Reply Briefs (with Rebuttal Case) .....	December 23, 2024.
Statement of Position Deadline:	
Filing of Statement of Position (with Rebuttal Case) .....	December 18, 2024.
Advisory Opinion Deadline:	
Filing of Advisory Opinion .....	January 31, 2025.

[FR Doc. 2024–28306 Filed 12–2–24; 8:45 am]

**BILLING CODE 7710–FW–P**

<sup>12</sup> See Order No. 7695 at 23–24. Any motion for leave to file a surrebuttal case remains due December 6, 2024. *Id.* at 24.

**POSTAL REGULATORY COMMISSION**

[Docket Nos. MC2025–413 and K2025–411; MC2025–499 and K2025–497; MC2025–500 and K2025–498; MC2025–501 and K2025–499; MC2025–502 and K2025–500; MC2025–503 and K2025–501; MC2025–504 and K2025–502; MC2025–505 and K2025–503; MC2025–506 and K2025–504; MC2025–507 and K2025–505; MC2025–508 and K2025–506; MC2025–509 and K2025–507]

**New Postal Products**

**AGENCY:** Postal Regulatory Commission.

**ACTION:** Notice.

**SUMMARY:** The Commission is noticing a recent Postal Service filing for the Commission's consideration concerning a negotiated service agreement. This notice informs the public of the filing, invites public comment, and takes other administrative steps.

**DATES:** *Comments are due:* December 5, 2024.

**ADDRESSES:** Submit comments electronically via the Commission's Filing Online system at <https://www.prc.gov>. Those who cannot submit comments electronically should contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section by telephone for advice on filing alternatives.

**FOR FURTHER INFORMATION CONTACT:** David A. Trissell, General Counsel, at 202–789–6820.

**SUPPLEMENTARY INFORMATION:****Table of Contents**

- I. Introduction
- II. Public Proceeding(s)
- III. Summary Proceeding(s)

**I. Introduction**

Pursuant to 39 CFR 3041.405, the Commission gives notice that the Postal Service filed request(s) for the Commission to consider matters related to Competitive negotiated service agreement(s). The request(s) may propose the addition of a negotiated service agreement from the Competitive product list or the modification of an existing product currently appearing on the Competitive product list.

The public portions of the Postal Service's request(s) can be accessed via the Commission's website (<https://www.prc.gov>). Non-public portions of the Postal Service's request(s), if any, can be accessed through compliance with the requirements of 39 CFR 3011.301.<sup>1</sup>

<sup>1</sup> See Docket No. RM2018–3, Order Adopting Final Rules Relating to Non-Public Information, June 27, 2018, Attachment A at 19–22 (Order No. 4679).

Section II identifies the docket number(s) associated with each Postal Service request, if any, that will be reviewed in a public proceeding as defined by 39 CFR 3010.101(p), the title of each such request, the request's acceptance date, and the authority cited by the Postal Service for each request. For each such request, the Commission appoints an officer of the Commission to represent the interests of the general public in the proceeding, pursuant to 39 U.S.C. 505 and 39 CFR 3000.114 (Public Representative). Section II also establishes comment deadline(s) pertaining to each such request.

The Commission invites comments on whether the Postal Service's request(s) identified in Section II, if any, are consistent with the policies of title 39. Applicable statutory and regulatory requirements include 39 U.S.C. 3632, 39 U.S.C. 3633, 39 U.S.C. 3642, 39 CFR part 3035, and 39 CFR part 3041. Comment deadline(s) for each such request, if any, appear in Section II.

Section III identifies the docket number(s) associated with each Postal Service request, if any, to add a standardized distinct product to the Competitive product list or to amend a standardized distinct product, the title of each such request, the request's acceptance date, and the authority cited by the Postal Service for each request. Standardized distinct products are negotiated service agreements that are variations of one or more Competitive products, and for which financial models, minimum rates, and classification criteria have undergone advance Commission review. See 39 CFR 3041.110(n); 39 CFR 3041.205(a). Such requests are reviewed in summary proceedings pursuant to 39 CFR 3041.325(c)(2) and 39 CFR 3041.505(f)(1). Pursuant to 39 CFR 3041.405(c)-(d), the Commission does not appoint a Public Representative or request public comment in proceedings to review such requests.

**II. Public Proceeding(s)**

1. *Docket No(s):* MC2025–413 and K2025–411; *Filing Title:* USPS Request to Add Priority Mail Express International, Priority Mail International & First-Class Package International Service Contract 52 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 25, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Katalin Clendenin; *Comments Due:* December 5, 2024.

2. *Docket No(s):* MC2025–499 and K2025–497; *Filing Title:* USPS Request to Add Priority Mail Express, Priority

Mail & USPS Ground Advantage Contract 794 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 25, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Arif Hafiz; *Comments Due:* December 5, 2024.

3. *Docket No(s):* MC2025–500 and K2025–498; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 795 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 25, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Arif Hafiz; *Comments Due:* December 5, 2024.

4. *Docket No(s):* MC2025–501 and K2025–499; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 796 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 25, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Arif Hafiz; *Comments Due:* December 5, 2024.

5. *Docket No(s):* MC2025–502 and K2025–500; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 797 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 25, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Gregory Stanton; *Comments Due:* December 5, 2024.

6. *Docket No(s):* MC2025–503 and K2025–501; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 798 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 25, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Gregory Stanton; *Comments Due:* December 5, 2024.

7. *Docket No(s):* MC2025–504 and K2025–502; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 799 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 25, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Gregory Stanton; *Comments Due:* December 5, 2024.

8. *Docket No(s)*.: MC2025–505 and K2025–503; *Filing Title*: USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 800 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 25, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Samuel Robinson; *Comments Due*: December 5, 2024.

9. *Docket No(s)*.: MC2025–506 and K2025–504; *Filing Title*: USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 801 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 25, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Samuel Robinson; *Comments Due*: December 5, 2024.

10. *Docket No(s)*.: MC2025–507 and K2025–505; *Filing Title*: USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 802 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 25, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Jennaca Upperman; *Comments Due*: December 5, 2024.

11. *Docket No(s)*.: MC2025–508 and K2025–506; *Filing Title*: USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 803 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 25, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Jennaca Upperman; *Comments Due*: December 5, 2024.

12. *Docket No(s)*.: MC2025–509 and K2025–507; *Filing Title*: USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 804 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 25, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Jennaca Upperman; *Comments Due*: December 5, 2024.

### III. Summary Proceeding(s)

None. See Section II for public proceedings.

This Notice will be published in the **Federal Register**.

**Erica A. Barker,**

*Secretary.*

[FR Doc. 2024–28232 Filed 12–2–24; 8:45 am]

**BILLING CODE 7710–FW–P**

## POSTAL REGULATORY COMMISSION

[Docket No. CP2024–515; Order No. 8168]

### Inbound Express Mail Service 2

**AGENCY:** Postal Regulatory Commission.

**ACTION:** Notice.

**SUMMARY:** The Commission is acknowledging a recent Postal Service filing of its intention to submit rates in a different format. This document informs the public of the filing, invites public comment, and takes other administrative steps.

**DATES:** *Comments are due:* December 13, 2024.

**ADDRESSES:** Submit comments electronically via the Commission’s Filing Online system at <https://www.prc.gov>. Those who cannot submit comments electronically should contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section by telephone for advice on filing alternatives.

**FOR FURTHER INFORMATION CONTACT:** David A. Trissell, General Counsel, at 202–789–6820.

### SUPPLEMENTARY INFORMATION:

#### Table of Contents

- I. Introduction
- II. Contents of Filing
- III. Commission Action
- IV. Ordering Paragraphs

#### I. Introduction

On August 29, 2024, the Commission approved the Postal Service’s proposal to change rates not of general applicability for Inbound Express Mail Service (EMS) 2, effective January 1, 2025.<sup>1</sup> The Postal Service states that after submitting the approved per-item and per-kilogram rates to the Universal Postal Union (UPU), the International Bureau (IB) directed the Postal Service to submit rates in a different format—a single flat rate per EMS item.<sup>2</sup> Pursuant to 39 CFR 3035.105, on November 26, 2024, the Postal Service filed notice regarding updated financial workpapers containing the rates that were submitted

<sup>1</sup> Order Approving Changes in Prices for Inbound EMS 2, August 29, 2024 (Order No. 7432).

<sup>2</sup> Notice of the United States Postal Service of Updated Financial Workpapers for Rates for Inbound EMS 2, November 26, 2024, at 1–2 (Notice).

to the UPU in the new single flat rate format. See Notice.

## II. Contents of Filing

The Postal Service filed a redacted version of the updated financial workpapers along with a new certified statement in accordance with 39 CFR 3035.105(c)(2). Notice at 2. The Postal Service filed the unredacted version of the updated financial workpapers under seal. *Id.* at 2 n.4.

## III. Commission Action

The Commission reactivates Docket No. CP2024–515 for consideration of matters raised by the Notice. Pursuant to 39 U.S.C. 505, Katalin Clendenin shall continue to serve as Public Representative in this docket.

The Commission invites comments on whether the Postal Service’s filing is consistent with 39 U.S.C. 3632, 3633, and 3642 and 39 CFR part 3035. Comments are due no later than December 13, 2024. The public portions of the filing can be accessed via the Commission’s website (<https://www.prc.gov>). Non-public portions of the Postal Service’s filing can be accessed through compliance with the requirements of 39 CFR part 3011.

## IV. Ordering Paragraphs

*It is ordered:*

1. The Commission establishes Docket No. CP2024–515 for consideration of the matters raised by the Postal Service’s Notice.

2. Pursuant to 39 U.S.C. 505, Katalin Clendenin shall continue to serve as an officer of the Commission to represent the interests of the general public in this proceeding (Public Representative).

3. Comments are due no later than December 13, 2024.

4. The Secretary shall arrange for publication of this order in the **Federal Register**.

By the Commission.

**Erica A. Barker,**

*Secretary.*

[FR Doc. 2024–28346 Filed 12–2–24; 8:45 am]

**BILLING CODE 7710–FW–P**



**POSTAL REGULATORY COMMISSION**

[Docket Nos. MC2025–477 and K2025–474; MC2025–510 and K2025–508; MC2025–511 and K2025–509; MC2025–512 and K2025–510; MC2025–513 and K2025–511; MC2025–514 and K2025–512; MC2025–515 and K2025–513; MC2025–516 and K2025–514; MC2025–517 and K2025–515; MC2025–518 and K2025–516; MC2025–519 and K2025–517]

**New Postal Products**

**AGENCY:** Postal Regulatory Commission.

**ACTION:** Notice.

**SUMMARY:** The Commission is noticing a recent Postal Service filing for the Commission's consideration concerning a negotiated service agreement. This notice informs the public of the filing, invites public comment, and takes other administrative steps.

**DATES:** *Comments are due:* December 6, 2024.

**ADDRESSES:** Submit comments electronically via the Commission's Filing Online system at <https://www.prc.gov>. Those who cannot submit comments electronically should contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section by telephone for advice on filing alternatives.

**FOR FURTHER INFORMATION CONTACT:** David A. Trissell, General Counsel, at 202–789–6820.

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**I. Introduction**

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The public portions of the Postal Service's request(s) can be accessed via the Commission's website (<https://www.prc.gov>). Non-public portions of the Postal Service's request(s), if any, can be accessed through compliance with the requirements of 39 CFR 3011.301.<sup>1</sup>

<sup>1</sup> See Docket No. RM2018–3, Order Adopting Final Rules Relating to Non-Public Information, June 27, 2018, Attachment A at 19–22 (Order No. 4679).

Section II identifies the docket number(s) associated with each Postal Service request, if any, that will be reviewed in a public proceeding as defined by 39 CFR 3010.101(p), the title of each such request, the request's acceptance date, and the authority cited by the Postal Service for each request. For each such request, the Commission appoints an officer of the Commission to represent the interests of the general public in the proceeding, pursuant to 39 U.S.C. 505 and 39 CFR 3000.114 (Public Representative). Section II also establishes comment deadline(s) pertaining to each such request.

The Commission invites comments on whether the Postal Service's request(s) identified in Section II, if any, are consistent with the policies of title 39. Applicable statutory and regulatory requirements include 39 U.S.C. 3632, 39 U.S.C. 3633, 39 U.S.C. 3642, 39 CFR part 3035, and 39 CFR part 3041. Comment deadline(s) for each such request, if any, appear in Section II.

Section III identifies the docket number(s) associated with each Postal Service request, if any, to add a standardized distinct product to the Competitive product list or to amend a standardized distinct product, the title of each such request, the request's acceptance date, and the authority cited by the Postal Service for each request. Standardized distinct products are negotiated service agreements that are variations of one or more Competitive products, and for which financial models, minimum rates, and classification criteria have undergone advance Commission review. See 39 CFR 3041.110(n); 39 CFR 3041.205(a). Such requests are reviewed in summary proceedings pursuant to 39 CFR 3041.325(c)(2) and 39 CFR 3041.505(f)(1). Pursuant to 39 CFR 3041.405(c)–(d), the Commission does not appoint a Public Representative or request public comment in proceedings to review such requests.

**II. Public Proceeding(s)**

1. *Docket No(s):* MC2025–477 and K2025–474; *Filing Title:* USPS Request to Add Priority Mail & USPS Ground Advantage Contract 478 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 22, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Christopher Mohr; *Comments Due:* December 6, 2024.

2. *Docket No(s):* MC2025–510 and K2025–508; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 805 to the Competitive Product

List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 26, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Maxine Bradley; *Comments Due:* December 6, 2024.

3. *Docket No(s):* MC2025–511 and K2025–509; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 806 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 26, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Christopher Mohr; *Comments Due:* December 6, 2024.

4. *Docket No(s):* MC2025–512 and K2025–510; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 807 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 26, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Maxine Bradley; *Comments Due:* December 6, 2024.

5. *Docket No(s):* MC2025–513 and K2025–511; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 808 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 26, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Christopher Mohr; *Comments Due:* December 6, 2024.

6. *Docket No(s):* MC2025–514 and K2025–512; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 809 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 26, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Maxine Bradley; *Comments Due:* December 6, 2024.

7. *Docket No(s):* MC2025–515 and K2025–513; *Filing Title:* USPS Request to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 810 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date:* November 26, 2024; *Filing Authority:* 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative:* Christopher Mohr; *Comments Due:* December 6, 2024.

8. *Docket No(s):* MC2025–516 and K2025–514; *Filing Title:* USPS Request

to Add Priority Mail Express, Priority Mail & USPS Ground Advantage Contract 811 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 26, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Maxine Bradley; *Comments Due*: December 6, 2024.

9. *Docket No(s)*: MC2025–517 and K2025–515; *Filing Title*: USPS Request to Add Priority Mail & USPS Ground Advantage Contract 485 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 26, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Jennaca Upperman; *Comments Due*: December 6, 2024.

10. *Docket No(s)*: MC2025–518 and K2025–516; *Filing Title*: USPS Request to Add Priority Mail & USPS Ground Advantage Contract 486 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 26, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Christopher Mohr; *Comments Due*: December 6, 2024.

11. *Docket No(s)*: MC2025–519 and K2025–517; *Filing Title*: USPS Request to Add Priority Mail & USPS Ground Advantage Contract 487 to the Competitive Product List and Notice of Filing Materials Under Seal; *Filing Acceptance Date*: November 26, 2024; *Filing Authority*: 39 U.S.C. 3642, 39 CFR 3035.105, and 39 CFR 3041.310; *Public Representative*: Jennaca Upperman; *Comments Due*: December 6, 2024.

### III. Summary Proceeding(s)

None. See Section II for public proceedings.

This Notice will be published in the **Federal Register**.

**Erica A. Barker**,  
Secretary.

[FR Doc. 2024–28349 Filed 12–2–24; 8:45 am]

**BILLING CODE 7710–FW–P**

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–101766; File No. SR–NASDAQ–2024–016]

### Self-Regulatory Organizations; The Nasdaq Stock Market LLC; Order Disapproving Proposed Rule Change To Increase Fees for Certain Market Data and Connectivity Products and To Maintain the Current Fees for Such Products if Members Meet a Minimum Average Daily Displayed Volume Threshold

November 26, 2024.

#### I. Introduction

On March 22, 2024, The Nasdaq Stock Market LLC (“Nasdaq” or “Exchange”) filed with the Securities and Exchange Commission (“Commission” or “SEC”), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Exchange Act”),<sup>1</sup> and Rule 19b–4 thereunder,<sup>2</sup> a proposed rule change to increase fees for certain market data and connectivity products and to maintain the current fees for such products if members meet a minimum average daily displayed volume threshold (“Proposal”).<sup>3</sup> The proposed rule change was immediately effective upon filing with the Commission pursuant to Section 19(b)(3)(A) of the Exchange Act.<sup>4</sup> The proposed rule change was published for comment in the **Federal Register** on April 5, 2024.<sup>5</sup> The Commission has received comment letters on the proposed rule change and a letter responding to comments from Nasdaq.<sup>6</sup> On May 21, 2024, the Commission issued an order temporarily suspending the proposed rule change pursuant to Section 19(b)(3)(C) of the Exchange Act<sup>7</sup> and

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b–4.

<sup>3</sup> See Securities Exchange Act Release No. 99879 (April 1, 2024), 89 FR 24070 (“Notice”).

<sup>4</sup> 15 U.S.C. 78s(b)(3)(A). A proposed rule change may take effect upon filing with the Commission if it is designated by the exchange as “establishing or changing a due, fee, or other charge imposed by the self-regulatory organization on any person, whether or not the person is a member of the self-regulatory organization.” 15 U.S.C. 78s(b)(3)(A)(ii).

<sup>5</sup> See Notice, *supra* note 3. As part of the Proposal, the Exchange included an Exhibit 3 containing a paper in support of its proposed rule change written by Nasdaq Economic Research. See Phil Mackintosh & Michael Normyle, Nasdaq Economic Research, “How Exchanges Compete: An Economic Analysis of Platform Competition” (February 2024), available at <https://www.sec.gov/files/rules/sro/nasdaq/2024/34-99879-ex3.pdf> (“Nasdaq Paper”).

<sup>6</sup> Comments received on the Proposal are available at <https://www.sec.gov/comments/sr-nasdaq-2024-016/srnasdaq2024016.htm>. All comments received opposed the proposed rule change.

<sup>7</sup> 15 U.S.C. 78s(b)(3)(C).

simultaneously instituting proceedings under Section 19(b)(2)(B) of the Exchange Act<sup>8</sup> to determine whether to approve or disapprove the proposed rule change.<sup>9</sup> On October 1, 2024, the Commission designated a longer period for Commission action on the proposed rule change.<sup>10</sup> This order disapproves the proposed rule change.

This order disapproves the proposed rule change because, as discussed below, the Exchange has not met its burden under the Exchange Act and the Commission’s Rules of Practice to demonstrate that the Proposal is consistent with the requirements of Sections 6(b)(4), (b)(5), and (b)(8) of the Exchange Act, in particular the requirements that the rules of a national securities exchange “provide for the equitable allocation of reasonable dues, fees, and other charges among its members and issuers and other persons using its facilities,” not be “designed to permit unfair discrimination between customers, issuers, brokers, or dealers,” and “not impose any burden on competition not necessary or appropriate in furtherance of the purposes of [the Exchange Act],” as well as Section 11A of the Exchange Act and Rules 603(a)(1) and 603(a)(2) of Regulation NMS which, among other things, require the Exchange to distribute market data on terms that are “fair and reasonable” and “not unreasonably discriminatory.”<sup>11</sup>

#### II. Description of the Proposed Rule Change and Exchange’s Representations

As described in more detail in the Notice and Order Instituting Proceedings, the Exchange proposes to increase non-member and member firm fees for Non-Display Usage<sup>12</sup> of depth-of-book data and the fees for the Exchange’s 40Gb and 10Gb Ultra high-speed connections to the Exchange. However, the Exchange proposes to continue to charge the current fees for

<sup>8</sup> 15 U.S.C. 78s(b)(2)(B).

<sup>9</sup> See Securities Exchange Act Release No. 100188, 89 FR 46243 (May 28, 2024) (“Order Instituting Proceedings”).

<sup>10</sup> See Securities Exchange Act Release No. 101224, 89 FR 81129 (October 7, 2024).

<sup>11</sup> 15 U.S.C. 78f(b)(4), (5), and (8), 15 U.S.C. 78k–1(a)(1)(C)(i)–(iv), 17 CFR 242.603(a)(1) and 17 CFR 242.603(a)(2).

<sup>12</sup> See Notice, *supra* note 3, at 24070 (stating that Non-Display Usage is any method of accessing Nasdaq U.S. information that involves access or use by a machine or automated device without access or use of a display by a natural person and providing examples of Non-Display Usage). The Exchange also states that, although either top-of-book or depth-of-book data can be used for Non-Display Usage, the Proposal modifies fees for depth-of-book data only. See *id.* (citing Equity 7, Section 123 (Nasdaq Depth-of-Book data)).

Non-Display Usage of depth-of-book data and the 40Gb and 10Gb Ultra high-speed connections to member firms that meet a minimum average daily displayed volume (“Minimum ADV”). The Exchange proposes Minimum ADV to mean the introduction by a member firm of at least one million shares of added executed displayed liquidity on average per trading day in all securities through one or more of the member firm’s market participant identifiers (“MPIDs”) on Nasdaq.<sup>13</sup> Average daily volume is calculated as the total volume of shares executed for all added displayed orders in all securities during the trading month divided by the number of trading days in that month, averaged over the six-month period preceding the billing month, or the date the firm became a member, whichever is shorter.<sup>14</sup> New members will be deemed to meet the Minimum ADV for the first month of operation.<sup>15</sup> Minimum ADV excludes sponsored access by a member on behalf of a third party.<sup>16</sup>

The Exchange currently assesses non-member and member firms Non-Display Usage fees for depth-of-book data on a per-subscriber or per-firm basis with monthly fees of \$375 per subscriber for 1–39 subscribers; \$15,000 per firm for 40–99 subscribers; \$30,000 per firm for 100–249 subscribers; and \$75,000 per firm for 250 or more subscribers.<sup>17</sup> The Exchange currently assesses monthly fees of \$21,100 for the 40Gb fiber connection and \$15,825 for the 10Gb Ultra connection to the Nasdaq equities and options exchanges.<sup>18</sup> The Exchange proposes to maintain these fees for member firms that meet the Minimum ADV.<sup>19</sup> Under the Proposal, non-member firms and member firms that do not meet the Minimum ADV would pay higher monthly fees of \$500 per subscriber for 1–39 subscribers; \$20,000 per firm for 40–99 subscribers; \$40,000 per firm for 100–249 subscribers; and \$100,000 per firm for 250 or more subscribers.<sup>20</sup> Non-member firms and member firms that do not meet the Minimum ADV would also pay higher monthly fees of \$23,700 for the 40Gb fiber connection and \$17,800 for the 10Gb Ultra connection.<sup>21</sup>

The Exchange states that the Minimum ADV is set at a level that any member should be able to meet without significant effort.<sup>22</sup> The Exchange also states that, because the Minimum ADV applies to displayed liquidity only, the proposed rule should not impact the best execution obligations of any member.<sup>23</sup> The Exchange states that, if all its members were to meet the Minimum ADV, the proposed rule would add an incremental 60–80 million shares to Nasdaq’s accessible liquidity.<sup>24</sup> The Exchange proposes higher fees for non-members that do not post displayed liquidity to the market because, according to the Exchange, non-members do not directly contribute order flow to the Exchange, but nevertheless benefit from that order flow through tighter spreads, better prices, and the other advantages of a more liquid platform.<sup>25</sup>

### III. Discussion and Commission Findings

#### A. Applicable Standard of Review

Under Section 19(b)(2)(C) of the Exchange Act,<sup>26</sup> the Commission shall approve the proposed rule change of a self-regulatory organization (“SRO”) if the Commission finds that the proposed rule change is consistent with the requirements of the Exchange Act and the applicable rules and regulations thereunder; if it does not make such a finding, the Commission shall disapprove the proposed rule change. Additionally, under Rule 700(b)(3) of the Commission’s Rules of Practice, the “burden to demonstrate that a proposed rule change is consistent with [the Exchange Act] and the rules and regulations issued thereunder . . . is on the self-regulatory organization that proposed the rule change.”<sup>27</sup> The description of a proposed rule change, its purpose and operation, its effect, and a legal analysis of its consistency with applicable requirements must be sufficiently detailed and specific to support an affirmative Commission finding.<sup>28</sup> Any failure of an SRO to provide this information may result in the Commission not having a sufficient basis to make an affirmative finding that a proposed rule change is consistent with the Exchange Act and the applicable rules and regulations issued thereunder that are applicable to the

SRO.<sup>29</sup> Moreover, “unquestioning reliance” on an SRO’s representations in a proposed rule change is not sufficient to justify Commission approval of a proposed rule change.<sup>30</sup>

In the Order Instituting Proceedings, the Commission expressed concern, among other things, that the Proposal may fail to satisfy the standards under the Exchange Act and the rules thereunder that require market data and connectivity fees to be reasonable, equitably allocated, not unfairly discriminatory, and not an undue burden on competition.<sup>31</sup> In reviewing the proposed rule change, the Commission has analyzed information provided by the Exchange and issues raised by commenters. Based on the information before the Commission, for each of the reasons discussed below (whether viewed independently or in combination), the Commission is unable to find that the Exchange has met its burden to show that the proposed rule change is consistent with the Exchange Act and the applicable rules and regulations thereunder, including Exchange Act Sections 6(b)(4), 6(b)(5), 6(b)(8), 11A and Rules 603(a)(1) and 603(a)(2) of Regulation NMS, and is therefore unable to find that the Proposal is consistent with the Exchange Act.

#### B. The Exchange Has Not Met Its Burden To Demonstrate That the Proposal Is an Equitable Allocation of Reasonable Fees, Is Not Designed To Permit Unfair Discrimination, and Does Not Impose Any Burden on Competition Not Necessary or Appropriate in Furtherance of the Exchange Act

##### 1. Reasonable Fees and “Platform Competition”

###### a. Exchange Statements

As discussed in greater detail in the Notice, Nasdaq states that exchanges, like all trading venues, “compete as platforms,”<sup>32</sup> and that all the elements of the platform—trade executions, market data, connectivity, membership,

<sup>29</sup> See *id.*

<sup>30</sup> *Susquehanna Int’l Group, LLP v. Securities and Exchange Commission*, 866 F.3d 442, 447 (D.C. Cir. 2017).

<sup>31</sup> See Order Instituting Proceedings, *supra* note 9, at 46249.

<sup>32</sup> Nasdaq states that, as explained in the Nasdaq Paper, exchanges are multi-sided platforms, whose value is dependent on attracting users to multiple sides of the platform. See Notice, *supra* note 3, at 24071. The Exchange states that issuers need investors, and every trade requires two sides to trade, and to make its platform attractive to multiple constituencies, an exchange must consider inter-side externalities, meaning demand for one set of platform services depends on the demand for other services. See *id.*

<sup>13</sup> See Notice, *supra* note 3, at 24070.

<sup>14</sup> See Notice, *supra* note 3, at 24070–71.

<sup>15</sup> See Notice, *supra* note 3, at 24071.

<sup>16</sup> See Notice, *supra* note 3, at 24071.

<sup>17</sup> See Notice, *supra* note 3, at 24070.

“Subscriber” is defined as a device or computer terminal or an automated service which is entitled to receive information. See *id.*

<sup>18</sup> See Notice, *supra* note 3, at 24070.

<sup>19</sup> See Notice, *supra* note 3, at 24070.

<sup>20</sup> See Notice, *supra* note 3, at 24070.

<sup>21</sup> See Notice, *supra* note 3, at 24070.

<sup>22</sup> See Notice, *supra* note 3, at 24071.

<sup>23</sup> See Notice, *supra* note 3, at 24071.

<sup>24</sup> See Notice, *supra* note 3, at 24071.

<sup>25</sup> See Notice, *supra* note 3, at 24071.

<sup>26</sup> 15 U.S.C. 78s(b)(3)(C).

<sup>27</sup> Rule 700(b)(3), Commission Rules of Practice, 17 CFR 201.700(b)(3).

<sup>28</sup> See *id.*

and listings—operate in concert.<sup>33</sup> Specifically, the Exchange states that trade executions increase the value of market data; market data functions as an advertisement for on-exchange trading; listings increase the value of trade executions and market data; and greater liquidity on the exchange enhances the value of ports and colocation services.<sup>34</sup> The Exchange continues that reliance on competitive solutions is fundamental to the Exchange Act, and that where significant competitive forces constrain fees, fee levels meet the Exchange Act's standard for the "equitable allocation of reasonable dues, fees, and other charges among members and issuers and other persons using its facilities,"<sup>35</sup> unless there is a substantial countervailing basis to find that a fee does not meet some other requirement of the Exchange Act.<sup>36</sup> The Exchange states that evidence of what it calls "platform competition" demonstrates that each exchange product is sold in a competitive environment, and its fees will be an equitable allocation of reasonable dues, fees, and other charges, provided that nothing about the product or its fee structure impairs competition.<sup>37</sup>

<sup>33</sup> See Notice, *supra* note 3, at 24071.

<sup>34</sup> See Notice, *supra* note 3, at 24071.

<sup>35</sup> See Notice, *supra* note 3, at 24071 and 15 U.S.C. 78f(b)(4).

<sup>36</sup> See Notice, *supra* note 3, at 24071 (citing the staff document "Staff Guidance on SRO Rule Filings Relating to Fees" (May 21, 2019), available at <https://www.sec.gov/tm/staff-guidance-sro-rule-filings-fees> ("Staff Fee Guidance")) ("If significant competitive forces constrain the fee at issue, fee levels will be presumed to be fair and reasonable, and the inquiry is whether there is a substantial countervailing basis to find that the fee terms nevertheless fail to meet an applicable requirement of the Exchange Act (e.g., that fees are equitably allocated, not unfairly discriminatory, and not an undue burden on competition)."). Staff documents represent the views of Commission staff and are not a rule, regulation, or statement of the Commission. The Commission has neither approved nor disapproved the content of staff documents, and, like all staff documents, they have no legal force or effect, do not alter or amend the applicable law, and create no new or additional obligations for any person.

<sup>37</sup> See Notice, *supra* note 3, at 24071. The Exchange further states that nothing in the Exchange Act requires proof of product-by-product competition, and Congress directed the Commission to "rely on 'competition, whenever possible, in meeting its regulatory responsibilities for overseeing the SROs and the national market system.'" See *id.* (citing *NetCoalition v. SEC*, 715 F.3d 342, 534–35 (D.C. Cir. 2013); H.R. Rep. No. 94–229 at 92 (1975) ("[I]t is the intent of the conferees that the national market system evolve through the interplay of competitive forces as unnecessary regulatory restrictions are removed.")). The Exchange also states that the Commission and the courts have repeatedly expressed their preference for competition over regulatory intervention to determine prices, products, and services in the securities markets and states that the Commission has highlighted the importance of market forces in determining prices and SRO revenues. See *id.*

(citing Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) ("Regulation NMS Adopting Release")) (the national market system "has been remarkably successful in promoting market competition in its broader forms that are most important to investors and listed companies."). The Exchange further states that the Commission has long relied on competitive forces to determine whether a fee proposal is equitable, fair, reasonable, and not unreasonably or unfairly discriminatory "[i]f significant competitive forces constrain the fee at issue, fee levels will be presumed to be fair and reasonable. . . ." See *id.* (citing Staff Fee Guidance). The Exchange also cites to a 2008 Commission Order stating "[i]f competitive forces are operative, the self-interest of the exchanges themselves will work powerfully to constrain unreasonable or unfair behavior." See *id.* (citing Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770 (December 9, 2008) (SR–NYSEArca–2006–21)). The Exchange explains that, accordingly, "the existence of significant competition provides a substantial basis for finding that the terms of an exchange's fee proposal are equitable, fair, reasonable, and not unreasonably or unfairly discriminatory" and states that Commission Staff have indicated that they would only look at factors outside of the competitive market if a "proposal lacks persuasive evidence that the proposed fee is constrained by significant competitive forces." See Notice, *supra* note 3, at 24071. As discussed in Sections III.B.1.c. and III.B.2.c. below, the Commission does not find that Nasdaq has sufficiently demonstrated that the proposed fees are subject to competition. In addition, the Exchange states that, in the Staff Fee Guidance, the Staff indicated that "[w]hen reviewing rule filing proposals . . . [it] is mindful of recent opinions by the D.C. Circuit," including *Susquehanna International Group, LLP v. SEC*, 866 F.3d 442 (D.C. Cir. 2017). See Notice, *supra* note 3, at 24072. However, the Exchange states that the decision of the U.S. Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") in *Susquehanna* is irrelevant to the Commission's review of immediately effective SRO fee filings. See *id.* The Exchange states that *Susquehanna* involved the Commission's approval of a rule proposed under Section 19(b)(2) of the Exchange Act, not its evaluation of whether to temporarily suspend an SRO's immediately effective fee filing under Section 19(b)(3). See *id.* The Exchange states that a comparison of Sections 19(b)(2) and 19(b)(3) of the Exchange Act makes clear that the Commission is not required to undertake the same independent review, and make the same findings and determinations, for Section 19(b)(3) filings that it must for Section 19(b)(2) filings and, Section 19(b)(2) requires the Commission to "find[] that [a] proposed rule change is consistent with the" Exchange Act before approving the rule. 15 U.S.C. 78s(b)(2)(C)(i). The Exchange states that Section 19(b)(3), by contrast, imbues the Commission with discretion, stating that it "may temporarily suspend" an immediately effective rule filing where "it appears to the Commission that such action is necessary or appropriate." See *id.* The Exchange further states that, as the Supreme Court has explained, statutes stating that an agency "may"—but need not—take certain action are "written in the language of permission and discretion." See *id.* (citing *S. Ry. Co. v. Seaboard Allied Milling*, 442 U.S. 444, 455 (1979); see also *Crooker v. SEC*, 161 F.2d 944, 949 (1st Cir. 1947) (per curiam)). The Exchange states that the "contrast" between Sections 19(b)(2) and 19(b)(3), "reflects the fundamental difference in the way Congress intended for different types of rules to be treated" and "while the Commission's authority to suspend a fee under Subsection (3)(C) is permissive, its duties under Subsection (2) are stated in mandatory terms. See Notice, *supra* note 3, at 24072 (citing Brief of Respondent SEC, *NetCoalition v. SEC*, 715 F.3d 342–43 (D.C. Cir. 2013) (Nos. 10–1421 et

The Exchange states that the Proposal to increase connectivity and market data fees for firms that do not meet the Minimum ADV is designed to promote competition by providing an incentive for members to provide displayed liquidity, thus attracting investors and increasing the overall interest in and value of the platform, enhancing and enriching the market data distributed to the industry.<sup>38</sup> The Exchange states that this will also enable it to offer investors a more robust, lower-cost trading experience through tighter spreads and more efficient trading, placing it in a better competitive position relative to other exchanges and trading venues.<sup>39</sup> The Exchange states that nothing in the Exchange Act requires the examination of fees in isolation and that the equitable allocation of reasonable dues, fees, and other charges among members and issuers refers generally to "reasonable dues, fees, and other charges" as a whole, not individual fees.<sup>40</sup>

The Exchange states that the fact that the market for order flow is competitive has long been recognized by the courts.<sup>41</sup> In addition, the Exchange

al.).). Thus, the Exchange states that neither *Susquehanna*, nor Section 19(b)(3) of the Exchange Act, requires the Commission to make independent findings that an immediately effective SRO fee filing such as this one is consistent with the Exchange Act and that to the degree that the *Susquehanna* decision is applicable to any Commission action, however, the court held that the Commission is required to "itself find or determine" that a proposal meets statutory requirements, explaining that the Commission is "obligated to make an independent review" of an SRO's proposal, and not rely solely on the work of the SRO. See *id.* (citing 866 F.3d at 4). When the Commission suspends an immediately effective rule filing, "Section 19(b)(3) [of the Exchange Act] requires that the Commission institute proceedings to determine whether the proposed rule change should be approved or disapproved under Section 19(b)(2)(B) [of the Exchange Act]," and the "Exchange Act's requirements for approving a proposed rule change apply equally, regardless of whether the proposed rule were initially filed pursuant to Section 19(b)(2) or 19(b)(3) [of the Exchange Act]." See Securities Exchange Act Release No. 88493 (March 27, 2020), 85 FR 18617, 18622 (April 2, 2020) ("BOX Order"). Consistent with that approach, the Commission critically evaluated the representations made and conclusions drawn by Nasdaq in the Proposal and determined based on the record that Nasdaq has failed to meet its burden to demonstrate that the Proposal is consistent with the Exchange Act, as set forth in Sections III.B.1.c. and III.B.2.c. below.

<sup>38</sup> See Notice, *supra* note 3, at 24071.

<sup>39</sup> See Notice, *supra* note 3, at 24071. The Exchange further states that, to the degree that the additional liquidity is moved from off-exchange venues to on-exchange platforms, overall market transparency will improve as well. See *id.*

<sup>40</sup> See Notice, *supra* note 3, at 24072.

<sup>41</sup> See Notice, *supra* note 3, at 24072 (citing *NetCoalition*, 615 F.3d at 539 (D.C. Cir. 2010) (quoting Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74782–83 (December 9, 2008) (SR–NYSEArca–2006–21)) ("No

states that competition is not just limited to order flow.<sup>42</sup> The Exchange states that “platform competition” constrains platform fees and results in “all-in” costs becoming equal across platforms, and that evidence that “all-in” costs to users have equalized is evidence that competition constrains prices “at a platform level.”<sup>43</sup> According to the Exchange, because *platform competition can be demonstrated solely by examining and comparing* “all-in” costs to users, there is no need for the Exchange to analyze platform returns.<sup>44</sup> Nasdaq states that data presented in the Nasdaq Paper shows that the combination of explicit “all-in” costs to trade and other implicit

one disputes that competition for order flow is ‘fierce.’ . . . As the SEC explained, ‘[i]n the U.S. national market system, buyers and sellers of securities, and the broker-dealers that act as their order-routing agents, have a wide range of choices of where to route orders for execution’: [and] ‘no exchange can afford to take its market share percentages for granted’ because ‘no exchange possesses a monopoly, regulatory or otherwise, in the execution of order flow from broker dealers.’”)).

<sup>42</sup> See Notice, *supra* note 3, at 24072.

<sup>43</sup> See Notice, *supra* note 3, at 24072, n.22.

<sup>44</sup> See Notice, *supra* note 3, at 24072, n.22.

Nasdaq states that the Staff Fee Guidance states that platform competition requires that the “overall return of the platform, rather than the return of any particular fees charged to a type of customer, . . . be used to assess the competitiveness of the platform’s market,” and that “[a]n SRO that wishes to rely on total platform theory must provide evidence demonstrating that competitive forces are sufficient to constrain the SRO’s aggregate return across the platform.” See *id.* (citing Staff Fee Guidance; Exchange’s emphasis). The Exchange states that it does not know, and cannot determine, whether returns (as opposed to fees) are equalized across platforms, because it does not have detailed cost information from other exchanges. See *id.* The statement that the Exchange does not know, and cannot determine, whether returns (as opposed to fees) are equalized across platforms is not relevant given that the Exchange has elected to seek to establish that equal fees (*i.e.*, “all-in” costs) across platforms is evidence of competitive constraint on platforms. See Section III.B.1.c. *infra* addressing the merit of the Exchange’s argument that equal “all-in” costs is evidence of competition between platforms. In addition, the Staff Fee Guidance does not state that knowledge of the returns of other platforms is needed when using platform theory to demonstrate a competitive environment. Rather, the Staff Fee Guidance highlights relevant evidence regarding a platform’s own returns. For example, the Staff Fee Guidance states “[a]n SRO that wishes to rely on total platform theory must provide evidence demonstrating that competitive forces are sufficient to constrain the SRO’s aggregate return across the platform. In this context, at a minimum an SRO must present data and analysis demonstrating that its aggregate return is constrained by competition at the platform level. Examples of relevant data would include evidence of the SRO’s sources and amounts of revenues, costs, and gross return of the entire platform. More specifically, an analysis of baseline revenues, costs, and profitability (before the proposed fee change) and the expected revenues, costs, and profitability (following the proposed fee change) would provide helpful data and analysis to support a finding that competitive forces are operating on the entire platform.” See Staff Fee Guidance, *supra* note 36 (emphasis added).

costs has largely equalized the cost to trade across venues.<sup>45</sup> Nasdaq states that this is a function of the fact that, if the “all-in” cost to the user of interacting with an exchange “exceeds market price,” customers can and do shift their purchases and trading activity to other exchanges; therefore, an exchange must adjust one or more of its fees to attract customers.<sup>46</sup>

The Exchange states that different exchanges engage in a variety of business models and offer an array of pricing options to appeal to different customer types; specifically, that the largest exchanges operate maker-taker platforms, offering rebates to attract trading liquidity, which allows them to maintain actionable quotes with high liquidity and offer high-quality market data.<sup>47</sup> The Exchange further states that the negative price charged to liquidity providers through rebates is part of the platform because it serves to create features attractive to other participants, including oftentimes tight spreads, actionable and lit quotes, and more valuable market data.<sup>48</sup> The Exchange states that there are a wide range of other pricing models and product offerings among the dozens of lit and unlit trading venues that compete in the marketplace.<sup>49</sup> The Exchange further states that different strategies among exchanges also manifest in the pricing of other services, such as market data and connectivity, noting that some exchanges charge for such services, while others charge little or nothing (typically because the exchange is new or has little liquidity), just as some exchanges charge a fee per trade, while others pay rebates.<sup>50</sup>

In assessing competition for exchange services, the Exchange states that both explicit costs, such as fees for trading, market data, and connectivity, and implicit cost of trading on an exchange must be considered, and that “[t]he realized spread, or markup, captures the implicit cost to trade on a platform.”<sup>51</sup> The Exchange further

<sup>45</sup> See Notice, *supra* note 3, at 24072. See also Nasdaq Paper, *supra* note 5.

<sup>46</sup> See Notice, *supra* note 3, at 24072.

<sup>47</sup> See Notice, *supra* note 3, at 24072.

<sup>48</sup> See Notice, *supra* note 3, at 24072. The Exchange states that, in contrast, inverted venues have the opposite price structure—liquidity providers pay to add liquidity, while liquidity takers earn a rebate—these platforms offer less liquidity, but better queue priority, faster fills, and lower effective spreads for investors. See *id.*

<sup>49</sup> See Notice, *supra* note 3, at 24072.

<sup>50</sup> See Notice, *supra* note 3, at 24072.

<sup>51</sup> The Exchange states that the concept of markup was created by market makers trying to capture the spread while providing a two-sided (bid and offer) market. See Notice, *supra* note 3, at 24072. The Exchange states that, for market makers, being filled on the bid or the offer can cause a loss

states that, considering both the explicit costs charged by exchanges for their various joint products and the implicit costs incurred by traders to trade on various exchanges, as set forth in the Nasdaq Paper, the data show that “all-in” trading costs across exchanges are largely equalized, regardless of different trading strategies offered by each platform for each individual service.<sup>52</sup> The Exchange states that this serves to show that “platform competition” has resulted in a competitive environment in the market for exchange services, in which trading platforms are constrained by other platforms’ offerings, taking into consideration the “all-in” cost of interacting with the platform.<sup>53</sup> The Exchange further states that this constraint is a natural consequence of competition and that no exchange platform can charge excessive fees and expect to remain competitive, thereby constraining fees on all products sold as part of the platform.<sup>54</sup> The Exchange finally states that the existence of “platform competition” also explains why some consumers route orders to the exchange with the highest explicit trading costs even though other exchanges offer free or a net rebate for trading.<sup>55</sup>

The Exchange states that exchange customers are differentiated in the value they place on the different products offered by exchanges and in their willingness to pay for those products on both a firm-wide and a per-transaction

if the fill changes market prices. See *id.* (stating as an example, a fill on a market maker’s bid just as the stock price falls results in a “virtual loss,” because the market maker has a long position with a new bid lower than the fill). The Exchange states that negative markouts can be beneficial. See *id.* (stating as an example, if an institutional investor is working a large buy order, negative markouts represent fills as the market falls, allowing later orders to be placed sooner, and likely at a better price, reducing the opportunity costs as well as explicit cost of building the position). The Exchange further states that data suggests that market participants employ sophisticated analytic tools to weigh the cost of immediate liquidity and lower opportunity costs against better spread capture (lower markouts) and explicit trading costs. See Notice, *supra* note 3, at 24073. The Exchange states that, as discussed in greater detail in the Nasdaq Paper, the venues with the highest explicit costs—typically inverted and fee-free venues—have the lowest implicit costs from markouts and vice versa. See *id.* The Exchange also states that higher positive markouts mean more spread capture, but those venues also tend to have the highest explicit costs, and provide the least liquidity, and positive externalities, to the market. See *id.*

<sup>52</sup> See Notice, *supra* note 3, at 24073.

<sup>53</sup> See Notice, *supra* note 3, at 24073.

<sup>54</sup> See Notice, *supra* note 3, at 24073.

<sup>55</sup> The Exchange states that empirical evidence also shows that market data is more valuable from exchanges with more liquidity. According to the Exchange, many customers decide not to take data from smaller markets, even though they are free or much lower cost than larger markets. See Notice, *supra* note 3, at 24073.

basis; for example, individual customers “multi-home,” meaning they are customers on multiple platforms, and are thus able to route different trades to different platforms to take advantage of favorable opportunities offered on a trade-to-trade basis.<sup>56</sup> The Exchange states that exchanges compete by offering differentiated packages of pricing and products to attract different categories of customer, and that consumers will “vote with their feet,” incentivizing platforms to supply an array of pricing and product offerings that suit diverse consumer needs far more effectively than a uniform, one-size-fits-some rigid product offering.<sup>57</sup> The Exchange further states that if an exchange misprices a particular product such that its total return is boosted above competitive levels, competing exchanges will quickly attract customer volume through more attractive “all-in” trading costs.<sup>58</sup> In addition, the Exchange states that if a particular package of pricing and products is not attractive to a sufficient volume of customers in a particular category, those customers may elect not to purchase the service and that this is why exchanges compete at a product level, as well as based on “all-in” trading costs.<sup>59</sup>

The Exchange states that the number of transactions completed on non-exchange venues has been growing, that “allowing exchanges to compete as platforms” will help exchanges compete against non-exchange venues, and, to the extent order flow is shifted from non-exchange to exchange venues, overall market transparency will improve.<sup>60</sup> The Exchange states that exchanges have a unique role to play in market transparency because they publish an array of pre- and post-trade data that non-exchange venues, almost entirely, do not. The Exchange also states that the Proposal will contribute to market quality because it will help bring new order flow to the Exchange, and greater displayed liquidity on the Exchange offers investors deeper, more liquid markets and execution opportunities.<sup>61</sup> The Exchange states that increased order flow benefits investors by deepening the Exchange’s

liquidity pool, potentially providing greater execution incentives and opportunities, offering additional flexibility for all investors to enjoy cost savings, supporting the quality of price discovery, promoting market transparency, and lowering spreads between bids and offers and thereby lowering investor costs.<sup>62</sup> The Exchange states that, to the degree that liquidity is attracted from dark venues, that liquidity also increases transparency for the market overall, providing investors with more information about market trends.<sup>63</sup>

The Exchange states that “allowing exchanges to compete effectively as platforms” has other positive network effects: larger trading platforms offer lower average trading costs and, as trading platforms attract more liquidity, bid-ask spreads tighten, search costs fall (by limiting the number of venues that a customer needs to check to assess the market), and connection costs decrease, as customers have no need to connect to all venues.<sup>64</sup> The Exchange states that the Proposal will help members that meet the Minimum ADV maintain lower costs and will benefit them through the many positive externalities associated with a more liquid exchange.<sup>65</sup>

The Exchange states that smaller established trading platforms provide specialized services that cater to individual customer needs, but that these specialized services help the smaller exchanges grow by driving liquidity to their platforms, and, if they are successful, achieve the economies of scale that benefit the larger enterprises.<sup>66</sup> The Exchange states that, in line with its claim that the total costs of interacting with an exchange are roughly equal, smaller exchanges offset higher trading costs with lower connectivity, market data, or other fees.<sup>67</sup> The Exchange states that, while the mix of fees will change as exchanges grow, the “all-in” cost of interacting with the exchange remains roughly the same.<sup>68</sup>

The Exchange states that the competition among exchanges as trading platforms, as well as the competition between exchanges and alternative trading venues, constrain exchanges from charging excessive fees for any exchange products, including trading,

listings, ports, and market data.<sup>69</sup> The Exchange also states that the fees that arise from the competition among trading platforms may be too low because they fail to reflect the benefits to the market as a whole of exchange products and services, allowing other venues to free-ride on these investments by the exchange platforms, increasing fragmentation and search costs.<sup>70</sup> The Exchange states that, as long as total returns are constrained by competitive forces, there is no regulatory basis to be concerned with pricing of particular elements offered on a platform and that regulatory constraints in this environment are likely to reduce consumer welfare by constraining certain exchanges from offering packages of pricing and products that would be attractive to certain sets of consumers, thus impeding competition with venues that are not subject to the same regulatory limitations and reducing the benefits of competition to customers.<sup>71</sup>

#### b. Opposing Comments and Exchange Response

All commenters oppose the Proposal.<sup>72</sup> Multiple commenters state that the Exchange mischaracterizes the Proposal as a discount instead of a possible fee increase.<sup>73</sup> Commenters state that the Proposal would raise fees on a number of Nasdaq market data and connectivity products and one commenter states that no Nasdaq member or non-member would benefit from lower fees under the Proposal; instead, some market participants would be charged higher fees.<sup>74</sup> Commenters also state that the Proposal, including the Nasdaq Paper, does not include sufficient or meaningful data or justification to support the fee increase

<sup>56</sup> See Notice, *supra* note 3, at 24074.

<sup>57</sup> See Notice, *supra* note 3, at 24073.

<sup>58</sup> See Notice, *supra* note 3, at 24073. See also Letter from John M. Yetter, Vice President and Senior Deputy General Counsel, Nasdaq, to Vanessa Countryman, Secretary, Commission, dated July 19, 2024 (“Nasdaq Response Letter”), at 8.

<sup>59</sup> See Letters from Tyler Gellasch, President and CEO, Healthy Markets Association, to Vanessa Countryman, Secretary, Commission, dated April 24, 2024 (“HMA Letter”); Adrian Griffiths, Head of Market Structure, MEMX LLC to Vanessa Countryman, Secretary, Commission, dated June 12, 2024 (“MEMX Letter”); and Ellen Greene, Managing Director, Equities and Options Market Structure and Joseph Corcoran, Managing Director, Associate General Counsel, Securities Industry and Financial Markets Association to Vanessa Countryman, Secretary, Commission, dated May 17, 2024 (“SIFMA Letter”).

<sup>60</sup> See HMA Letter, *supra* note 72, at 4; MEMX Letter, *supra* note 72, at 2; SIFMA Letter, *supra* note 72, at 2.

<sup>61</sup> See HMA Letter, *supra* note 72, at 4; MEMX Letter, *supra* note 72, at 2–3; SIFMA Letter, *supra* note 72, at 2.

<sup>62</sup> See Notice, *supra* note 3, at 24074.

<sup>63</sup> See Notice, *supra* note 3, at 24074.

<sup>64</sup> In addition, the Exchange states that its experience shows that fewer customers connect with smaller trading venues than with larger venues. See Notice, *supra* note 3, at 24073.

<sup>65</sup> See Notice, *supra* note 3, at 24074.

<sup>66</sup> See Notice, *supra* note 3, at 24073.

<sup>67</sup> See Notice, *supra* note 3, at 24073.

<sup>68</sup> See Notice, *supra* note 3, at 24073.

<sup>56</sup> See Notice, *supra* note 3, at 24073.

<sup>57</sup> See Notice, *supra* note 3, at 24073.

<sup>58</sup> See Notice, *supra* note 3, at 24073.

<sup>59</sup> See Notice, *supra* note 3, at 24073.

<sup>60</sup> See Notice, *supra* note 3, at 24073 (citing Regulation NMS: Minimum Pricing Increments, Access Fees, and Transparency of Better Price Orders, Securities Exchange Act Release No. 96494 (File No. S7–30–22) and stating that non-exchange venues rely on market data distributed by exchanges to set prices and greater transparency allows both exchange and non-exchange venues to operate more effectively and efficiently).

<sup>61</sup> See Notice, *supra* note 3, at 24074.



or the tying of costs from one product, market data, to another product, transactions.<sup>75</sup> Commenters disagree with the Proposal's claim that, due to "platform competition," the Commission does not need to look at the data for these specific fees, and state that the Exchange has not offered any relevant facts or analysis to support the imposition of these specific increased fees.<sup>76</sup> One commenter states that the increase of 33% appears to be arbitrary, rather than the result of changes to explicit costs and rigorous analysis,<sup>77</sup> and another commenter states that the Proposal fails to provide an analysis to support the reasonableness of the fee increases.<sup>78</sup> One commenter states that the Exchange has not shared any analysis of how many, what types, and how firms will be impacted by the proposed fee change, which makes it difficult to provide meaningful comment on this aspect of the Proposal.<sup>79</sup>

Commenters also state that the Exchange has not demonstrated that "platform competition" constrains the specific market data and connectivity fees subject to the Proposal. One commenter states that the Proposal and the Nasdaq Paper do not address how the fees for the specific products are constrained by "platform competition," how the purported competition impacts the levels at which the Exchange has determined to set the proposed fees for these products, whether there are reasonable substitutes for the relevant products, any revenue or cost analysis to demonstrate the need for the increased fees, or any evidence that the increased fees would not result in supra-competitive profits for the Exchange.<sup>80</sup> This same commenter also states that the evidence offered in the Nasdaq Paper is insufficient to demonstrate that the Exchange has been subject to significant competitive forces in setting the fees. The commenter states that they, along with other market participants, have previously provided evidence that rebuts the argument that

"platform competition" constrains an exchange's market data fees and demonstrates that an exchange's decision to offer multiple products (trading services and market-data products) does not constrain prices in the manner contemplated when a platform facilitates a multi-sided transaction.<sup>81</sup> The commenter specifically states that it has provided evidence to the Commission that shows that, while trading on various exchanges can be substitutable, trade data from various exchanges is not.<sup>82</sup> The commenter states that the prices that exchanges charge for trading are roughly reasonable, while the prices for trading data have in some cases increased significantly in the past years with no apparent competition-based reason.<sup>83</sup> Another commenter states that the Proposal's reliance on platform theory ignores the Exchange's pricing power for its market data products.<sup>84</sup>

A different commenter states that the data and analysis in the Proposal and the Nasdaq Paper do not establish that "platform competition" constrains the Exchange's fees, that competitive forces are sufficient to constrain the Exchange's aggregate return across the platform, or that market participants can avoid purchasing the Exchange's services if the price of those services, either individually or as a whole, is unreasonable.<sup>85</sup> The commenter states that the data provided by the Exchange does not include evidence that would be relevant to demonstrate "platform competition," including evidence of its sources and amounts of revenues, costs, and the gross return of the entire platform.<sup>86</sup> The commenter states that, at most, Nasdaq's analysis shows that certain other large exchange groups may similarly charge unreasonable fees today, free of competitive constraints felt by smaller exchanges with lower

fees that Nasdaq largely ignores in its analysis.<sup>87</sup>

The Exchange submitted a Response Letter, which reiterates many of the arguments made in the Proposal.<sup>88</sup> The

<sup>87</sup> See MEMX Letter, *supra* note 72, at 4. The commenter states that the analysis provided by Nasdaq generally reflects the 2021 data related to trading on exchanges operated by the three incumbent exchange groups and one independent exchange with a unique market model (IEX) and that data about the cost of trading on new maker/taker exchanges that compete more directly with the three incumbent exchange groups, including the commenter and MIAAX Pearl, LLC, are excluded from various analysis. *Id.* at 4 n.14. Additionally, the commenter states that the data on trading on all three independent U.S. equities exchanges is stale and does not reflect relevant changes made by each of those markets in the last three years. *Id.*

<sup>88</sup> See Nasdaq Response Letter, *supra* note 71. In the Response Letter, Nasdaq also raised certain procedural issues. See *id.* at 4, 20–22. The Exchange states that the Commission itself, and not staff acting under delegated authority, must act within the statutorily prescribed timing requirements of the Dodd-Frank Act, or the proposal will be deemed approved. See *id.* at 4 and 21. This argument lacks merit. See BOX Order, *supra* note 37, at 18625. The Exchange also states that if staff, under delegated authority, disapprove the proposal prior the statutorily provided time limit, and then the Commission exercises its discretionary right to review, either on its own initiative or upon petition, then the staff's disapproval will not constitute action by the Commission, and thus, unless the Commission makes a final determination of the proposal within the statutory prescribed 240-day period, then the proposal is considered to have been deemed approved. See Nasdaq Response Letter, *supra* note 71, at 21–22. Orders issued by delegated authority "are issued with the full authority of the Commission and are signed by the Secretary's office on behalf of the Commission." See Securities Exchange Act Release Nos. 93229 (October 1, 2021), 86 FR 55873, 55879 (October 7, 2021) (SR-CboeBZX-2020-053) ("CboeBZX Order") and 93230 (October 1, 2021), 86 FR 55881, 55887 (October 7, 2021) (SR-CboeBZX-2020-070). Section 4A of the Exchange Act authorizes the Commission to delegate certain functions, including the approval or disapproval of a proposed rule change under Section 19, to a "division of the Commission," 15 U.S.C. 78d-1(a), and the Commission's Rules of Practice are clear that "an action made pursuant to delegated authority shall have immediate effect and be deemed the action of the Commission." See Commission Rule of Practice 431(e), 17 CFR 201.431(e). See also, e.g., Rule of Practice 430(c), 17 CFR 201.430(c) (referring to "a final order entered pursuant to [delegated authority]"); Rule of Practice 431(f), 17 CFR 201.431(f) (giving an order by delegated authority operative effect, even when review has been sought, until a person receives actual notice that it was been stayed, modified, or reversed on review). Furthermore, as the Commission has stated, Congress was aware of the Commission's ability to delegate authority to approve SRO rule filings when the time restrictions in Exchange Act Section 19(b)(2)(D) were enacted; and, to construe Section 19(b)(2), as Nasdaq does, to require Commission review of an order by delegated authority to be completed within 240 days "would undermine both the specific deadlines set forth in the statute and the Commission's ability to delegate functions" and such a construction is not necessary to fulfill Congress's purpose in enacting the deadlines to "streamline" the rule filing process. See, e.g., BOX Order, *supra* note 37, at 18625–26 and Securities Exchange Act Release No. 82727 (February 15, 2018), 83 FR 7793, 7799 (February 22, 2017).

<sup>75</sup> See HMA Letter, *supra* note 72, at 4–5; MEMX Letter, *supra* note 72, at 3–6; SIFMA Letter, *supra* note 72, at 3–5.

<sup>76</sup> See HMA Letter, *supra* note 72, at 4–5; SIFMA Letter, *supra* note 72, at 4–5.

<sup>77</sup> See HMA Letter, *supra* note 72, at 5.

<sup>78</sup> See SIFMA Letter, *supra* note 72, at 5.

<sup>79</sup> See SIFMA Letter, *supra* note 72, at 6. This specific commenter states that the Proposal "did not include the number or size of members that currently trade in volumes that meet the definition of the proposed term 'Minimum ADV,' how many additional members it would expect to cross the threshold as a result of the [ ] Proposal, or comparison of these statistics at various volume threshold levels." *Id.* at 8.

<sup>80</sup> See SIFMA Letter, *supra* note 72, at 5.

<sup>81</sup> See SIFMA Letter, *supra* note 72, at 4. The commenter cites to two reports, see Lawrence R. Glosten, "Economics of the Stock Exchange Business: Proprietary Market Data" (January 2020) and Expand & SIFMA, "An Analysis of Market Data Fees" (August 2018), available at <https://www.sifma.org/wp-content/uploads/2019/01/Expand-and-SIFMA-An-Analysis-of-Market-Data-Fees-08-2018.pdf>.

<sup>82</sup> See SIFMA Letter, *supra* note 72, at 4 (citing Glosten, "Economics of the Stock Exchange Business: Proprietary Market Data," at 4, *supra* note 81).

<sup>83</sup> See SIFMA Letter, *supra* note 72, at 4.

<sup>84</sup> See HMA Letter, *supra* note 72, at 5.

<sup>85</sup> See MEMX Letter, *supra* note 72, at 3. The commenter is another national securities exchange and states that other exchanges, including the commenter, have justified their non-transaction fees by providing detailed financial information to the Commission.

<sup>86</sup> See MEMX Letter, *supra* note 72, at 3–4 (citing Staff Fee Guidance, *supra* note 36).



Exchange states that reliance on competitive solutions is fundamental to the Exchange Act and that the Nasdaq Paper and its supporting evidence demonstrate that the proposed fees are subject to competitive forces and will enhance competition and benefit investors by incentivizing liquidity on the Exchange.<sup>89</sup> The Exchange states that the services in the Proposal are inextricable from the operation of exchanges as a platform and the competitiveness of these fees must be analyzed “at the platform level” rather than by positing the existence of a product-by-product market existing in isolation from the platform.<sup>90</sup> The Exchange also again states its belief that the Commission and the courts have expressed a preference for competition over regulatory intervention to determine prices, products, and services in the securities market.<sup>91</sup> The Exchange states that regulatory constraints in this environment are likely to reduce consumer welfare by constraining certain exchanges from offering packages of pricing and products that would be attractive to certain sets of consumers, thus impeding competition with venues that are not subject to the same regulatory limitations and reducing the benefits of competition to consumers.<sup>92</sup> The Exchange also states that its research shows that the combination of “all-in” costs to trade and other implicit costs has largely equalized the cost to trade across venues, which demonstrates that competition has helped constrain fees.<sup>93</sup> The Exchange states that allowing “platform competition” means that the exchanges will be better able to compete against non-exchange venues, and, to the degree order flow is shifted from non-exchange to exchange venues, overall market transparency is improved which enables non-exchange venues to provide more accurate pricing to their customers, and play their own role in

<sup>89</sup> See Nasdaq Response Letter, *supra* note 71, at 1–2.

<sup>90</sup> See Nasdaq Response Letter, *supra* note 71, at 5 n.18.

<sup>91</sup> See Nasdaq Response Letter, *supra* note 71, at 5.

<sup>92</sup> See Nasdaq Response Letter, *supra* note 71, at 8.

<sup>93</sup> See Nasdaq Response Letter, *supra* note 71, at 7. The Response Letter also states that “if the all-in cost to the user of interacting with an exchange—taking into account the amount of liquidity on the exchange—exceeds market price, customers shift purchases away from that exchange, and therefore the exchange must adjust one or more of its fees to attract customers. The ‘all-in’ cost includes not only explicit costs, such as fees for trading, market data, and connectivity, but also the implicit costs of trading on an exchange.” *Id.*

capital formation more efficiently and effectively.<sup>94</sup>

The Exchange states that “platform competition” has constrained market data fees over the last two decades, because customers can and routinely do shift their purchases to another national securities exchange in response to competitive pricing alternatives and that fees have been constrained because customers have a choice in market data and connectivity.<sup>95</sup> Nasdaq states that the fact that customers are turning to other sources for their data needs demonstrates that there is a competitive constraint on the fees that an exchange can charge.<sup>96</sup> Nasdaq states that customers similarly have a choice in whether they purchase connectivity services and that of all the customers on the Exchange, only 4% purchase any colocation services at all, and only 22% purchase depth-of-book information.<sup>97</sup>

#### c. Analysis of “Platform Competition” Arguments in the Proposal<sup>98</sup>

As described above, Nasdaq states that exchanges are multi-sided platforms, whose value is dependent on attracting users to multiple sides of the platform.<sup>99</sup> Nasdaq’s justification that the Proposal provides for reasonable fees as required by Section 6(b)(4) of the Exchange Act, is that the Exchange is a platform that is subject to competition from other exchanges and trading venues “at the platform level” (not just the product level).<sup>100</sup> Nasdaq states that this competition constrains fees for all of the products that the platform produces because the products are sold

<sup>94</sup> See Nasdaq Response Letter, *supra* note 71, at 14.

<sup>95</sup> See Nasdaq Response Letter, *supra* note 71, at 9, 11. In 2022, for example, Nasdaq reported that the introduction of fees for the five MRX data feeds caused an approximately 15% reduction in the number of customers with access to those feeds. Nasdaq states that it has also had cancellations of BX and PSX data feeds because the liquidity available on those exchanges has been insufficient to support the cost of market data. *Id.*

<sup>96</sup> See Nasdaq Response Letter, *supra* note 71, at 11. Nasdaq states that, as an example, 54% (15 out of 28) of market participants report on Form ATS–N that they purchase proprietary real time market data, while the remaining market participants rely on the Securities Information Processors (“SIPs”) for market information. *Id.*

<sup>97</sup> See Nasdaq Response Letter, *supra* note 71, at 12. The Exchange states that, while most of their top 25 customers purchase colocation services, that percentage drops below 60% for the next top 25, drops to only about 20% for the next 50, and approaches zero for most other customers. *Id.*

<sup>98</sup> As an initial matter, this proposed fee change would be an increase for all non-members and members who do not attain the required Minimum ADV. The Exchange refers to the proposed rule change as a fee increase in its Response Letter. See Nasdaq Response Letter, *supra* note 71, at 4.

<sup>99</sup> See Notice, *supra* note 3, at 24071.

<sup>100</sup> See Notice, *supra* note 3, at 24072–73.

in a competitive environment (*i.e.*, the competitive platform environment, not necessarily a competitive product environment).<sup>101</sup> Accordingly, Nasdaq states that any fee for a product of its platform is reasonable, “provided that nothing about the product or its fee structure impairs competition.”<sup>102</sup>

Nasdaq states that a result of “platform competition” is that the “all-in” costs (both explicit and implicit costs) for a user to interact with an exchange are largely equal across exchanges because, if an exchange “exceeds market price” for its package of products, customers can and do shift their purchases and trading activity to other exchanges.<sup>103</sup> Nasdaq states that “platform competition” can be demonstrated by examining the “all-in” costs to users and the Nasdaq Paper seeks to demonstrate that the “all-in” costs to users are largely equal across platforms.<sup>104</sup> Accordingly, the Proposal relies on the Nasdaq Paper and its analysis of user costs to attempt to demonstrate that competition between exchanges constrains fees and, in turn, that the proposed fees are reasonable.

The Exchange does not explain how equal “all-in” user costs to trade across all exchanges establish that the Exchange’s fees for the market data and connectivity products subject to the Proposal are subject to competitive constraint. Even assuming that “all-in” user costs reflect the prices that users pay, equal “all-in” users costs would not be sufficient to establish the presence of sufficient competitive forces that would constrain the level of the Exchange’s proposed fees for the market data and connectivity products subject to the Proposal and ensure that such fees are reasonable.<sup>105</sup> This is because a concentrated market where firms have significant market power can also have equal prices.<sup>106</sup> As a result, establishing that prices are equal across firms does not establish the degree of competition between these firms. Accordingly, the Commission agrees with the opposing commenters’ statements above that

<sup>101</sup> See Notice, *supra* note 3, at 24072.

<sup>102</sup> See Notice, *supra* note 3, at 24071.

<sup>103</sup> See Notice, *supra* note 3, at 24072.

<sup>104</sup> See Notice, *supra* note 3, at 24072, n.22, and Nasdaq Paper, *supra* note 5.

<sup>105</sup> See also MEMX Letter, *supra* note 72, at 4 (“[e]ven taken at face value, at most Nasdaq’s analysis shows that certain other large exchange groups may similarly charge unreasonable fees today”).

<sup>106</sup> See, e.g., W. Kip Viscusi, Joseph E. Harrington, Jr., & David E.M. Sappington, *Economics of Regulation and Antitrust* (5th ed. 2018), at 128–130 and 177–178. See also *supra* notes 82–84 and accompanying text (commenters stating that there is a lack of competition for exchange market data products and that Nasdaq has pricing power for its market data products).

Nasdaq has not demonstrated that the specific market data and connectivity fees subject to the Proposal are constrained by competition.<sup>107</sup> Therefore, the Commission finds that Nasdaq has failed to meet its burden under the Exchange Act to demonstrate that the proposed fees are reasonable as required under Section 6(b)(4) of the Exchange Act.

The evidence that Nasdaq provides is flawed in other ways as well. Nasdaq's two-step analysis,<sup>108</sup> which it states shows that competition equalizes "all-in" user costs across exchanges, uses a methodology that does not allow those costs to be compared accurately across exchanges. Nasdaq first claims to examine explicit "all-in" user costs and finds that these costs vary significantly across exchanges.<sup>109</sup> Nasdaq then adds implicit costs for users to trade on each venue, which Nasdaq claims broadly equalizes costs to the user across venues.<sup>110</sup> Nasdaq's analysis of explicit "all-in" user costs across exchanges uses a methodology to determine user costs by taking the annual revenues "per category" of costs for each exchange group and dividing by the total number of trades for each exchange group, respectively.<sup>111</sup> This methodology to determine user costs as revenue normalized "per trade" (*i.e.*, annual exchange revenue per cost category/total annual trades for the exchange) does not allow for an accurate comparison of an individual trader's "all-in" costs across

exchanges—where there are potentially very different order flow levels and average order sizes that vary by trader.

As Nasdaq acknowledges, connectivity and data costs are fixed costs<sup>112</sup>—meaning that, all else being equal, these costs will be the same regardless of the number of transactions effected by the trader. First, dividing fixed costs by the number of trades will make these costs for exchanges that execute more trades appear lower than for exchanges that execute fewer trades, even when it is not the case. For example, consider a trader that purchases fiber connections to three exchanges (A, B and C), each of which costs \$20,000 per month and are otherwise identical. The trader executes a 100-share order on each exchange. Assume that this is the only trade executed on Exchange A, while Exchange B executes a single additional 9,900-share order from a different trader, and Exchange C executes 99 additional 100-share orders, again from different traders. Following Nasdaq's methodology, this would create the misleading result of connectivity costs (per trade) of \$20,000 on Exchange A, \$10,000 on Exchange B, and \$200 on Exchange C, which does not reflect the fact that the trader paid the same \$20,000 to connect to and execute an identical trade on each exchange. Second, since variable costs are typically assessed on a per-share, and not per-trade, basis, Nasdaq's methodology will similarly make user costs for exchanges with a smaller number of trades appear higher, all else equal.<sup>113</sup> Accordingly, Nasdaq's methodology for measuring explicit user costs does not provide for an accurate comparison of such costs across exchanges.<sup>114</sup>

Additionally, Nasdaq draws unsupported conclusions from certain intermediate steps in its reasoning. Many of Nasdaq's arguments conflate the fact that exchanges are able to attract customers despite different business models as evidence that competition constrains "all-in" user costs.<sup>115</sup> For example, in reference to "Table 1: Heatmap of Different Exchange Models and Their Characteristics," Nasdaq assumes that the ability of exchanges with different business models and cost structures to attract customers means that all-in costs "must" be constrained by competition.<sup>116</sup> However, the ability of an exchange to attract customers to its market data and connectivity products is not evidence of competition for those products; the same result could also hold were the exchange to have market power or be a monopolist for its market data and connectivity products.

Nasdaq then goes on to discuss how different exchanges "compete" (*i.e.*, attract customers) despite their vastly different explicit costs, and it concludes that it must be the case that "all-in" user costs at some point must equalize (*i.e.*, through implicit costs)<sup>117</sup>—questioning why else a customer would choose to purchase from a more expensive exchange when a cheaper one is available. This discussion ignores the fact that disparate prices are also consistent with certain products of the exchanges simply being different; and potentially different enough such that some products, such as the market data and connectivity products subject to the Proposal, do not even compete. Therefore, this line of reasoning does not provide support for the role Nasdaq presents for implicit costs, which in any case is never empirically demonstrated, as discussed below.

In order for the Exchange to rely on its proposition that "all-in" costs to

significant drop in revenues beginning in 2019, this "drop" in the ratio of revenues to trades was most likely driven by an increase in the number of trades (*i.e.*, the denominator) rather than a decrease in revenues (*i.e.*, the numerator).

<sup>115</sup> See, e.g., Nasdaq Paper, *supra* note 5, at 67 (stating that "U.S. exchanges operate a number of different platform business models today, and each is able to attract customers and compete," and "how do all these different business models compete unless all-in costs to users are constrained?").

<sup>116</sup> See Nasdaq Paper, *supra* note 5, at 68 (Table 1: Heatmap of Different Exchange Models and Their Characteristics).

<sup>117</sup> See also Nasdaq Paper, *supra* note 5, at 60, stating that "implicit costs explain how venues with far higher explicit costs manage to compete with seemingly much cheaper venues" and at 61, stating that "[t]aking all explicit costs to trade into account, however, reveals significant differences across exchanges . . . Such a sizeable disparity suggests that there is another factor that keeps these exchanges in competition."

<sup>107</sup> See HMA Letter, *supra* note 72, at 4–5; MEMX Letter, *supra* note 72, at 3–6; SIFMA Letter, *supra* note 72, at 3–5 (stating that "neither the proposal or the [Nasdaq Paper] demonstrate that platform competition constrains the specific market data and co-located connectivity fees as issue in the [Proposal].").

<sup>108</sup> See Nasdaq Paper, *supra* note 5, at 60.

<sup>109</sup> See Nasdaq Paper, *supra* note 5, at 59–60. In an updated version of the analysis, Nasdaq states that instead, using updated data, competition has essentially equalized the explicit "all-in" costs of the three largest exchange families. See Nasdaq Letter at 11. This analysis does not change the Commission's view that Nasdaq's analysis of "all-in" costs is flawed. First, even if explicit costs are "equalized" across these three exchanges in 2022, they were shown to vary significantly in the older version of the analysis from 2021. It is not clear whether Nasdaq is showing that the exchange was not subject to the same degree of competition in 2021 and 2022, or if there was a mistake in the 2021 analysis. Comparing the updated analysis to the previous one at the least shows that their results are not particularly robust over time. Additionally, even if the updated figure is the "correct" one, there is no evidence that the costs from the updated figures are also equalized once implicit costs are considered.

<sup>110</sup> See Nasdaq Paper, *supra* note 5, at 60.

<sup>111</sup> See Nasdaq Paper, *supra* note 5, at 60 (Figure 2: 2021 All-In Cost to Trade by Exchange); and Nasdaq Response Letter, *supra* note 71, at 11 (Figure 2: 2002 Estimated All-In Cost to Trade). These categories include revenues related to colocation and ports, data, SIP revenue, and trading, as well as estimated data center costs.

<sup>112</sup> See, e.g., Nasdaq Paper, *supra* note 5, at 71 (referencing "market data, connectivity, and other fixed costs"); and at 75 (referencing "the cost of market data and other fixed costs").

<sup>113</sup> To see this, consider the example from above and assume that each exchange charges a liquidity take fee of \$0.001 per share. The trader's actual total transaction cost for each 100-share order would be \$0.10 on each exchange. However, Nasdaq's methodology would calculate user transaction costs as \$5 on Exchange B (*i.e.*, the exchange's total transaction revenue—\$0.001 \* 10,000 executed shares = \$10—divided by the number of trades, which is 2).

<sup>114</sup> The issues with using "per-trade" costs are illustrated by "Figure 1: Industry-Wide All-In Cost to Trade" in the Nasdaq Response Letter which shows a drop in Nasdaq's "all-in" cost measure (defined as revenues divided by trades) since 2019 and which Nasdaq states shows that the explicit all-in costs per trade have fallen industry-wide since 2019 (excluding markouts). See Nasdaq Response Letter, *supra* note 71, at 10. However, Nasdaq does not acknowledge that this same figure also shows that there was a significant increase in trading volume in 2019. Nasdaq does not address the likelihood that, unless there was a particularly

users being equal across exchanges implies that there is competition between exchanges that constrains fees across exchange products, the Exchange must at least establish that the “all-in” costs to users across exchanges are in fact largely equal. The Exchange claims to have demonstrated that users’ “all-in” costs are largely equal across trading venues,<sup>118</sup> including explicit costs related to connectivity, data, and transactions in its discussion, as well as implicit transaction costs, as measured by realized spreads.<sup>119</sup> Nasdaq states that “[d]emonstrating that exchanges compete at the platform level, and that [‘all-in-’] costs to the user are already constrained by that competition, requires a two-step analysis.”<sup>120</sup> First, Nasdaq claims to analyze the “all-in” explicit costs for the user to trade across exchanges, which Nasdaq states vary significantly.<sup>121</sup> Second, Nasdaq claims to analyze the implicit costs for a user to trade on each venue, which Nasdaq states broadly equalizes the costs to users across venues.<sup>122</sup> Nasdaq’s claim that “all-in” costs to users are largely equal across exchanges, which Nasdaq claims is a sign of competition between platforms constraining fees for the market data and connectivity products subject to the Proposal, cannot be verified by the supplied data. This is because the Exchange’s figures do not combine all of the costs the Exchange claims are relevant to a user’s decision to trade on a given exchange.<sup>123</sup> For example, in the Nasdaq Paper, “Figure 2: 2021 All-In Cost to Trade by Exchange”<sup>124</sup> includes data, connectivity, and explicit transaction costs, but not implicit transaction costs; “Figure 3: Per-Trade Markouts and Net Transaction Fees by Exchange,”<sup>125</sup>

<sup>118</sup> See, e.g., Notice, *supra* note 3, at 24072 (stating that “[d]ata shows that the combination of explicit all-in costs to trade and other implicit costs has largely equalized the cost to trade across venues.”) and Nasdaq Paper, *supra* note 5, at 60 (stating that “it is clear . . . that all-in costs to users are roughly equal across exchanges.”), and at 81 (stating that “[a]s we have shown . . . , platform competition has already resulted in rough equalization of all-in costs for users across exchange venues.”).

<sup>119</sup> See, e.g., Notice, *supra* note 3, at 24072, and Nasdaq Paper, *supra* note 5, at 59 (stating that “[c]ustomers consider the all-in cost for them to trade at each venue, including the explicit costs of trading, connectivity, membership, and data,” and that “implicit costs to trade cannot be overlooked in assessing competition.”).

<sup>120</sup> See Nasdaq Paper, *supra* note 5, at 59.

<sup>121</sup> See Nasdaq Paper, *supra* note 5, at 59.

<sup>122</sup> See Nasdaq Paper, *supra* note 5, at 60.

<sup>123</sup> See Nasdaq Paper, *supra* note 5, at 60–72.

<sup>124</sup> See Nasdaq Paper, *supra* note 5, at 60 (Figure 2: 2021 All-In Cost to Trade by Exchange).

<sup>125</sup> See Nasdaq Paper, *supra* note 5, at 62 (Figure 3: Per-Trade Markouts and Net Transaction Fees by Exchange).

“Figure 4: All-In Trading Costs by Venue,”<sup>126</sup> and “Table 1: Heatmap of Different Exchange Models and Their Characteristics”<sup>127</sup> include explicit and implicit transaction costs but not data or connectivity costs; “Figure 6: Maker-Taker Venues Have Most Time at NBBO and Highest value data”<sup>128</sup> and “Figure 7: The SIP incentive structure rewards venues that contribute most to the NBBO”<sup>129</sup> purport to establish a link between data fees and transaction volumes, showing a large variation in data-related fees and revenues across trading venues, but do not combine this with information about other costs.<sup>130</sup> The Exchange has not provided a figure that combines all costs, both implicit and explicit and both transaction-related and data/connectivity-related, that the Exchange itself states are part of a user’s decision to participate on a trading venue. It is also not clear how the figures provided by Nasdaq should be combined,<sup>131</sup> or whether the figures provided by Nasdaq are calculated using the same units.<sup>132</sup>

Because Nasdaq has not sufficiently demonstrated that “all-in” costs to users across exchanges are in fact largely equal, which Nasdaq claims is the fundamental basis for its finding that it

<sup>126</sup> See Nasdaq Paper, *supra* note 5, at 65 (Figure 4: All-In Trading Costs by Venue).

<sup>127</sup> See Nasdaq Paper, *supra* note 5, at 68 (Table 1: Heatmap of Different Exchange Models and Their Characteristics).

<sup>128</sup> See Nasdaq Paper, *supra* note 5, at 70 (Figure 6: Maker-Taker Venues Have Most Time at NBBO and Highest value data).

<sup>129</sup> See Nasdaq Paper, *supra* note 5, at 71 (Figure 7: The SIP incentive structure rewards venues that contribute most to the NBBO).

<sup>130</sup> Similarly, Nasdaq included in its response letter a “Figure 1: Industry-Wide All-In Cost to Trade” that purports to show changes in industry-wide explicit costs to trade over time, during the period from 2017–2021, but does not include implicit costs, and furthermore does not allow for a comparison of costs across individual exchanges. Nasdaq Response Letter, *supra* note 71, at 10.

<sup>131</sup> Nasdaq’s implicit cost analysis and explicit cost analysis do not clearly reflect the costs incurred by similar groups of traders so cannot be combined. For example, while the connectivity and market data costs in Figure 2 are presumably incurred by all traders that connect to the exchange, the analysis of realized spreads in Figure 3 only considers the estimated fees/rebates paid by a “large market maker.” See *id.* Furthermore, as Nasdaq acknowledges, “markouts,” *i.e.*, realized spreads, measure the theoretical profitability from the perspective of a liquidity provider, which represents a cost to the liquidity taker. See Nasdaq Paper, *supra* note 5, at 61 n.35. As such, they reflect a cost incurred by one group of market participants on an exchange, but the theoretical profits of another group.

<sup>132</sup> For example, while Figure 2, Figure 3, and Table 1 are presented in units of “mils” (*i.e.*, 1/1,000th of a dollar); Figure 4 is presented in basis points (*i.e.*, 0.01 percentage points). See Nasdaq Paper, *supra* note 5, at 60–72. In addition, while Figures 2 and 3 are presented “per trade,” it is not clear whether Table 1 and Figure 4 are presented per trade or per share. See *id.*

is subject to competition for all of its joint platform products, the Commission is unable to find that Nasdaq has met its burden to demonstrate that the proposed fees are reasonable as required by Section 6(b)(4) of the Exchange Act.

## 2. Equitable Allocation of Reasonable Fees, Unfair Discrimination, and Burden on Competition

### a. Exchange Arguments

The Exchange states that the proposed fees are equitable and reasonable because they will be subject to competition.<sup>133</sup> The Exchange states that the Proposal is not unfairly discriminatory and that Non-Display Usage of depth-of-book data and the Exchange’s 40Gb and 10Gb Ultra high-speed connections will be offered to all members and non-members on like terms.<sup>134</sup> The Exchange states that incentive programs have been widely adopted by exchanges, and are reasonable, equitable, and non-discriminatory because they are open on an equal basis to similarly situated members and provide additional benefits or discounts that are reasonably related to the value to an exchange’s market quality and activity.<sup>135</sup> The Exchange also states that the Proposal is not unfairly discriminatory with respect to either members or non-members as it is not unfair to charge more to firms that do not directly contribute order flow to the Exchange, but nevertheless benefit from that order flow through tighter spreads, better prices, and the other advantages of a more liquid platform.<sup>136</sup> The Exchange states that all members that meet the ADV threshold will be charged lower fees and Nasdaq offers rebates to members that offer displayed liquidity.<sup>137</sup> The Exchange states that, with these rebates, any member—even smaller members—should have the ability to post sufficient displayed liquidity to meet the ADV threshold.<sup>138</sup> The Exchange also states that the Proposal is not unfairly discriminatory with respect to non-members that are broker-dealers because they have the option of becoming members to obtain the lower fees, and because they realize the benefits of higher liquidity, including tighter spreads and better prices, and it is not unfair discrimination to charge a higher fee for that benefit.<sup>139</sup> The Exchange further states that the Proposal is not unfairly

<sup>133</sup> See Notice, *supra* note 3, at 24074.

<sup>134</sup> See Notice, *supra* note 3, at 24074.

<sup>135</sup> See Notice, *supra* note 3, at 24073.

<sup>136</sup> See Notice, *supra* note 3, at 24074.

<sup>137</sup> See Notice, *supra* note 3, at 24074.

<sup>138</sup> See Notice, *supra* note 3, at 24074.

<sup>139</sup> See Notice, *supra* note 3, at 24074.

discriminatory with respect to non-member firms that are not broker-dealers, such as market data vendors and index providers, because they also benefit from the value that the additional liquidity generated by this Proposal will provide to the trading platform.<sup>140</sup> The Exchange states that discounts for specific categories of market participants are well-established, and include non-professional fees, broker-dealer enterprise licenses, and a media enterprise license.<sup>141</sup>

#### b. Opposing Comments and Exchange Response

Multiple commenters state that the Proposal is unfairly discriminatory, as well as an undue burden on competition, and inconsistent with a past Commission order disapproving a similar Nasdaq proposed rule change.<sup>142</sup>

<sup>140</sup> See Notice, *supra* note 3, at 24074.

<sup>141</sup> See also Notice, *supra* note 3, at 24074 (citing as an example The Nasdaq Stock Market, Price List—U.S. Equities, available at <http://www.nasdaqtrader.com/Trader.aspx?id=DPUSData> (providing discounts for Non-Professional subscribers for Nasdaq TotalView and other market data products, enterprise licenses for broker-dealers for multiple market data products, and a digital media enterprise license for Nasdaq Basic)).

<sup>142</sup> See HMA Letter, *supra* note 72, at 6–8 and SIFMA Letter, *supra* note 72, at 3 (both citing portions of Release No. 65362 (September 20, 2011), 76 FR 59466 (September 26, 2011) (SR–NASDAQ–2011–010) (Order Disapproving a Proposed Rule Change to Link Market Data Fees and Transaction Execution Fees) (“NASDAQ–2011–010 Disapproval Order”) (specifically citing the Commission statements that “[t]he Commission also does not believe NASDAQ has demonstrated that the incremental step of linking the pricing of trade executions and market data is an equitable allocation of fees, or is not unfairly or unreasonably discriminatory . . . exchanges that do not provide market data, or that already do not charge any participant for market data, would not be able to respond to NASDAQ’s proposal with a similar pricing scheme,” “preventing the linking of market data fees to trade executions will help bolster competitive forces in the area of market data, because exchange market data fees must appeal simultaneously to market participants that trade directly on an exchange and those that do not trade directly on an exchange . . . . The Commission believes it is important to preserve competitive forces for market data as much as possible,” and “The Commission is similarly concerned about placing an undue burden on competition in the execution services market. NASDAQ’s proposal would allow it to use significant discounts on fees for its market data products as an inducement to attract order flow rather than relying on the quality of its transaction services and the level of its transaction fees to compete for orders. NASDAQ states that any competitor exchange could choose to respond to the proposed pricing by NASDAQ by offering its own discounts on its data products.”). See also MEMX Letter, *supra* note 72, at 5–8 (further questioning why the Exchange would file such a similar proposal to the one that was disapproved in 2011, and states that the Proposal may be a pre-emptive response to anticipated changes to Regulation NMS and its market structure rules limiting transaction-based incentives as it would potentially preserve the ability for incumbent exchanges to influence market participant routing behavior and stating that the

One commenter states that the Proposal is an example of Nasdaq leveraging its market power to reduce competition “by offering discounts on overpriced services” to Nasdaq members who route order flow to Nasdaq.<sup>143</sup>

One commenter states that any Nasdaq member trading less than the proposed Minimum ADV would be disadvantaged by having to pay higher connectivity fees or by having to alter its order routing in a way that the current volume on Nasdaq suggests would be sub-optimal for business, creating a massive burden on competition, and discriminating against those who cannot or do not qualify, as well as other trading venues.<sup>144</sup> Another commenter states that non-members will always pay higher fees as well as members who do not meet the threshold, which benefits the larger members on the Exchange, and the Exchange itself, at the expense of smaller members and non-members and creates a significant competitive imbalance in the markets for the relevant market data and connectivity services.<sup>145</sup> Another commenter similarly states that the Proposal is an undue burden on competition and discriminates against those who are not members or who cannot meet the Minimum ADV as market data and connectivity are indispensable to broker-dealers and other market participants.<sup>146</sup>

In response, Nasdaq states that there is nothing inherently unfair or discriminatory about offering different prices to different categories of customers based on the type or quantity

Proposal “offers a potential end run around such changes by allowing larger incumbent exchanges to provide ‘incentives’ through increasing fees charged for related services and then ‘discount[ing]’ those fees for firms that meet specified volume thresholds” which would “preserve the ability for incumbent exchanges to influence market participant routing behavior in a world where explicitly transaction-based incentives are more difficult to offer due to regulatory constraints” and “[s]maller exchanges that price their services fairly, as required by the [Exchange] Act, would not be able to provide comparable incentives as the incentives are predicated on charging excessive fees that are then reduced for market participants that route order flow to the exchange implementing the fee instead of one of many competitive execution venues.”

<sup>143</sup> See MEMX Letter, *supra* note 72, at 2.

<sup>144</sup> See HMA Letter, *supra* note 72, at 5. This same commenter states that “[i]n the face of that reality, Nasdaq’s wholly unsupported claim that these fees, in particular, should be permitted because they are somehow part of an overall competitive environment rings hollow.” *Id.*

<sup>145</sup> See SIFMA Letter, *supra* note 72, at 3 and 5 (also stating that there is not sufficient information or analysis provided in the Proposal to overcome these concerns).

<sup>146</sup> See MEMX Letter, *supra* note 72, at 5–6 (also stating that the fact that the Minimum ADV required is low does not make the Proposal any less unfairly discriminatory or anti-competitive).

of the service purchases, including providing incentives to certain customers to direct more order flow to an exchange.<sup>147</sup> Nasdaq further states that offering pricing incentives to attract customer orders is procompetitive behavior and states that Commission “has approved differential pricing on numerous prior occasions.”<sup>148</sup> Nasdaq states that a prohibition against all differential pricing would suppress competition and harm buyers because the sellers would likely respond by not making any price cuts at all to avoid the cost of extending them to all buyers, which would in effect establish an artificial price floor.<sup>149</sup> Nasdaq states that differentiation and variation in product offerings are hallmarks of competition and beneficial to customers and consumer welfare.<sup>150</sup> Nasdaq also states that the Minimum ADV is reasonable because the burden on any member is expected to be minor and such a burden is offset by the significant benefit to all market participants of more efficient trading and lower costs.<sup>151</sup>

Nasdaq reiterates that the Proposal is neither unfairly discriminatory to a non-member broker-dealer because the non-member broker-dealers have the option of becoming members to obtain the proposed lowered fee and they also realize the benefits of more liquidity on the exchange, nor to non-member firms that are not broker-dealers since those non-members also benefit from the additional liquidity expected by the Proposal.<sup>152</sup> Finally, Nasdaq states that the Proposal does not place an undue burden on competition and that providing discounts is not anti-competitive,<sup>153</sup> and that bundled discounts are also pro-competitive.<sup>154</sup>

<sup>147</sup> See Nasdaq Response Letter, *supra* note 71, at 15.

<sup>148</sup> See Nasdaq Response Letter, *supra* note 71, at 16–17. Nasdaq states that Commission “has acknowledged that exchanges can offer different prices to ‘particular classes of subscribers’ based on market conditions such as ‘their economic circumstances and their needs for and use of . . . information.’” *Id.* at 17 (citing Concept Release, Regulation of Market Information Fees and Revenues, 64 FR 70613, 70630 (December 17, 1999)).

<sup>149</sup> See Nasdaq Response Letter, *supra* note 71, at 16.

<sup>150</sup> See Nasdaq Response Letter, *supra* note 71, at 17.

<sup>151</sup> See Nasdaq Response Letter, *supra* note 71, at 19.

<sup>152</sup> See Nasdaq Response Letter, *supra* note 71, at 19–20.

<sup>153</sup> See Nasdaq Response Letter, *supra* note 71, at 20 (stating that courts are wary about claims that offering discounts is anti-competitive because lower prices benefit customers regardless of how those prices are set, as long as they are above predatory levels).

<sup>154</sup> See Nasdaq Response Letter, *supra* note 71, at 20.

c. Analysis of Arguments Regarding Equitable Allocation, Unfair Discrimination, and Burden on Competition Not Necessary or Appropriate

Nasdaq proposes to increase fees for certain market data and connectivity products and to maintain the current fees for such products if members meet the Minimum ADV. The Proposal would thereby link the level of Nasdaq trading volume (*i.e.*, executed displayed volume) to the level of fees for Nasdaq market data and connectivity products. In disapproving a prior Nasdaq proposal to link market data pricing to transaction volume, the Commission cited its previous statement that the Exchange Act precludes exchanges from adopting terms for market data distribution that unfairly discriminate by favoring participants in an exchange's market or penalizing participants in other markets.<sup>155</sup> Nasdaq has not demonstrated that the incremental step of linking the pricing of market data and connectivity to Nasdaq trading volume (*i.e.*, the Minimum ADV) is an equitable allocation of fees as required by Section 6(b)(4) of the Exchange Act, is not unfairly discriminatory as required by Section 6(b)(5) of the Exchange Act, and is consistent with Section 11A of the Exchange Act and Rules 603(a)(1) and 603(a)(2) of Regulation NMS which, among other things, require the Exchange to distribute market data on terms that are "fair and reasonable" and "not unreasonably discriminatory." Nasdaq states that the marketplace is intensely competitive, and states that competitive forces ensure that the Proposal is equitable and not unfairly discriminatory. The Proposal would result in market participants paying different fees for the same market data from Nasdaq depending on the amount of their executed displayed volume on the Exchange.<sup>156</sup> Thus, the Proposal

<sup>155</sup> See NASDAQ-2011-010 Disapproval Order, *supra* note 142. "[A]n exchange proposal that seeks to penalize market participants for trading in markets other than the proposing exchange would present a substantial countervailing basis for finding unreasonable and unfair discrimination and likely would prevent the Commission from approving an exchange proposal." See Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74791 (December 9, 2008) (SR-NYSEArca-2006-21) (Order Setting Aside Action by Delegated Authority and Approving Proposed Rule Change Relating to NYSE Arca Data), vacated and remanded by *NetCoalition v. SEC*, No. 09-1042 (D.C. Cir. 2010) but on other grounds.

<sup>156</sup> The Commission agrees with the commenter who states that the absence of an analysis of how many, what types, and how firms will be impacted by the proposed fee change makes it difficult to evaluate the proposed Minimum ADV threshold. See SIFMA Letter, *supra* note 72, at 6. This specific

adopts terms for market data distribution that unfairly discriminate by favoring participants in an exchange's market or penalizing participants in other markets.<sup>157</sup>

The Commission is concerned that the Proposal would result in an inequitable allocation of fees and unfairly discriminate against market participants who are users of market data and connectivity but are not significant users of execution services and do not meet the Minimum ADV requirement, and thus would not qualify for the lower market data and connectivity fees. This could include, for example, market participants who divide their liquidity provision among multiple exchanges that trade NMS stocks, or that utilize market data but do not trade on Nasdaq, and thus do not provide sufficient executed displayed volume to Nasdaq to qualify for the lower market data fees. In this regard, the Commission is concerned that linking market data and connectivity fees to executed displayed volume would essentially allow Nasdaq to charge significantly higher fees for market data and connectivity to market participants that choose to provide liquidity at other exchanges, by charging them more than those Nasdaq members that meet the Minimum ADV on Nasdaq. By requiring market participants to become members of the Exchange (and then meet the Minimum ADV) to receive the proposed pricing benefit for market data and connectivity, the Proposal would penalize market participants for not being a member of the Exchange and thus the Proposal would adopt terms for market data distribution that would unfairly discriminate against those market participants that cannot or will not become members of the Exchange.

Nasdaq has not demonstrated that the incremental step of linking the pricing of market data and connectivity to Nasdaq trading volume (*i.e.*, the Minimum ADV) would not impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Exchange Act as required by Section 6(b)(8) of the Exchange Act. As discussed above, Nasdaq states it currently faces intense "competition as a platform," and that its proposal is providing an incentive for members who provide a requisite level of liquidity lower fees for market data

commenter states that the Proposal "did not include the number or size of members that currently trade in volumes that meet the definition of the proposed term 'Minimum ADV,' how many additional members it would expect to cross the threshold as a result of the [ ] Proposal, or comparison of these statistics at various volume threshold levels." *Id.*

<sup>157</sup> See *supra* note 155.

and connectivity.<sup>158</sup> Nasdaq states that "[p]roviding discounts is not anti-competitive" and states its view that "courts have also deemed 'bundled' discounts, like the Proposal, to be pro-competitive."<sup>159</sup> Nasdaq acknowledges, however, that a bundled discount might harm competition "when it is offered by firms holding or on the verge of gaining monopoly power in the relevant market."<sup>160</sup> However, Nasdaq has not adequately articulated why the linking of market data and connectivity fees to the Minimum ADV will not negatively impact the competition that exists today in the market for order flow. The Proposal would allow Nasdaq to use a significant discount on the fee for its market data product as an inducement to attract liquidity rather than relying on the quality of its transaction services to compete for displayed liquidity. As discussed above, Nasdaq fails to demonstrate that its market data and connectivity products are subject to competitive forces, and preventing the linking of market data fees to executed displayed volume will help prevent exchanges from using their advantages in the area of market data to reduce competitive forces in the market for order flow.<sup>161</sup>

#### IV. Conclusion

For the reasons set forth above, the Commission does not find that the proposed rule change is consistent with the Exchange Act and the rules and regulations thereunder applicable to a national securities exchange, and, in particular, with Sections 6(b)(4), 6(b)(5), 6(b)(8), and 11A of the Exchange Act and with Rules 603(a)(1) and 603(a)(2) of Regulation NMS thereunder.

It is therefore ordered, pursuant to Section 19(b)(3)(C) of the Exchange Act,<sup>162</sup> that File No. SR-NASDAQ-2024-016, be and hereby is, disapproved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>163</sup>

**Sherry R. Haywood,**  
*Assistant Secretary.*

[FR Doc. 2024-28258 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

<sup>158</sup> See Notice, *supra* note 3, at 24071.

<sup>159</sup> See Nasdaq Response Letter, *supra* note 71, at 20.

<sup>160</sup> See Nasdaq Response Letter, *supra* note 71, at 20.

<sup>161</sup> See *supra* notes 82-84 and accompanying text (commenters stating that there is a lack of competition for exchange market data products and that Nasdaq has pricing power for its market data products).

<sup>162</sup> 15 U.S.C. 78s(b)(3)(C).

<sup>163</sup> 17 CFR 200.30-3(a)(12).

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–101759; File No. 4–845]

### Self-Regulatory Organizations; MIAX Emerald, LLC; Notice of Filing of Proposed Minor Rule Violation Plan

November 26, 2024.

Pursuant to Section 19(d)(1) of the Securities Exchange Act of 1934 (the “Act”),<sup>1</sup> and Rule 19d–1(c)(2) thereunder,<sup>2</sup> notice is hereby given that on November 19, 2024, MIAX Emerald, LLC (“Emerald” or the “Exchange”) filed with the Securities and Exchange Commission (“Commission”) a proposed minor rule violation plan (“MRVP”) with sanctions not exceeding \$2,500 which would not be subject to the provisions of Rule 19d–1(c)(1) of the Act<sup>3</sup> requiring that a self-regulatory organization (“SRO”) promptly file notice with the Commission of any final disciplinary action taken with respect to any person or organization.<sup>4</sup> In accordance with Rule 19d–1(c)(2) under the Act,<sup>5</sup> the Exchange proposes to designate certain specified rule violations as minor rule violations, and requests that it be relieved of the prompt reporting requirements regarding such violations, provided it gives notice of such violations to the Commission on a quarterly basis.

The Exchange proposes to include in its MRVP the procedures and violations currently included in Exchange Rule 1014 (“Imposition of Fines for Minor Rule Violations”).<sup>6</sup> According to the Exchange’s proposed MRVP, under Rule 1014, the Exchange may impose a fine (not to exceed \$2,500) on any Member, or person associated with or employed

by a Member, for any rule violation listed in Rule 1014(d).<sup>7</sup> The Exchange shall serve the person against whom a fine is imposed with a written statement setting forth the rule or rules allegedly violated, the act or omission constituting each such violation, the fine imposed for each violation, and the date by which such determination becomes final or by which such determination must be paid or contested. If the person against whom the fine is imposed pays the fine, such payment shall be deemed to be a waiver of such person’s right to a disciplinary proceeding and any review of the matter under the Exchange rules. Any person against whom a fine is imposed may contest the Exchange’s determination by filing with the Exchange a written answer, at which point the matter shall become a disciplinary proceeding.

The Exchange proposes that, as set forth in Exchange Rule 1014(d), violations of the following rules would be appropriate for disposition under the MRVP: Rule 307 (Position Limits); Rule 803 (Focus Reports); Rule 804 (Requests for Trade Data); Rule 520 (Order Entry); Rule 603 (Quotation Parameters); Rule 605 (Execution of Orders in Appointed Options); Rule 314 (Mandatory Systems Testing); Rule 700 (Exercise of Option Contracts); Rule 309 (Exercise Limits); Rule 310 (Reports Related to Position Limits); Rule 403 (Trading in Restricted Classes); Rule 604 (Market Maker Quotations); Rule 1904 (Failure to Timely File Amendments to Form U4, Form U5, and Form BD); and Rules 1701–1713 (Failure to Comply with the Consolidated Audit Trail Compliance Rule Under Chapter XVII). The Exchange states that it is specifically excluding Rule 1014(d)(4), Conduct and Decorum Policies, from this filing.

Upon the Commission’s declaration of effectiveness of the MRVP, the Exchange will provide to the Commission a quarterly report for any actions taken on minor rule violations under the MRVP. The quarterly report will include: the disposition date, the name of the firm/individual, the Exchange’s internal enforcement number, the review period, the nature of the violation type, the number of the rule that was violated, the number of instances the violation occurred, and the sanction imposed.

Based on compliance with the above, the Exchange requests that the rule violations designated in Rule 1014(d) be designated as minor rule violations

subject to a minor rule violation reporting plan and that the Exchange be relieved of the current reporting requirements regarding such violations. In addition, going forward, to the extent that there are any changes to the rules applicable to the Exchange’s MRVP, the Exchange requests that the Commission deem such changes to be modifications to the Exchange’s MRVP.

#### I. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed MRVP is consistent with the Act. Comments may be submitted by any of the following methods:

##### *Electronic Comments*

- Use the Commission’s internet comment form (<https://www.sec.gov/rules/sro.shtml>); or

- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include File No. 4–845 on the subject line.

##### *Paper Comments*

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File No. 4–845. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission’s internet website (<https://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed MRVP that are filed with the Commission, and all written communications relating to the proposed MRVP between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission’s Public Reference Room, 100 F Street NE, Washington, DC 20549 on official business days between the hours of 10 a.m. and 3 p.m. Copies of the proposed MRVP also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer

<sup>1</sup> 15 U.S.C. 78s(d)(1).

<sup>2</sup> 17 CFR 240.19d–1(c)(2).

<sup>3</sup> 17 CFR 240.19d–1(c)(1).

<sup>4</sup> The Commission adopted amendments to paragraph (c) of Rule 19d–1 to allow SROs to submit for Commission approval plans for the abbreviated reporting of minor disciplinary infractions. See Securities Exchange Act Release No. 21013 (June 1, 1984), 49 FR 23828 (June 8, 1984). Any disciplinary action taken by an SRO against any person for violation of a rule of the SRO which has been designated as a minor rule violation pursuant to such a plan filed with and declared effective by the Commission shall not be considered “final” for purposes of Section 19(d)(1) of the Act if the sanction imposed consists of a fine not exceeding \$2,500 and the sanctioned person has not sought an adjudication, including a hearing, or otherwise exhausted his administrative remedies.

<sup>5</sup> 17 CFR 240.19d–1(c)(2).

<sup>6</sup> The Exchange received its grant of registration on December 20, 2018, which included approving the rules that govern the Exchange. The Exchange notes that certain chapters of the Exchange’s rules are incorporated by reference from the rules of the Exchange’s affiliate Miami International Securities Exchange, LLC (MIAX Options). Specifically, Chapter X, DISCIPLINE, which contains Rule 1014, Imposition of Fines for Minor Rule Violations.

<sup>7</sup> While Rule 1014 allows the Exchange to administer fines up to \$5,000, the Exchange is only seeking relief from the reporting requirements of paragraph (c)(1) of Rule 19d–1 for fines administered under Rule 1014(d) that do not exceed \$2,500.

to File No. 4–845 and should be submitted on or before December 24, 2024.

## II. Date of Effectiveness of Proposed Minor Rule Violation Plan and Timing for Commission Action

Pursuant to Section 19(d)(1) of the Act and Rule 19d–1(c)(2) thereunder,<sup>8</sup> after December 24, 2024, the Commission may, by order, declare the Exchange’s proposed MRVP effective if the plan is consistent with the public interest, the protection of investors, or otherwise in furtherance of the purposes of the Act. The Commission in its order may restrict the categories of violations to be designated as minor rule violations and may impose any other terms or conditions to the proposed MRVP, File No. 4–845, and to the period of its effectiveness, which the Commission deems necessary or appropriate in the public interest, for the protection of investors or otherwise in furtherance of the purposes of the Act.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>9</sup>

**Sherry R. Haywood,**  
*Assistant Secretary.*

[FR Doc. 2024–28255 Filed 12–2–24; 8:45 am]

BILLING CODE 8011–01–P

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–101773; File No. SR–BOX–2024–29]

### Self-Regulatory Organizations; BOX Exchange LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Rules 3120 (Position Limits) and 5020 (Criteria for Underlying Securities) To Permit Options Trading on Bitcoin Funds

November 27, 2024.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”),<sup>1</sup> and Rule 19b–4 thereunder,<sup>2</sup> notice is hereby given that on November 25, 2024, BOX Exchange LLC (“Exchange”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

<sup>8</sup> 15 U.S.C. 78s(d)(1); 17 CFR 240.19d–1(c)(2).

<sup>9</sup> 17 CFR 200.30–3(a)(44).

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b–4.

### I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend proposes to amend Rules 3120 (Position Limits), 5020 (Criteria for Underlying Securities), and 5055 (FLEX Equity Options). The text of the proposed rule change is available from the principal office of the Exchange, at the Commission’s Public Reference Room and also on the Exchange’s internet website at <https://rules.boxexchange.com/rulefilings>.

### II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

#### A. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

##### 1. Purpose

The Exchange proposes to amend Rules 3120 (Position Limits) and 5020 (Criteria for Underlying Securities) to permit options trading on the Fidelity Wise Origin Bitcoin Fund (the “Fidelity Fund”) and the ARK 21Shares Bitcoin ETF (the “ARK 21 Fund” and, with the Fidelity Fund, the “Bitcoin Funds”).<sup>3</sup> Additionally, the Exchange proposes to amend Rule 5055 (FLEX Equity Options). Specifically, the Exchange proposes to amend Rule 5020(h) to allow the Exchange to list and trade options on the Bitcoin Funds.<sup>4</sup> This is a competitive filing that is based on a proposal recently submitted by Cboe

<sup>3</sup> See Securities Exchange Act Release No. 99306 (January 10, 2024), 89 FR 3008, 3009 (January 17, 2024) (SR–NYSEArca–2021–90; SR–NYSEArca–2023–44; SR–NYSEArca–2023–58; SR–NASDAQ–2023–016; SR–NASDAQ–2023–019; SR–CboeBZX–2023–028; SR–CboeBZX–2023–038; SR–CboeBZX–2023–040; SR–CboeBZX–2023–042; SR–CboeBZX–2023–044; and SR–CboeBZX–2023–072) (Order Granting Accelerated Approval of Proposed Rule Changes, as Modified by Amendments Thereto, to List and Trade Bitcoin-Based Commodity-Based Trust Shares and Trust Units) (“Bitcoin ETP Approval Order”).

<sup>4</sup> See proposed Rule 5020(h).

Exchange, Inc. (“CBOE”) and approved by the Commission.<sup>5</sup>

As discussed herein and as provided in the CBOE Approval Order, the Exchange believes options on the Bitcoin Funds would permit hedging, and allow for more liquidity, better price efficiency, and less volatility with respect to the underlying Funds. Further, permitting the listing of such options would enhance the transparency and efficiency of markets in these and correlated products. Rule 5020(h) provides that, subject to certain other criteria set forth in the Rule, securities deemed appropriate for options trading include Exchange-Traded Fund Shares (or ETFs), that represent certain types of interests<sup>6</sup> and exchange-traded products (“ETPs”)

<sup>5</sup> See Securities Exchange Act Release No. 101387 (October 18, 2024), 89 FR 84948 (October 24, 2024) (Notice of Filing of Amendment Nos. 2 and 3 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 2 and 3, to Permit the Listing and Trading of Options on Bitcoin Exchange-Traded Funds) (SR–CBOE–2024–035, as amended) (“CBOE Approval Order”).

<sup>6</sup> See Rule 5020(h), which permits options trading on ETFs that are traded on a national securities exchange and are defined as an “NMS stock” in Rule 600 of Regulation NMS and that (i) represent interests in registered investment companies (or series thereof) organized as open-end management investment companies, unit investment trusts or similar entities that hold portfolios of securities and/or financial instruments, including, but not limited to, stock index futures contracts, options on futures, options on securities and indices, equity caps, collars and floors, swap agreements, forward contracts, repurchase agreements and reverse repurchase agreements (the “Financial Instruments”) and money market instruments, including, but not limited to, U.S. government securities and repurchase agreements (the “Money Market Instruments”) comprising or otherwise based on or representing investments in broad-based indexes or portfolios of securities and/or Financial Instruments and Money Market Instruments (or that hold securities in one or more other registered investment companies that themselves hold such portfolios of securities and/or Financial Instruments and Money Market Instruments); or (ii) represent interests in a trust that holds a specified non-U.S. currency deposited with the trust or similar entity when aggregated in some specified minimum number may be surrendered to the trust by the beneficial owner to receive the specified non-U.S. currency or currencies and pays the beneficial owner interest and other distributions on the deposited non-U.S. currency or currencies, if any, declared and paid by the trust (“Currency Trust Shares”); or (iii) represent commodity pool interests principally engaged, directly or indirectly, in holding and/or managing portfolios or baskets of securities, commodity futures contracts, options on commodity futures contracts, swaps, forward contracts and/or options on physical commodities and/or non-U.S. currency (“Commodity Pool ETFs”) or (iv) represent interests in the SPDR® Gold Trust, the iShares COMEX Gold Trust, the iShares Silver Trust, the abrdn Gold ETF Trust, the abrdn Silver ETF Trust, the abrdn Palladium ETF Trust, the abrdn Platinum ETF Trust, the Sprott Physical Gold Trust, the iShares Bitcoin Trust, the Grayscale Bitcoin Trust, the Grayscale Bitcoin Mini Trust or the Bitwise Bitcoin ETF; provided that all of the conditions in Rules 5020(h)(1) and (2) are met.



structured as trusts that hold precious metals (which are deemed commodities).<sup>7</sup> Like ETPs backed by precious metals (*i.e.*, commodities), the Exchange proposes to allow options trading on the Bitcoin Funds that hold Bitcoin—which is also deemed a commodity.<sup>8</sup> The Bitcoin Funds are structured as trusts that hold Bitcoin. Like ETFs and ETPs currently deemed appropriate for options trading, the investment objective of each Bitcoin Fund trust is for its shares to reflect the performance of Bitcoin (less the expenses of the trust's operations), offering investors an opportunity to gain exposure to Bitcoin without the complexities of Bitcoin delivery. Each Bitcoin Fund's shares represent units of fractional undivided beneficial interest in the trust, the assets of which consist principally of Bitcoin and are designed to track Bitcoin or the performance of the price of Bitcoin and offer access to the Bitcoin market.<sup>9</sup> The Bitcoin Funds provide investors with cost-efficient alternatives that allow a level of participation in the Bitcoin market through the securities market. The Exchange believes each Bitcoin Fund satisfies the Exchange's initial listing standards set forth in Rule 5020(a).<sup>10</sup> The Exchange notes that the Bitcoin Funds also satisfy the listing standard applied to ETFs traded on the Exchange that they be available for creation and redemption each business day as set forth in Rule 5020(h).<sup>11</sup> First, each of the Bitcoin Funds satisfy the criteria and guidelines set forth in Rule 5020(a). Pursuant to Rule 5020(a), a security on which options may be listed and traded on the Exchange must be duly registered (with the Commission) and be an NMS stock (as defined in Rule 600 of Regulation NMS under the Act) and be characterized by a substantial number of outstanding shares that are widely held

<sup>7</sup> See Rule 5020(h) (permitting the listing and trading of options on certain ETPs backed by precious metals).

<sup>8</sup> See proposed Rule 5020(h).

<sup>9</sup> The trust may include minimal cash.

<sup>10</sup> Rule 5020(a) provides for guidelines to be used by the Exchange when evaluating potential underlying securities for Exchange option transactions.

<sup>11</sup> Rule 5020(h)(1) requires that ETFs must be available for creation or redemption each business day from or through the issuer in cash or in kind at a price related to net asset value, and the issuer must be obligated to issue ETFs in a specified aggregate number even if some or all of the investment assets required to be deposited have not been received by the issuer, subject to the condition that the person obligated to deposit the investments has undertaken to deliver the investment assets as soon as possible and such undertaking is secured by the delivery and maintenance of collateral consisting of cash or cash equivalents satisfactory to the issuer, as provided in the respective prospectus.

and actively traded.<sup>12</sup> Each of the Bitcoin Funds is an NMS Stock as defined in Rule 600 of Regulation NMS under the Act.<sup>13</sup>

As provided in the CBOE Approval Order, each Bitcoin Fund is characterized by a substantial number of outstanding shares that are widely held and actively traded. Specifically, as shown in the CBOE Approval Order, each of the Bitcoin Funds had significantly more than 7,000,000 shares outstanding (approximately 29 and 6.5 times that amount, respectively), which is the minimum number of shares of a corporate stock that the Exchange generally requires to list options on that stock pursuant to Rule 5020(b). The Exchange believes this demonstrates that each Bitcoin Fund is characterized by a substantial number of outstanding shares.

Further, as provided in the CBOE Approval Order, each Bitcoin Fund has significantly more than 2,000 beneficial holders (approximately 140 and 35 times more, respectively), which is the minimum number of holders the Exchange generally requires for corporate stock in order to list options on that stock pursuant to Rule 5020(b)(2). Therefore, the Exchange believes the shares of each Bitcoin Fund are widely held.

The Exchange also believes the shares of each Bitcoin Fund are actively traded. As provided in the CBOE Approval Order, even though these Bitcoin Funds have been trading for less than one year, the trading volume for each is substantially higher than 2,400,000 shares (between roughly 464 and 124 times that amount), which is the minimum 12-month volume the Exchange generally requires for a security in order to list options on that security as set forth in Rule 5020(b).

In addition to satisfying the Exchange's initial listing standards, options on Bitcoin Funds will be subject to the Exchange's continued listing standards as set forth in Rule 5030(h). Pursuant to Rule 5030(b), the Exchange will not open for trading any additional series of option contracts covering a fund traded on the Exchange if such fund ceases to be an "NMS stock" as

<sup>12</sup> The criteria and guidelines for a security to be considered widely held and actively traded are set forth in Rule 5020(b), subject to exceptions.

<sup>13</sup> An "NMS stock" means any NMS security other than an option, and an "NMS security" means any security or class of securities for which transaction reports are collected, processed, and made available pursuant to an effective transaction reporting plan (or an effective national market system plan for reporting transaction in listed options). See 17 CFR 242.600(b)(64) (definition of "NMS security") and (65) (definition of "NMS stock").

provided for in Rule 5030(a) or the fund is halted from trading on its primary market.<sup>14</sup> Additionally, options on funds traded on the Exchange may be subject to the suspension of opening transactions as follows: (1) the fund no longer meets the terms of Rule 5030(b); (2) following the initial twelve-month period beginning upon the commencement of trading of the fund, there are fewer than 50 record and/or beneficial holders of the fund for 30 or more consecutive trading days; (3) the value of the underlying commodity is no longer calculated or available; or (4) such other event occurs or condition exists that in the opinion of the Exchange makes further dealing on BOX inadvisable.

Options on each Bitcoin Fund will be physically settled contracts with American-style exercise.<sup>15</sup> Consistent with Rule 5050, which governs the opening of options series on a specific underlying security (including ETFs and ETPs), BOX will open at least one expiration month for options on each Bitcoin Fund<sup>16</sup> at the commencement of trading on the Exchange and may also list series of options on Bitcoin Funds for trading on a weekly,<sup>17</sup> monthly,<sup>18</sup> or

<sup>14</sup> See Rule 5030(h).

<sup>15</sup> See Rule 5010 (Rights and Obligations of Holders and Writers), which provides that the rights and obligations of holders and writers of option contracts of any class of options dealt in on the Exchange shall be as set forth in the Rules of the Clearing Corporation. See also OCC Rules, Chapter VIII, which governs exercise and assignment, and Chapter IX, which governs the discharge of delivery and payment obligations arising out of the exercise of physically settled stock option contracts. OCC Rules can be located at: <https://www.theocc.com/getmedia/9d3854cd-b782-450f-bcf7-33169b0576ce/occrules.pdf>.

<sup>16</sup> See Rule 5050(b). The standard expirations are subject to certain listing criteria for underlying securities described within Rule 5020. Standard listings expire the third Friday of the month. The term "expiration date" (unless separately defined elsewhere in the OCC By-Laws), when used in respect of an option contract (subject to certain exceptions), means the third Friday of the expiration month of such option contract, or if such Friday is a day on which the exchange on which such option is listed is not open for business, the preceding day on which such exchange is open for business. See OCC By-Laws Article I, Section 1. Pursuant to Rule 5050(c), additional series of options of the same class may be opened for trading on the Exchange when the Exchange deems it necessary to maintain an orderly market, to meet customer demand or when the market price of the underlying stock moves more than five strike prices from the initial exercise price or prices. New series of options on an individual stock may be added until the beginning of the month in which the options contract will expire. Due to unusual market conditions, the Exchange, in its discretion, may add a new series of options on an individual stock until the close of trading on the business day prior to expiration.

<sup>17</sup> See IM-5050-6.

<sup>18</sup> See IM-5050-13.

quarterly<sup>19</sup> basis. BOX may also list long-term equity option series (“LEAPS”) that expire from twelve to one-hundred eighty months from the time they are listed.<sup>20</sup> Pursuant to IM–5050–1(b), which governs strike prices of series of options on ETFs, the interval between strike prices of series of options on Bitcoin Funds will be \$1 or greater when the strike price is \$200 or less and \$5 or greater where the strike price is over \$200.<sup>21</sup> Additionally, BOX may list series of options pursuant to the \$1 Strike Price Interval Program,<sup>22</sup> the \$0.50 Strike Program,<sup>23</sup> and the \$2.50 Strike Price Program.<sup>24</sup> Pursuant to Rule 7050, where the price of a series of a Bitcoin Fund option is less than \$3.00, the minimum increment will be \$0.05, and where the price is \$3.00 or higher, the minimum increment will be \$0.10.<sup>25</sup> Any and all new series of Bitcoin Fund options that BOX lists will be consistent and comply with the expirations, strike prices, and minimum increments set forth in Rules 5050 and 7050, as applicable. Further, the Exchange notes that Rule Series 10100, which governs margin requirements applicable to the trading of all options on BOX, including options on ETFs and ETPs, will also apply to the trading of Bitcoin Fund options. Other examples of the Exchange Rules that currently apply to all options traded on BOX, include Rules that govern listing criteria, customer accounts, and trading halt procedures.

Rule 5055(e)(2)(i) permits the Exchange to authorize for trading a FLEX Equity Option class on any equity security if it may authorize for trading a Non-FLEX Equity Option class on that equity security pursuant to Rule 5020.<sup>26</sup> At this time, the Exchange is not proposing to permit Bitcoin Fund options to trade as FLEX Equity Options.<sup>27</sup> The Exchange therefore

proposes to modify Rule 5055(e)(2)(i) to specify this exception, which will add clarity and transparency to Exchange Rules.<sup>28</sup>

#### Position and Exercise Limits

CBOE’s Approval Order stated that the position and exercise limits for Bitcoin Funds shall be 25,000 contracts. At this time, the Exchange proposes to amend IM–3120–2 to similarly note that Bitcoin Fund options position limits shall be 25,000 contracts to mirror CBOE’s Approval Order. Rule 3140 provides that the exercise limits shall be determined in the manner described in Rule 3120, therefore the exercise limits would also be 25,000 contracts.

As provided in the CBOE Approval Order, these proposed position and exercise limits were determined considering, among other things, the approximate six-month average daily volume (“ADV”) and outstanding shares of each underlying Bitcoin Fund (which as discussed above demonstrate that each Bitcoin Fund is widely held and actively traded and thus justify these conservatively proposed position limits).

As provided in the CBOE Approval Order, comparing current position and exercise limits of options on ETFs with outstanding shares comparable to those of each Bitcoin Fund, demonstrates the proposed limit to be significantly lower (between two and ten times lower) than the average limits of the options on the other ETFs. As discussed above, the Bitcoin Funds are actively held and widely traded: (1) each Bitcoin Fund (as of August 7, 2024) had significantly more than 7,000,000 shares outstanding, which is the minimum number of shares of a corporate stock that the Exchange generally requires to list options on that stock pursuant to Rule 5020(b)(1); (2) each Bitcoin Fund (as of the dates listed above) had significantly more than 2,000 beneficial holders, which is the minimum number of holders the Exchange generally requires for corporate stock in order to list options on that stock pursuant to Rule 5020(b)(2); and (3) each Bitcoin Fund had a six-month trading volume substantially higher than 2,400,000 shares, which is the minimum 12-month volume the Exchange generally requires for a security in order to list options on that security as set forth in Rule 5020(b)(4).

As provided in the CBOE Approval Order, if a market participant held the

maximum permissible options positions in one of the Bitcoin Fund options and exercised all of them at the same time, that market participant would control a small percentage of the outstanding shares of the underlying Bitcoin Fund.

Rule 3120(d) provides two methods of qualifying for a position limit tier above 25,000 option contracts. The first method is based on six-month trading volume in the underlying security, and the second method is based on slightly lower six-month trading volume *and* number of shares outstanding in the underlying security. As provided in the CBOE Approval Order, the equivalent shares represented by the proposed position and exercise limits for each Bitcoin Fund as a percentage of outstanding shares of the underlying Bitcoin Fund is significantly lower than the percentage for the lowest possible position limit for equity options of 25,000 (under 6% compared to 40%) and is lower than that percentage for each current position limit bucket.<sup>29</sup>

Further, the proposed position and exercise limits for each Bitcoin Fund option are significantly below the limits that would otherwise apply pursuant to current Rule 3120. These position and exercise limits are the lowest position and exercise limits available in the options industry, are extremely conservative and more than appropriate given the market capitalization, average daily volume, and high number of outstanding shares of the Bitcoin Funds.

All of the above information demonstrates that the proposed position and exercise limits for the Bitcoin Fund options are more than reasonable and appropriate. The trading volume, ADV, and outstanding shares of each Bitcoin Fund demonstrate that these funds are actively traded and widely held, and proposed position and exercise limits are well below those of other ETFs with similar market characteristics. The proposed position and exercise limits are the lowest position and exercise limits available for equity options in the industry, are extremely conservative, and are more than appropriate given each Bitcoin Fund’s market capitalization, ADV, and high number of outstanding shares.

Today, the Exchange has an adequate surveillance program in place for options. The Exchange intends to apply those same program procedures to options on the Bitcoin Funds that it applies to the Exchange’s other options

<sup>29</sup> As these percentages are based on the minimum number of outstanding shares an underlying security must have to qualify for the applicable position limit, these are the highest possible percentages that would apply to any option subject to that position and exercise limit.

<sup>19</sup> See IM–5050–4.

<sup>20</sup> See Rule 5070.

<sup>21</sup> The Exchange notes that for options listed pursuant to the Short Term Option Series Program, the Monthly Options Series Program, and the Quarterly Options Series Program, IM–5050–6, IM–5050–13, and IM–5050–4, specifically set forth intervals between strike prices on Quarterly Options Series, Short Term Option Series, and Monthly Options Series, respectively.

<sup>22</sup> See IM–5050–2.

<sup>23</sup> See IM–5050–5.

<sup>24</sup> See IM–5050–3.

<sup>25</sup> If options on a Bitcoin Fund are eligible to participate in the Penny Interval Program, the minimum increment of \$0.01 below \$3.00 and \$0.05 above \$3.00 would apply. See Rule 7050(a)(3). See also Rule 7260 (which describes the requirements for the Penny Interval Program).

<sup>26</sup> See Rule 5055(e)(2)(i).

<sup>27</sup> The Exchange would be required to submit a separate rule filing to permit the Exchange to authorize for trading FLEX Equity Options on the

Bitcoin Funds (which filing may propose changes to existing FLEX Equity Option position limits for such options if appropriate).

<sup>28</sup> See proposed Rule 5055(e)(2)(i).

products.<sup>30</sup> Additionally, the Exchange is a member of the Intermarket Surveillance Group (“ISG”) under the Intermarket Surveillance Group Agreement. The Exchange would be able to obtain information regarding trading in shares of the Bitcoin Funds from Cboe BZX Exchange, Inc. (“BZX”) and other markets that trade shares of the Bitcoin Funds through ISG. ISG members work together to coordinate surveillance and investigative information sharing in the stock, options, and futures markets. In addition, the Exchange has a Regulatory Services Agreement with the Financial Industry Regulatory Authority (“FINRA”) for certain market surveillance, investigation and examinations functions. Pursuant to a multi-party 17d–2 joint plan, all options exchanges allocate amongst themselves and FINRA responsibilities to conduct certain options-related market surveillance that are common to rules of all options exchanges.<sup>31</sup>

The underlying shares of spot bitcoin exchange-traded products (“ETPs”), including the Bitcoin Funds, are also subject to safeguards related to addressing market abuse and manipulation. As the Commission stated in its order approving proposals of several exchanges to list and trade shares of spot bitcoin-based ETPs, “[e]ach Exchange has a comprehensive surveillance-sharing agreement with the CME via their common membership in the Intermarket Surveillance Group. This facilitates the sharing of information that is available to the CME through its surveillance of its markets, including its surveillance of the CME bitcoin futures market.<sup>32</sup> Given the consistently high correlation between the CME Bitcoin futures market and the spot bitcoin market, as confirmed by the

Commission through robust correlation analysis, the Commission was able to conclude that such surveillance sharing agreements could reasonably be “expected to assist in surveilling for fraudulent and manipulative acts and practices in the specific context of the [Bitcoin ETPs].”<sup>33</sup> In light of surveillance measures related to both options and futures as well as the underlying Bitcoin Funds,<sup>34</sup> the Exchange believes that existing surveillance procedures are designed to deter and detect possible manipulative behavior which might potentially arise from listing and trading the proposed options on the Bitcoin Funds. Further, the Exchange will implement any new surveillance procedures it deems necessary to effectively monitor the trading of options on Bitcoin ETPs.

The Exchange has also analyzed its capacity and represents that it believes the Exchange and OPRA have the necessary systems capacity to handle the additional traffic associated with the listing of new series that may result from the introduction of options on Bitcoin Funds up to the number of expirations currently permissible under the Rules. Because the proposal is limited to two classes, the Exchange believes any additional traffic that may be generated from the introduction of Bitcoin Fund options will be manageable.

The Exchange believes that offering options on Bitcoin Funds will benefit investors by providing them with an additional, relatively lower cost investing tool to gain exposure to the price of Bitcoin and hedging vehicle to meet their investment needs in connection with Bitcoin-related products and positions. The Exchange

expects investors will transact in options on Bitcoin Funds in the unregulated over-the-counter (“OTC”) options market,<sup>35</sup> but may prefer to trade such options in a listed environment to receive the benefits of trading listing options, including (1) enhanced efficiency in initiating and closing out positions; (2) increased market transparency; and (3) heightened contra-party creditworthiness due to the role of OCC as issuer and guarantor of all listed options. The Exchange believes that listing Bitcoin Fund options may cause investors to bring this liquidity to the Exchange, would increase market transparency and enhance the process of price discovery conducted on BOX through increased order flow. The ETFs that hold financial instruments, money market instruments, or precious metal commodities on which the Exchange may already list and trade options are trusts structured in substantially the same manner as Bitcoin Funds and essentially offer the same objectives and benefits to investors, just with respect to different assets. The Exchange notes that it has not identified any issues with the continued listing and trading of any ETF options, including ETFs that hold commodities (*i.e.*, precious metals) that it currently lists and trades on the Exchange.

## 2. Statutory Basis

The Exchange believes that the proposal is consistent with the requirements of Section 6(b) of the Securities Exchange Act of 1934 (the “Act”),<sup>36</sup> in general, and Section 6(b)(5) of the Act,<sup>37</sup> in particular, in that it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest.

In particular, the Exchange believes that the proposal to list and trade options on the Bitcoin Funds will remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, protect investors because offering options on the Bitcoin Funds

<sup>35</sup> The Exchange understands from customers that investors have historically transacted in options on ETFs in the OTC options market if such options were not available for trading in a listed environment.

<sup>36</sup> 15 U.S.C. 78f(b).

<sup>37</sup> 15 U.S.C. 78f(b)(5).

<sup>30</sup> The surveillance program includes surveillance patterns for price and volume movements as well as patterns for potential manipulation (*e.g.*, spoofing and marking the close).

<sup>31</sup> Section 19(g)(1) of the Act, among other things, requires every self-regulatory organization (“SRO”) registered as a national securities exchange or national securities association to comply with the Act, the rules and regulations thereunder, and the SRO’s own rules, and, absent reasonable justification or excuse, enforce compliance by its members and persons associated with its members. See 15 U.S.C. 78q(d)(1) and 17 CFR 240.17d–2. Section 17(d)(1) of the Act allows the Commission to relieve an SRO of certain responsibilities with respect to members of the SRO who are also members of another SRO (“common members”). Specifically, Section 17(d)(1) allows the Commission to relieve an SRO of its responsibilities to: (i) receive regulatory reports from such members; (ii) examine such members for compliance with the Act and the rules and regulations thereunder, and the rules of the SRO; or (iii) carry out other specified regulatory responsibilities with respect to such members.

<sup>32</sup> See Bitcoin ETP Approval Order.

<sup>33</sup> See Bitcoin ETP Approval Order, 89 FR 3010–11.

<sup>34</sup> See Securities Exchange Act Release Nos. 99290 (January 8, 2024), 89 FR 2338, 2343, 2347–2348 (January 12, 2024) (SR–CboeBZX–2023–044) (Notice of Filing of Amendment No. 3 to a Proposed Rule Change to List and Trade Shares of the Fidelity Wise Origin Bitcoin Fund Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares); and 99288 (January 8, 2024), 89 FR 2387, 2392, 2399–2400 (January 12, 2024) (SR–CboeBZX–2023–028) (Notice of Filing of Amendment No. 5 to a Proposed Rule Change To List and Trade Shares of the ARK 21Shares Bitcoin ETF Under BZX Rule 14.11(e)(4), Commodity-Based Trust Shares). See also Securities Exchange Act Release No. 99306 (January 10, 2024), 89 FR 3008, 3009 (January 17, 2024) (SR–NYSEArca–2021–90; SR–NYSEArca–2023–44; SR–NYSEArca–2023–58; SR–NASDAQ–2023–016; SR–NASDAQ–2023–019; SR–CboeBZX–2023–028; SR–CboeBZX–2023–038; SR–CboeBZX–2023–040; SR–CboeBZX–2023–042; SR–CboeBZX–2023–044; and SR–CboeBZX–2023–072) (Order Granting Accelerated Approval of Proposed Rule Changes, as Modified by Amendments Thereto, to List and Trade Bitcoin-Based Commodity-Based Trust Shares and Trust Units) (“Bitcoin ETP Approval Order”).

will provide investors with an opportunity to realize the benefits of utilizing options on a Bitcoin Fund, including cost efficiencies and increased hedging strategies. The Exchange believes that offering Bitcoin Fund options will benefit investors by providing them with a relatively lower-cost risk management tool, which will allow them to manage their positions and associated risk in their portfolios more easily in connection with exposure to the price of Bitcoin and with Bitcoin-related products and positions. Additionally, the Exchange's offering of Bitcoin Fund options will provide investors with the ability to transact in such options in a listed market environment as opposed to in the unregulated OTC options market, which would increase market transparency and enhance the process of price discovery conducted on BOX through increased order flow to the benefit of all investors. The Exchange also notes that BOX already lists options on other commodity-based ETPs,<sup>38</sup> which, as described above, are trusts structured in substantially the same manner as Bitcoin Funds and essentially offer the same objectives and benefits to investors, just with respect to a different commodity (*i.e.*, Bitcoin rather than precious metals) and for which the Exchange has not identified any issues with the continued listing and trading of commodity-backed ETP options it currently lists for trading. The Exchange also believes the proposed rule change will remove impediments to and perfect the mechanism of a free and open market and a national market system, because it is consistent with current Exchange Rules previously filed with the Commission. Options on Bitcoin Funds satisfy the initial listing standards and continued listing standards currently in the Exchange Rules applicable to options on all ETFs and ETPs, including ETPs that hold other commodities already deemed appropriate for options trading on BOX. Additionally, as demonstrated above, each Bitcoin Fund is characterized by a substantial number of shares that are widely held and actively traded. Bitcoin Fund options will trade in the same manner as any other ETF or ETP options—the same Exchange Rules that currently govern the listing and trading of options, including permissible expirations, strike prices, minimum increments, customer accounts, trading halt procedures, and margin requirements, will govern the listing and trading of options on Bitcoin Funds in the same manner. The proposed

position and exercise limit for options on the Bitcoin Funds is 25,000 contracts. These position and exercise limits are the lowest position and exercise limits available in the options industry, are extremely conservative and more than appropriate given the Bitcoin Funds' market capitalization, average daily volume, number of beneficial holders, and high number of outstanding shares. The proposed position and exercise limits are consistent with the Act as they address concerns related to manipulation and protection of investors because the position and exercise limits are extremely conservative and more than appropriate given the Bitcoin Funds are actively traded. The CBOE Approval Order demonstrates that the average position and exercise limits of options on ETFs with comparable outstanding shares and trading volume to those of the Bitcoin Funds are significantly higher than the proposed position and exercise limits for Bitcoin Fund options. Therefore, the proposed position and exercise limits for the Bitcoin Fund options are conservative relative to options on ETFs with comparable market characteristics.

Further, given that the issuer of each Bitcoin Fund may create and redeem shares that represent an interest in Bitcoin, the Exchange believes it is relevant to compare the size of a position limit to the market capitalization of the Bitcoin market. As of August 27, 2024, the global supply of Bitcoin was 19,745,940, and the price of one Bitcoin was approximately \$59,466.82,<sup>39</sup> which equates to a market capitalization of approximately \$1.165 trillion. Consider the proposed position and exercise limit of 25,000 option contracts for each Bitcoin Fund option. A position and exercise limit of 25,000 same side contracts effectively restricts a market participant from holding positions that could result in the receipt of no more than 2,500,000 of Fidelity Fund shares or ARK 21 Fund shares, as applicable (if that market participant exercised all its options. As provided in the CBOE Approval Order, if a market participant with the maximum 25,000 same side contracts in either Fidelity Fund options or ARK 21 Fund options exercised all positions at one time, such an event would have no practical impact on the Bitcoin market.

The Exchange also believes the proposed limits are appropriate given position limits for Bitcoin futures. For example, the Chicago Mercantile Exchange ("CME") imposes a position

limit of 2,000 futures (for the initial spot month) on its Bitcoin futures contract.<sup>40</sup> On August 28, 2024, CME Aug 24 Bitcoin Futures settled at \$58,950. A position of 2,000 CME Bitcoin futures, therefore, would have a notional value of \$589,500,000. As provided in the CBOE Approval Order, the approximate number of option contracts for each Bitcoin Fund that equate to the notional value of CME Bitcoin futures is significantly higher than the proposed limit of 25,000 options contract for each Bitcoin Fund option. The fact that many options ultimately expire out-of-the-money and thus are not exercised for shares of the underlying, while the delta of a Bitcoin Future is 1, further demonstrates how conservative the proposed limits of 25,000 options contracts are for the Bitcoin Fund options.

The Exchange notes, unlike options contracts, CME position limits are calculated on a net futures-equivalent basis by contract and include contracts that aggregate into one or more base contracts according to an aggregation ratio(s).<sup>41</sup> Therefore, if a portfolio includes positions in options on futures, CME would aggregate those positions into the underlying futures contracts in accordance with a table published by CME on a delta equivalent value for the relevant spot month, subsequent spot month, single month and all month position limits.<sup>42</sup> If a position exceeds position limits because of an option assignment, CME permits market participants to liquidate the excess position within one business day without being considered in violation of its rules. Additionally, if at the close of trading, a position that includes options exceeds position limits for futures contracts, when evaluated using the delta factors as of that day's close of trading but does not exceed the limits when evaluated using the previous day's delta factors, then the position shall not constitute a position limit violation. Considering CME's position limits on futures for Bitcoin, the Exchange believes that the proposed same side position limits are more than appropriate for the Bitcoin Fund options.

As provided in the CBOE Approval Order, the proposed position and

<sup>40</sup> See CME Rulebook Chapter 350 (description of CME Bitcoin Futures) and Chapter 5, Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices. Each CME Bitcoin futures contract is valued at five Bitcoins as defined by the CME CF Bitcoin Reference Rate ("BRR"). See CME Rule 35001.

<sup>41</sup> See CME Rulebook Chapter 5, Position Limit, Position Accountability and Reportable Level Table in the Interpretations & Special Notices.

<sup>42</sup> *Id.*

<sup>38</sup> See Rule 5020(h).

<sup>39</sup> See Blockchain.com | Charts—Total Circulating Bitcoin.

exercise limits in this proposal will have no material impact to the supply of Bitcoin. For example, consider again the proposed position limit of 25,000 option contracts for each Bitcoin Fund option. As noted above, a position limit of 25,000 same side contracts effectively restricts a market participant from holding positions that could result in the receipt of no more than 2,500,000 shares of the applicable Bitcoin Fund (if that market participant exercised all of its options).

As provided in the CBOE Approval Order, if 80 market participants had 25,000 same side positions in Fidelity Fund options, each of them would have to simultaneously exercise all of those options to create a scenario that may put the underlying security under stress. Similarly, if 18 market participants had 25,000 same side positions in ARK 21 Fund options, each of them would have to simultaneously exercise all of those options to create a scenario that may put the underlying security under stress. The Exchange believes it is highly unlikely for either such event to occur; however, even if either such event did occur, the Exchange would not expect either Bitcoin Fund to be under stress because such an event would merely induce the creation of more shares through the trust's creation and redemption process.

As of August 7, 2024, the global supply of Bitcoin was approximately 19,736,528.<sup>43</sup> Based on the \$47.88 price of a Fidelity Fund share on August 7, 2024, a market participant could have redeemed one Bitcoin for approximately 1,149 Fidelity Fund shares. Another 22,677,270,672 Fidelity Fund shares could be created before the supply of Bitcoin was exhausted. As a result, 9,070 market participants would have to simultaneously exercise 25,000 same side positions in Fidelity Fund options to receive shares of the Fidelity Fund holding the entire global supply of Bitcoin. Similarly, based on the \$54.68 price of an ARK 21 Fund share on August 7, 2024, a market participant could have redeemed one Bitcoin for approximately 1,006 ARK 21 Fund Shares. Another 19,854,947,168 ARK 21 Fund shares could be created before the supply of Bitcoin were exhausted. As a result, 7,941 market participants would have to simultaneously exercise 25,000 same side positions in ARK 21 Fund options to receive shares of the ARK 21 Fund holding the entire global supply of Bitcoin. Unlike the Bitcoin Funds, the number of shares that corporations may

issue is limited. However, like corporations, which authorize additional shares, repurchase shares, or split their shares, the Bitcoin Funds may create, redeem, or split shares in response to demand. While the supply of Bitcoin is limited to 21,000,000, it is believed that it will take more than 100 years to fully mine the remaining Bitcoin.<sup>44</sup> The supply of Bitcoin is larger than the available supply of most securities.<sup>45</sup> Given the significant unlikelihood of any of these events ever occurring, the Exchange does not believe options on the Bitcoin Funds should be subject to position and exercise limits even lower than those proposed (which are already equal to the lowest available limit for equity options in the industry) to protect the supply of Bitcoin.<sup>46</sup>

The Exchange believes the available supply of Bitcoin is not relevant to the determination of position and exercise limits for options overlying the Bitcoin Funds.<sup>47</sup> Position and exercise limits are not a tool that should be used to address a potential limited supply of an underlying. Position and exercise limits do not limit the total number of options that may be held, but rather they limit the number of positions a single customer may hold or exercise at one time.<sup>48</sup> “Since the inception of

standardized options trading, the options exchanges have had rules imposing limits on the aggregate number of options contracts that a member or customer could hold or exercise.”<sup>49</sup> Position and exercise limit rules are intended “to prevent the establishment of options positions that can be used or might create incentives to manipulate or disrupt the underlying market so as to benefit the options position. In particular, position and exercise limits are designed to minimize the potential for mini-manipulations and for corners or squeezes of the underlying market. In addition, such limits serve to reduce the possibility for disruption of the options market itself, especially in illiquid options classes.”<sup>50</sup>

The Exchange notes that a Registration Statement on Form S–1 was filed with the Commission for each Bitcoin Fund, each of which described the supply of Bitcoin as being limited to 21,000,000 (of which approximately 90% had already been mined), and that the limit would be reached around the year 2140.<sup>51</sup> Each Registration Statement permits an unlimited number of shares of the applicable Bitcoin ETF to be created. Further, the Commission approved proposed rule changes that permitted the listing and trading of shares of each Bitcoin Fund, which approval did not comment on the sufficient supply of Bitcoin or address whether there was a risk that permitting an unlimited number of shares for a Bitcoin Fund would impact the supply of Bitcoin.<sup>52</sup> Therefore, the Exchange believes the Commission had ample time and opportunity to consider whether the supply of Bitcoin was sufficient to permit the creation of unlimited Bitcoin Fund shares, and does not believe considering this supply with respect to the establishment of position and exercise limits is appropriate given its lack of relevance to the purpose of position and exercise limits. However, given the significant size of the Bitcoin supply, the proposed

positions. This would result in 500,000 option contracts outstanding at that time. An increase in the number of investors could cause an increase in outstanding options even if position limits remain unchanged.

<sup>49</sup> See Securities Exchange Act Release No. 39489 (December 24, 1997), 63 FR 276 (January 5, 1998) (SR–CBOE–1997–11).

<sup>50</sup> See *id.*

<sup>51</sup> See Pre-Effective Amendment No. 5 to Form S–1 Registration Statement No. 333–254652, Fidelity Fund, filed January 9, 2024, at 53–54; and Amendment No. 8 to Form S–1 Registration Statement No. 333–257474, ARK 21 Fund, filed January 9, 2024, at 15.

<sup>52</sup> See Bitcoin ETP Approval Order.

<sup>44</sup> See Pre-Effective Amendment No. 5 to Form S–1 Registration Statement No. 333–254652, Fidelity Fund, filed January 9, 2024, at 53–54; and Amendment No. 8 to Form S–1 Registration Statement No. 333–257474, ARK 21 Fund, filed January 9, 2024, at 15.

<sup>45</sup> The market capitalization of Bitcoin would rank in the top 10 among securities. See <https://companiesmarketcap.com/usa/largest-companies-in-the-usa-by-market-cap/>.

<sup>46</sup> This would be even more unlikely with respect to the Bitcoin Funds for which the Exchange proposes lower position limits.

<sup>47</sup> The Exchange is unaware of any proposed rule change related to position and exercise limits for any equity option (including commodity ETF options) for which the Commission required consideration of whether the available supply of an underlying (whether it be a corporate stock or an ETF) or the contents of an ETF (commodity or otherwise) should be considered when an exchange proposed to establish those limits. See, e.g., Securities Exchange Act Release No. 57894 (May 30, 2008), 73 FR 32061 (June 5, 2008) (SR–CBOE–2005–11) (approval order in which the Commission stated that the “listing and trading of Gold Trust Options will be subject to the exchanges’ rules pertaining to position and exercise limits and margin”). For reference, the current position and exercise limits for options on SPDR Gold Shares ETF (“GLD”) and options on iShares Silver Trust (“SLV”) are 250,000 contracts, or 10 times that proposed position and exercise limit for the Bitcoin Fund options.

<sup>48</sup> For example, suppose an option has a position limit of 25,000 option contracts and there are a total of 10 investors trading that option. If all 10 investors max out their positions, that would result in 250,000 option contracts outstanding at that time. However, suppose 10 more investors decide to begin trading that option and also max out their

<sup>43</sup> See Blockchain.com | Charts—Total Circulating Bitcoin (which also shows the price of one Bitcoin equal to \$55,033.47).

position limits are more than sufficient to protect investors and the market.

Based on the above information demonstrating, among other things, that each Bitcoin Fund is characterized by a substantial number of outstanding shares that are actively traded and widely held, the Exchange believes the proposed position and exercise limits are extremely conservative compared to those of ETF options with similar market characteristics. The proposed position and exercise limits reasonably and appropriately balance the liquidity provisioning in the market against the prevention of manipulation. The Exchange believes these proposed limits are effectively designed to prevent an individual customer or entity from establishing options positions that could be used to manipulate the market of the underlying as well as the Bitcoin market.<sup>53</sup>

The Exchange believes the proposed rule change to exclude the Bitcoin Funds from being eligible for trading as FLEX Equity Options is consistent with the Act, because without this prohibition, trading a FLEX Equity Option in the Bitcoin Funds would otherwise establish different position and exercise limits than those proposed herein.<sup>54</sup>

The Exchange represents that it has the necessary systems capacity to support the new Bitcoin Fund options. The Exchange believes that its existing surveillance and reporting safeguards are designed to deter and detect possible manipulative behavior which might arise from listing and trading options, including Bitcoin Fund options. The Exchange's existing surveillance and reporting safeguards are designed to deter and detect possible manipulative behavior which might arise from listing and trading options on ETFs and ETPs, such as (existing) precious metal-commodity backed ETP options as well as the proposed options on Bitcoin Funds. The Exchange believes that its surveillance procedures are adequate to properly monitor the trading of options on Bitcoin Funds and to deter and detect violations of Exchange rules. Additionally, the Exchange is a member of the ISG under the Intermarket Surveillance Group Agreement. The Exchange would be able to obtain information regarding trading in shares

<sup>53</sup> See Securities Exchange Act Release No. 39489 (December 24, 1997), 63 FR 276 (January 5, 1998) (SR-CBOE-1997-11).

<sup>54</sup> The Exchange would be required to submit a separate rule filing to permit the Exchange to authorize for trading FLEX Equity Options on the Bitcoin Funds (which filing may propose changes to existing FLEX Equity Option position limits for such options if appropriate).

of the Bitcoin Funds from BZX and other markets that trade shares of the Bitcoin Funds through ISG. ISG members work together to coordinate surveillance and investigative information sharing in the stock, options, and futures markets. In addition, the Exchange has a Regulatory Services Agreement with FINRA and, as noted herein, pursuant to a multi-party 17d-2 joint plan, all options exchanges allocate regulatory responsibilities to FINRA to conduct certain options-related market surveillances. Further, the Exchange will implement any new surveillance procedures it deems necessary to effectively monitor the trading of options on the Bitcoin Funds. The underlying shares of spot bitcoin ETPs, including the Bitcoin Funds, are also subject to safeguards related to addressing market abuse and manipulation. As the Commission stated in its order approving proposals of several exchanges to list and trade shares of spot bitcoin-based ETPs, “[e]ach Exchange has a comprehensive surveillance-sharing agreement with the CME via their common membership in the Intermarket Surveillance Group. This facilitates the sharing of information that is available to the CME through its surveillance of its markets, including its surveillance of the CME bitcoin futures market.”<sup>55</sup> Given the consistently high correlation between the CME bitcoin futures market and the spot bitcoin market, as confirmed by the Commission through robust correlation analysis, the Commission was able to conclude that such surveillance sharing agreements could reasonably be “expected to assist in surveilling for fraudulent and manipulative acts and practices in the specific context of the [Bitcoin ETPs].”<sup>56</sup> The Exchange believes that existing surveillance procedures are designed to deter and detect possible manipulative behavior which might potentially arise from listing and trading the proposed options on the Bitcoin Funds. Further, the Exchange will implement any new surveillance procedures it deems necessary to effectively monitor the trading of options on Bitcoin ETPs.

<sup>55</sup> See Securities Exchange Act Release No. 99306 (January 10, 2024), 89 FR 3008, 3009 (January 17, 2024) (File Nos. SR-NYSEArca-2021-90; SR-NYSEArca-2023-44; SR-NYSEArca-2023-58; SR-NASDAQ-2023-016; SR-NASDAQ-2023-019; SR-CboeBZX-2023-028; SR-CboeBZX-2023-038; SR-CboeBZX-2023-040; SR-CboeBZX-2023-042; SR-CboeBZX-2023-044; and SR-CboeBZX-2023-072) (Order Granting Accelerated Approval of Proposed Rule Changes, as Modified by Amendments Thereto, to List and Trade Bitcoin-Based Commodity-Based Trust Shares and Trust Units).

<sup>56</sup> See Bitcoin ETP Order, 89 FR at 3010-11.

Finally, the Exchange notes that this proposal will remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, protect investors because applicable Exchange rules will require that customers receive appropriate disclosure before trading options in Bitcoin Funds<sup>57</sup> and will require that brokers opening accounts and recommending options transactions comply with relevant customer suitability standards.<sup>58</sup> The Exchange notes the proposed rule change is substantively the same as a rule change proposed by CBOE which the Commission recently approved.<sup>59</sup>

#### *B. Self-Regulatory Organization's Statement on Burden on Competition*

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. In this regard and as indicated above, the Exchange notes that the rule change is being proposed as a competitive response to a filing submitted by CBOE that was recently approved by the Commission.<sup>60</sup>

**Intramarket Competition:** The Exchange does not believe that the proposed rule change will impose any burden on intramarket competition that is not necessary or appropriate in furtherance of the purposes of the Act as Bitcoin Funds would need to satisfy the initial listing standards set forth in the Exchange Rules in the same manner as any other ETF before the Exchange could list options on them. Additionally, Bitcoin Fund options will be equally available to all market participants who wish to trade such options. The Exchange Rules currently applicable to the listing and trading of options on ETFs on BOX will apply in the same manner to the listing and trading of all options on Bitcoin Funds, including, for example, Rules that govern expirations, exercise prices, minimum increments, margin requirements, customer accounts, and trading halt procedures. Also, and as stated above, the Exchange already lists options on other commodity-based ETPs.<sup>61</sup> Further, the Bitcoin Funds would need to satisfy the maintenance listing standards set forth in the Exchange Rules in the same manner as any other ETF for the Exchange to continue listing options on them.

<sup>57</sup> See Rules 4020(b), (e) and 4100.

<sup>58</sup> See Rule 4040.

<sup>59</sup> See *supra* note 5.

<sup>60</sup> *Id.*

<sup>61</sup> See Rule 5020(h).

Intermarket Competition: The Exchange does not believe that the proposal to list and trade options on Bitcoin Funds will impose any burden on intermarket competition that is not necessary or appropriate in furtherance of the purposes of the Act. To the extent that the advent of Bitcoin Fund options trading on BOX may make BOX a more attractive marketplace to market participants at other exchanges, such market participants are free to elect to become market participants on BOX. As noted herein, this is a competitive filing as the Commission recently approved the listing and trading of the Bitcoin Funds on another options exchange.<sup>62</sup> Additionally, other options exchanges are free to amend their listing rules, as applicable, to permit them to list and trade options on Bitcoin Funds. The Exchange notes that listing and trading Bitcoin Fund options on BOX will subject such options to transparent exchange-based rules as well as price discovery and liquidity, as opposed to alternatively trading such options in the OTC market.

The Exchange believes that the proposed rule change may relieve any burden on, or otherwise promote, competition as it is designed to increase competition for order flow on BOX in a manner that is beneficial to investors by providing them with a lower-cost option to hedge their investment portfolios. The Exchange notes that BOX operates in a highly competitive market in which market participants can readily direct order flow to competing venues that offer similar products. Ultimately, the Exchange believes that offering Bitcoin Fund options for trading on BOX will promote competition by providing investors with an additional, relatively low-cost means to hedge their portfolios and meet their investment needs in connection with Bitcoin prices and Bitcoin-related products and positions on a listed options exchange.

Finally, the proposed rule change to exclude Bitcoin Fund options from being eligible for trading as FLEX Equity Options does not impose an undue burden on competition as no BOX Participant will be able to transact a FLEX Equity Option on the Bitcoin Funds.

*C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

The Exchange neither solicited nor received written comments on the proposed rule change.

**III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

Because the foregoing proposed rule change does not: (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act<sup>63</sup> and Rule 19b-4(f)(6) thereunder.<sup>64</sup>

A proposed rule change filed pursuant to Rule 19b-4(f)(6) under the Act normally does not become operative for 30 days after the date of its filing. However, Rule 19b-4(f)(6)(iii)<sup>65</sup> permits the Commission to designate a shorter time if such action is consistent with the protection of investors and the public interest. The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Commission previously approved the listing of options on the shares of the Bitcoin Funds.<sup>66</sup> The Exchange has provided information regarding the underlying Bitcoin Funds, including, among other things, information regarding trading volume, the number of beneficial holders, and the market capitalization of the Bitcoin Funds. The proposal also establishes position and exercise limits for options on the Bitcoin Funds and provides information regarding the surveillance procedures that will apply to options on the Bitcoin Funds. The Commission believes that waiver of the operative delay could benefit investors by providing an additional venue for trading Bitcoin Fund options. Therefore, the Commission believes that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest. Accordingly, the Commission hereby waives the 30-day operative delay and designates the proposed rule change operative upon filing.<sup>67</sup>

<sup>63</sup> 15 U.S.C. 78s(b)(3)(A).

<sup>64</sup> 17 CFR 240.19b-4(f)(6). In addition, Rule 19b-4(f)(6)(iii) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Commission waives this requirement.

<sup>65</sup> 17 CFR 240.19b-4(f)(6)(iii).

<sup>66</sup> See *supra* note 5.

<sup>67</sup> For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

At any time within 60 days of the filing of such proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act.

**IV. Solicitation of Comments**

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

*Electronic Comments*

- Use the Commission's internet comment form (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include file number SR-BOX-2024-29 on the subject line.

*Paper Comments*

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090.
- All submissions should refer to file number SR-BOX-2024-29. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (<https://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All

<sup>62</sup> See *supra* note 5.



submissions should refer to file number SR–BOX–2024–29 and should be submitted on or before December 24, 2024.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>68</sup>

**Stephanie J. Fouse,**  
Assistant Secretary.

[FR Doc. 2024–28341 Filed 12–2–24; 8:45 am]

**BILLING CODE 8011–01–P**

## SECURITIES AND EXCHANGE COMMISSION

[SEC File No. 270–136, OMB Control No. 3235–0157]

### Submission for OMB Review; Comment Request; Extension: Form N–8F

*Upon Written Request, Copies Available From:* Securities and Exchange Commission, Office of FOIA Services, 100 F Street NE, Washington, DC 20549–2736.

Notice is hereby given that, pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), the Securities and Exchange Commission (the “Commission”) has submitted to the Office of Management and Budget a request for extension of the previously approved collection of information discussed below.

Form N–8F (17 CFR 274.218) is the form prescribed for use by registered investment companies in certain circumstances to request orders of the Commission declaring that the registration of that investment company cease to be in effect. The form requests information about: (i) the investment company’s identity, (ii) the investment company’s distributions, (iii) the investment company’s assets and liabilities, (iv) the events leading to the request to deregister, and (v) the conclusion of the investment company’s business. The information is needed by the Commission to determine whether an order of deregistration is appropriate.

The Form takes approximately 5.2 hours on average to complete. It is estimated that approximately 101 investment companies file Form N–8F annually, so the total annual burden for the form is estimated to be approximately 525 hours. The estimate of average burden hours is made solely for the purposes of the Paperwork Reduction Act and is not derived from a comprehensive or even a representative survey or study. Commission staff continues to believe

that there is no cost burden for completing and filing Form N–8F.

The collection of information on Form N–8F is not mandatory. The information provided on Form N–8F is not kept confidential. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently-valid OMB control number.

The 30-day public comment period for this information collection request opens on December 4, 2024 and closes on January 3, 2025. The public may view the full information request and submit comments at [https://www.reginfo.gov/public/do/PRAViewICR?ref\\_nbr=202408-3235-028](https://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=202408-3235-028) or email comments to [MBX.OMB.OIRA.SEC\\_desk\\_officer@omb.eop.gov](mailto:MBX.OMB.OIRA.SEC_desk_officer@omb.eop.gov).

Dated: November 26, 2024.

**Sherry R. Haywood,**  
Assistant Secretary.

[FR Doc. 2024–28260 Filed 12–2–24; 8:45 am]

**BILLING CODE 8011–01–P**

## SECURITIES AND EXCHANGE COMMISSION

[SEC File No. 270–261, OMB Control No. 3235–0274]

### Proposed Collection; Comment Request; Extension: Rule 17Ad–11

*Upon Written Request, Copies Available From:* Securities and Exchange Commission, Office of FOIA Services, 100 F Street NE, Washington, DC 20549–2736

Notice is hereby given that pursuant to the Paperwork Reduction Act of 1995 (“PRA”) (44 U.S.C. 3501 *et seq.*), the Securities and Exchange Commission (“Commission”) is soliciting comments on the existing collection of information provided for in Rule 17Ad–11 (17 CFR 240.17Ad–11), under the Securities Exchange Act of 1934 (15 U.S.C. 78a *et seq.*). The Commission plans to submit this existing collection of information to the Office of Management and Budget (“OMB”) for extension and approval.

Rule 17Ad–11 requires every registered recordkeeping transfer agent to report certain information to issuers and its appropriate regulatory agency in the event that the aggregate market value of an “aged record difference” exceeds certain thresholds. A “record difference” occurs when the number of shares or principal dollar amount of securities in an issuer’s records do not equal those in the master securityholder file as indicated, for instance, on certificates presented to the transfer agent for purchase, redemption, or

transfer. An “aged record difference” is a record difference that has existed for more than 30 calendar days. In addition, the rule requires every registered recordkeeping transfer agent to report certain information to issuers and its appropriate regulatory agency concerning buy-ins of all issues for which it acts as recordkeeping transfer agent. Further, the rule requires every registered recordkeeping transfer agent to report to its appropriate regulatory agency when it has failed to post certificate detail to the master securityholder file within five business days of the time required by Rule 17Ad–10 (17 CFR 240.17Ad–10). Transfer agents must also maintain a copy of any report required under Rule 17Ad–11 for a period of not less than three years following the date of the report, the first year in an easily accessible place.

Because the information required by Rule 17Ad–11 is already available to transfer agents, any collection burden for small transfer agents is minimal. Based on a review of the number of Rule 17Ad–11 reports the Commission, the Comptroller of the Currency, the Board of Governors of the Federal Reserve System, and the Federal Deposit Insurance Corporation (collectively, the “appropriate regulatory agencies”) received since 2019, the Commission staff estimates that 8 respondents will file a total of approximately 1 report annually. The Commission staff estimates that, on average, each report can be completed in 30 minutes. Therefore, the total annual time burden for the entire transfer agent industry is approximately .5 hours (0.5 hours × 1 report). Assuming an average hourly rate of \$78 for a compliance staff employee at a transfer agent, the average total internal cost of compliance for each report is \$39. The total annual internal cost of compliance for the estimated 8 respondents is thus approximately \$39 (\$39 per report × 1 report).

The retention period for the recordkeeping requirement under Rule 17Ad–11 is not less than three years following the date of a report prepared pursuant to the rule. The recordkeeping requirement under Rule 17Ad–11 is mandatory to assist the Commission and other regulatory agencies in monitoring transfer agents who are not performing their functions promptly and accurately. This rule does not involve the collection of confidential information.

*Written comments are invited on:* (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility;

<sup>68</sup> 17 CFR 200.30–3(a)(12), (59).

(b) the accuracy of the Commission's estimates of the burden of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Consideration will be given to comments and suggestions submitted by February 3, 2025.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information under the PRA unless it displays a currently valid OMB control number.

Please direct your written comments to: Austin Gerig, Director/Chief Data Officer, Securities and Exchange Commission, c/o Tanya Ruttenberg, 100 F Street NE, Washington, DC 20549, or send an email to: [PRA\\_Mailbox@sec.gov](mailto:PRA_Mailbox@sec.gov).

Dated: November 26, 2024.

**Sherry R. Haywood,**

*Assistant Secretary.*

[FR Doc. 2024-28261 Filed 12-2-24; 8:45 am]

BILLING CODE 8011-01-P

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-101764; File Nos. SR-DTC-2024-009; SR-FICC-2024-010; SR-NSCC-2024-006]

### Self-Regulatory Organizations; National Securities Clearing Corporation; The Depository Trust Company; Fixed Income Clearing Corporation; Order Approving Proposed Rule Change To Adopt the Clearing Agency Framework for Certain Requirements on Governance and Conflicts of Interest

November 26, 2024.

#### I. Introduction

On August 15, 2024, National Securities Clearing Corporation ("NSCC"), The Depository Trust Company ("DTC"), and Fixed Income Clearing Corporation ("FICC," each a subsidiary of The Depository Trust & Clearing Corporation ("DTCC") and each a "Clearing Agency," and collectively, the "Clearing Agencies"), filed with the Securities and Exchange Commission ("Commission") proposed rule changes SR-NSCC-2024-006, SR-DTC-2024-009, and SR-FICC-2024-010, respectively, pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act")<sup>1</sup> and Rule 19b-4

thereunder ("Proposed Rule Changes").<sup>2</sup> The Proposed Rule Changes were published for comment in the **Federal Register** on September 3, 2024.<sup>3</sup> The Commission has received no comments on the changes proposed. For the reasons discussed below, the Commission is approving the Proposed Rule Changes.

#### II. Background

On November 16, 2023, the Commission adopted rules under the Act to improve the governance of clearing agencies registered with the Commission ("registered clearing agencies") by reducing the likelihood that conflicts of interest may influence the board of directors or equivalent governing body ("board") of a registered clearing agency.<sup>4</sup> The rules identify certain responsibilities of the Board, increase transparency into board governance, and, more generally, improve the alignment of incentives among owners and participants of a registered clearing agency. The Commission adopted 17 CFR 240.17ad-25 ("Rule 17Ad-25") under the Act to establish these new requirements for board governance and for the management of conflicts of interest by registered clearing agencies.

The Proposed Rule Changes would adopt a new framework entitled the "Clearing Agency Framework for Certain Requirements on Governance and Conflicts of Interest" ("Framework") to outline the way in which the Clearing Agencies and their Boards of Directors ("Boards") comply with certain sections of Rule 17Ad-25,<sup>5</sup> specifically subsections (g), (h), (i), and (j).<sup>6</sup>

#### III. Description of the Proposed Rule Change

##### A. Section 1 and Section 2: Executive Summary and Framework Ownership and Change Management

Section 1 of the Proposed Rule Changes constitutes the executive

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> See Securities Exchange Act Release No. 100841 (Aug. 27, 2024), 89 FR 71646 (Sep. 3, 2024) (File No. SR-NSCC-2024-006) ("NSCC Notice of Filing"); Securities Exchange Act Release No. 100842 (Aug. 27, 2024), 89 FR 71597 (Sep. 3, 2024) (File No. SR-DTC-2024-009) ("DTC Notice of Filing"); Securities Exchange Act Release No. 100843 (Aug. 27, 2024), 89 FR 71593 (Sep. 3, 2024) (File No. SR-FICC-2024-010) ("FICC Notice of Filing").

<sup>4</sup> See Clearing Agency Governance and Conflicts of Interest, Exchange Act Release No. 98959 (Nov. 16, 2023), 88 FR 84454 (Dec. 5, 2023) (S7-21-22).

<sup>5</sup> See NSCC Notice of Filing, 89 FR 71646; DTC Notice of Filing, 89 FR 71598; and FICC Notice of Filing, 89 FR 71594, all at note 3 *supra*.

<sup>6</sup> See 17 CFR 240.17ad-25(g), (h), (i) and (j).

summary. Section 1 states that the Framework provides an outline for the way in which the Clearing Agencies and their Boards comply with the requirements of Rule 17Ad-25(g), (h), (i), and (j). It also states that the Clearing Agencies may develop policies, procedures, and other supplemental documentation to support execution of the Framework, and that, in the event of a conflict between this Framework and such other supplemental documentation, the Framework shall prevail. Section 1 further states that individuals elected to the DTCC Board of Directors are also elected to the Boards of each of the Clearing Agencies, and that the Framework is applicable to the directors of each of the Clearing Agencies and DTCC separately with respect to their role on each Board.

Section 2 of the Proposed Rule Changes covers Framework ownership and change management. The Framework would be owned and managed within the DTCC General Counsel's Office by an officer on behalf of each Clearing Agency. Section 2 states that any changes to the Framework shall be approved by either: (1) the Boards; (2) such Board committees as may be delegated authority by the Boards from time to time pursuant to their charters; or, (3) the General Counsel or Deputy General Counsels of the Clearing Agencies, pursuant to authority delegated by the Boards and with the advice and direction of the Framework owner. Section 2 also states that the Framework would be reviewed and approved annually by the Boards or duly authorized committees of the Boards.

##### B. Section 3: Conflicts of Interest

Section 3 of the Proposed Rules Changes describes how the Clearing Agencies comply with sections (g) and (h) of Rule 17ad-25. Rule 17Ad-25(g) requires each registered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to identify and document, and mitigate or eliminate existing or potential conflicts of interest in the decision-making process of the directors or senior managers of the registered clearing agency.<sup>7</sup> Rule 17ad-25(h) requires each registered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to require a director of a registered clearing agency to document and inform the registered clearing agency promptly of the existence of any relationship or interest that could reasonably affect the

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>7</sup> See 17 CFR 240.17ad-25(g).

independent judgment or decision-making of the director.<sup>8</sup>

The Proposed Rule Changes require directors to exercise their powers in good faith and in the best interests of the Clearing Agencies, rather than their own interests or the interests of another entity or person. The Proposed Rule Changes state that a conflict of interest is present whenever the interests of the Clearing Agencies compete with the interests of a director, the director's employer, or any other party with which a director is associated, or otherwise whenever a director's corporate or personal interests could be viewed as affecting his or her objectivity or independent judgment in fulfilling the director's duties to the Clearing Agencies.

The Proposed Rule Changes state that directors are required to document and inform the Corporate Secretary of the Clearing Agencies promptly of the existence of any relationship or interest that reasonably could affect the independent judgment or decision-making of the director. The Corporate Secretary would then escalate any disclosure to the General Counsel for evaluation. If such disclosure is deemed to be an actual conflict of interest, the General Counsel would notify the Non-Executive Chairman of the Board and discuss how such conflict can be mitigated or eliminated. Upon identification of a conflict of interest, the Non-Executive Chairman, in consultation with the General Counsel, shall determine how such conflict should be addressed on a case-by-case basis. In certain cases, it may be advisable for the director to recuse themselves from any discussion or vote related to the matter. In other cases, where the conflict is limited or indirect, the Non-Executive Chairman, in consultation with the General Counsel, may determine that the conflict should be disclosed to the full Board of Directors, but that, in light of such disclosure to the Board, recusal of the director is unnecessary. The Proposed Rule Changes provide that there may be cases where a conflict is so significant or pervasive that the director would be unable to continue to serve on the Boards. In such instances, the Non-Executive Chairman and General Counsel would discuss with the Governance Committee. Any measures taken to address a conflict of interest would be documented by the Corporate Secretary's Office.

The Proposed Rule Changes state that all staff, including senior managers, must avoid activities or relationships

that might affect objectivity in business decisions throughout employment with the Clearing Agencies. All staff, including senior managers, are required to disclose a relationship or interest that reasonably could affect objectivity in business decisions for review and determination on the appropriate course of action. A course of action for a conflict of interest could include actions such as recusal of the staff member from the particular matter, such as a vendor selection process or disallowing a staff member from being on the board of directors of a Clearing Agency vendor or client. The course of action will be documented.

The Proposed Rule Changes also state that the Clearing Agencies maintain policies and procedures which provide that the Clearing Agencies identify and document existing or potential conflicts of interest in the decision-making process involving directors or senior managers of the Clearing Agencies and mitigate or eliminate and document the mitigation or elimination of such conflicts of interest.<sup>9</sup>

#### *C. Section 4: Management of Risks From Relationships With Service Providers for Core Services*

Section 4 of the Proposed Rule Changes describes how the Clearing Agencies comply with section (i) of Rule 17Ad-25. Rule 17Ad-25(i) requires each registered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to require senior management to manage the risks from relationships with service providers for core services.<sup>10</sup> The Clearing Agencies would identify service providers for core services and would adopt the definition of "service provider for core services" from Rule 17Ad-25(a), which is "any person that, through a written service provider agreement for services provided to or on behalf of the registered clearing agency, on an ongoing basis, directly supports the delivery of clearance or settlement functionality or any other purposes material to the business of the registered clearing agency."<sup>11</sup>

<sup>9</sup> As part of the Proposed Rule Changes, the Clearing Agencies filed certain materials as Exhibit 3: *DTCC Board Charter and Mission Statement*; *DTCC Board Code of Ethics and Conflict of Interest Policy*; *Corporate Secretary's Office Procedures for DTCC Director Conflicts of Interest and Independence Assessment*; *DTCC Risk Management Advisory Council Charter*; and *DTCC Gifts, Entertainment and Conflicts of Interest Policy and Procedures*. Pursuant to 17 CFR 240.24b-2, FICC requested confidential treatment of Exhibit 3.

<sup>10</sup> See 17 CFR 240.17ad-25(i).

<sup>11</sup> See 17 CFR 240.17ad-25(a).

Specifically, senior management would be required to: (1) evaluate and document the risks related to agreements with service providers for core services, including under changes to circumstances and potential disruptions, and whether the risks can be managed in a manner consistent with the Clearing Agencies' risk management framework;<sup>12</sup> and, (2) perform ongoing monitoring of the relationship and report to the Boards for their evaluation of any action taken by senior management to remedy significant deterioration in performance or address changing risks or material issues identified through such monitoring, or if the risk or material issues identified cannot be remedied, senior management would be required to assess and document weaknesses or deficiencies in the relationship with the service provider for core services for submission to the Board.<sup>13</sup> Service providers for core services can be external service providers or internal (*i.e.*, intercompany affiliates such as DTCC or one of its subsidiaries). The Clearing Agencies employ a proportionate and risk-based approach adapted to the distinct characteristics and risks presented by these two different categories of service providers.<sup>14</sup> Regarding internal service providers, deficiencies are assessed as part of the Clearing agencies' risk tolerance framework. Clearing Agencies and their affiliates are all held directly accountable by a common governance arrangement to a set of performance level and risk management standards based upon the Clearing Agencies' requirements.<sup>15</sup> Regarding external service providers, deficiencies are assessed against criteria established by the Third Party Risk Department, who submits deficiency information to the Board or relevant Board committee. Because external service providers are not subject to the same governance arrangements and standards as intercompany affiliates, the Clearing Agencies must use different mechanisms (*e.g.*, negotiating and enforcing express contractual terms) to ensure a comparable degree of risk management and monitoring. Given the difference in accountability mechanisms, the Clearing Agencies rely upon a dedicated third party risk management function to manage and monitor external relationship risks

<sup>12</sup> See NSCC Notice of Filing, 89 FR 71648; DTC Notice of Filing, 89 FR 71599; and FICC Notice of Filing, 89 FR 71595, all at note 3 *supra*.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*

<sup>8</sup> See 17 CFR 240.17ad-25(h)

separately from the internal functions.<sup>16</sup> Business owners of each service provider for core services are responsible for documenting any deficiencies.

The Proposed Rule Changes state that the Boards of the Clearing Agencies would: (1) review and approve the procedures regarding service providers for core services; (2) review and approve any agreement that would establish a relationship with a service providers for core services along with the required risk evaluation prepared by senior management; and, (3) evaluate any action taken by senior management to remedy significant deterioration in performance or address changing risks or material issues identified through senior management's monitoring of service providers for core services.<sup>17</sup>

The Proposed Rule Changes also state that the Clearing Agencies currently maintain policies and procedures that manage risks related to service providers for core services.<sup>18</sup>

*D. Section 5: Solicitation of Stakeholder Viewpoints on Material Developments in Risk Management and Operations*

Rule 17Ad–25(j) requires each registered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to require the board of directors to solicit, consider, and document its consideration of the views of participants and other relevant stakeholders of the registered clearing agency on material developments in its governance and operations on a recurring basis.<sup>19</sup> Section 5 of the Proposed Rule Changes states that in support of their compliance with Rule 17Ad–25(j), the Clearing Agencies have established various advisory councils (“Advisory Councils”) made up of representatives of the Clearing Agencies’ participants and other relevant stakeholders. In order to ensure appropriate stakeholders are consulted for different types of material developments at the Clearing Agencies, the Clearing Agencies have established a joint Advisory Council to consider material developments in risk management across the Clearing Agencies and separate business-line specific Advisory Councils to consider

material developments in operations. The Clearing Agencies may also use other mechanisms, such as ad hoc group meetings of Clearing Agency participants and other relevant stakeholders, to assist the Boards of the Clearing Agencies in meeting their obligations under Rule 17Ad–25(j).

The Proposed Rule Changes state further that the Advisory Councils and the ad hoc mechanisms assist the Boards of the Clearing Agencies in their obligation to solicit, consider, and document their consideration of the views of participants and other relevant stakeholders of the Clearing Agencies regarding material developments in their respective risk management and operations on a recurring basis. Senior management of the Clearing Agencies would bring material developments in the Clearing Agencies’ risk management and operations to the Advisory Councils (or ad hoc mechanisms) for their consideration. Senior management would document the views of the participating stakeholders on such developments. Senior management would then escalate the views on material developments in the Clearing Agencies risk management and operations to the Boards for their consideration. The Boards will consider and document their consideration of the views of Clearing Agency participants and other relevant stakeholders regarding material developments in the Clearing Agencies’ risk management and operations that are escalated by senior management via the Advisory Councils or other appropriate means.<sup>20</sup>

The Proposed Rule Changes also define “material developments” as including developments that would significantly affect the risk and/or operational profile of a Clearing Agency and/or would significantly affect the rights and obligations of relevant stakeholders. Providing information on such material developments enables stakeholders to identify and evaluate the risk, fees and other significant costs they incur by participating or otherwise interacting with a Clearing Agency. “Material developments” in the Clearing Agencies’ risk management and operations would cover areas such as financial risk management, margin methodologies, cyber and operational resiliency, default management, fee structures, the introduction of new cleared products and services, access models, and the design and functioning of the processes and technology systems that support the infrastructure of the

Clearing Agencies and the way that participants and other relevant stakeholders connect to such systems.<sup>21</sup>

**IV. Discussion and Commission Findings**

Section 19(b)(2)(C) of the Act<sup>22</sup> directs the Commission to approve a proposed rule change of a self-regulatory organization if it finds that such proposed rule change is consistent with the requirements of the Act and rules and regulations thereunder applicable to such organization. After carefully considering the Proposed Rule Changes, the Commission finds that the Proposed Rule Changes are consistent with the requirements of the Act and the rules and regulations thereunder applicable to the Clearing Agencies. In particular, the Commission finds that the Proposed Rule Changes are consistent with Section 17A(b)(3)(F)<sup>23</sup> of the Act and Rules 17ad–25(g), (h), (i), and (j),<sup>24</sup> each promulgated under the Act.

*A. Consistency With Sections 17A(b)(3)(A) and (F) of the Act*

Section 17A(b)(3)(A) of the Act<sup>25</sup> requires, among other things, that the Clearing Agencies be so organized and have the capacity to be able to comply with the provisions of the Act and the rules and regulations thereunder. Section 17A(b)(3)(F) of the Act<sup>26</sup> requires, among other things, that the Clearing Agencies’ rules must be designed to promote the prompt and accurate clearance and settlement of securities transactions, and to foster cooperation and coordination with persons engaged in the clearance and settlement of securities transactions. Based on review of the record, and for the reasons discussed below,<sup>27</sup> the Proposed Rule Changes are consistent with the Clearing Agencies being so organized and having the capacity to comply with the Act and the rules and regulations thereunder, and the Proposed Rule Changes are designed to promote the prompt and accurate clearance and settlement of securities transactions and to foster cooperation and coordination with persons engaged

<sup>21</sup> As part of the Proposed Rule Changes, the Clearing Agencies filed certain materials as Exhibit 3: *DTC Asset Services Advisory Council Charter*; *FICC Advisory Council Charter*; *NSCC and DTC Clearance and Settlement Advisory Council Charter*; and *Risk Management Advisory Council Charter*. Pursuant to 17 CFR 240.24b–2, FICC requested confidential treatment of Exhibit 3.

<sup>22</sup> 15 U.S.C. 78s(b)(2)(C).

<sup>23</sup> 15 U.S.C. 78q–1(b)(3)(F).

<sup>24</sup> 17 CFR 240.17ad–22(e)(18)(iv)(C).

<sup>25</sup> 15 U.S.C. 78q–1(b)(3)(A).

<sup>26</sup> 15 U.S.C. 78q–1(b)(3)(F).

<sup>27</sup> See Sections IV.B, C, and D *infra*.

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

<sup>18</sup> As part of the Proposed Rule Changes, the Clearing Agencies filed certain materials as Exhibit 3: Excerpts from *DTCC Risk Tolerance Procedures: Intercompany Agreement Review and Storage Procedure*; and Excerpts from *DTCC Third Party Risk Policy and Procedures*. Pursuant to 17 CFR 240.24b–2, FICC requested confidential treatment of Exhibit 3.

<sup>19</sup> See 17 CFR 240.17ad–25(j).

<sup>20</sup> See NSCC Notice of Filing, 89 FR 71648; DTC Notice of Filing, 89 FR 71599; and FICC Notice of Filing, 89 FR 71595, all at note 3 *supra*.

in the clearance and settlement of securities transactions. Accordingly, the Proposed Rule Changes are consistent with Section 17A(b)(3)(A) and (F) of the Act.

*B. Consistency With Rule 17Ad-25(g) and (h) Under the Act*

Rule 17Ad-25(g) requires each registered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to identify and document, and mitigate or eliminate existing or potential conflicts of interest in the decision-making process of the directors or senior managers of the registered clearing agency. Also, Rule 17Ad-25(h) requires each registered clearing agency to establish, implement, maintain, and enforce written policies and procedures reasonably designed to require a director to document and inform the registered clearing agency promptly of the existence of any relationship or interest that reasonably could affect the independent judgment or decision-making of the director.

As described above, the Proposed Rule Changes outline the written policies and procedures that provide that the Clearing agencies identify, document, and mitigate or eliminate existing or potential conflicts of interest in the decision-making process involving directors or senior managers. The Proposed Rule Changes require directors to document and inform the Corporate Secretary promptly of any relationship or interest that reasonably could affect the independent judgment or decision-making of the director. This is then escalated to the General Counsel's office who shall notify the Non-Executive Chairman if it is determined that a conflict exists. These conflicts may be addressed in several pre-established ways. Based on the foregoing, the proposed changes are consistent with the requirements of Rules 17ad-25(g) and (h).

*C. Consistency With Rule 17Ad-25(i) Under the Act*

Rule 17Ad-25(i) requires each registered clearing agency to establish, implement, maintain, and enforce written policies and procedures reasonably designed to require senior management to: (1) evaluate and document the risks related to an agreement with a service provider for core services, including under changes to circumstances and potential disruptions, and whether the risks can be managed in a manner consistent with the clearing agency's risk management framework; (2) submit to the board for review and approval any agreement that

would establish a relationship with a service provider for core services; (3) be responsible for establishing the policies and procedures that govern relationships and manage risks related to such agreements with service providers for core services and require the board of directors to be responsible for reviewing and approving such policies and procedures; and (4) perform ongoing monitoring of the relationship, and report to the board of directors for its evaluation of any action taken by senior management to remedy significant deterioration in performance or address changing risks or material issues identified through such monitoring; or if the risks or issues cannot be remedied, require senior management to assess and document weaknesses or deficiencies in the relationship with the service provider for submission to the board of directors.<sup>28</sup> As described above in Section III.C, the Proposed Rule Changes require senior management to evaluate and document risks related to agreements with services providers for core services, perform ongoing monitoring of the relationship, and report to the Boards for their evaluation of any action taken by senior management to remedy significant deterioration in performance or address changing risks or material issues identified through such monitoring, consistent with Rule 17Ad-25(i)(1) and (4). The Proposed Rule Changes also state that the Boards would review and approve the procedures regarding, and any agreements that establish a relationship with, service providers for core services, consistent with Rule 17Ad-25(i)(2) and (3). The Proposed Rule Changes further state that if the risk or material issues identified cannot be remedied, senior management is required to assess and document weaknesses or deficiencies in the relationship with the service provider for core services for submission to the Board for evaluation, consistent with Rule 17Ad-25(i)(4). Based on the foregoing, the proposed changes are consistent with the requirements of Rule 17Ad-25(i).

*D. Consistency With Rule 17Ad-25(j) Under the Act*

Rule 17Ad-25(j) requires registered clearing agencies to establish, implement, maintain, and enforce written policies and procedures reasonably designed to require the board of directors to solicit, consider, and document its consideration of the views of participants and other relevant

stakeholders of the registered clearing agency regarding material developments in its risk management and operations on a recurring basis. The Proposed Rule Changes require a formal and regular process for solicitation, consideration, and documenting the consideration of participants and other relevant stakeholders. Based on the foregoing, the proposed changes are consistent with the requirements of Rules 17ad-25(j).

Accordingly, the Commission finds these proposed changes consistent with the requirements of Rule 17Ad-25.<sup>29</sup>

**V. Conclusion**

On the basis of the foregoing, the Commission finds that the Proposed Rule Changes are consistent with the requirements of the Act and in particular with the requirements of and in particular, Section 17A(b)(3)(A) and (F) of the Act<sup>30</sup> and Rule 17Ad-25 thereunder.<sup>31</sup>

*It is therefore ordered*, pursuant to Section 19(b)(2) of the Act<sup>32</sup> that proposed rule changes SR-NSCC-2024-006, SR-DTC-2024-009, and SR-FICC-2024-010 be, and hereby are, *approved*.<sup>33</sup>

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>34</sup>

**Sherry R. Haywood**,  
*Assistant Secretary*.

[FR Doc. 2024-28256 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

**SECURITIES AND EXCHANGE COMMISSION**

[Release No. 34-101774; File No. SR-C2-2024-021]

**Self-Regulatory Organizations; Cboe C2 Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Adopt New Functionality Relating to the Processing of Auction Responses**

November 27, 2024.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the "Act"),<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on November 18, 2024, Cboe C2 Exchange, Inc. (the "Exchange" or "C2") filed with the

<sup>29</sup> 17 CFR 240.17ad-25.

<sup>30</sup> 15 U.S.C. 78q-1(b)(3)(A).

<sup>31</sup> 17 CFR 240.17ad-25.

<sup>32</sup> 15 U.S.C. 78s(b)(2).

<sup>33</sup> In approving the Proposed Rule Changes, the Commission considered its impact on efficiency, competition, and capital formation. 15 U.S.C. 78c(f).

<sup>34</sup> 17 CFR 200.30-3(a)(12).

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>28</sup> 17 CFR 240.17ad-25(i).

Securities and Exchange Commission (the “Commission”) the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Exchange filed the proposal as a “non-controversial” proposed rule change pursuant to Section 19(b)(3)(A)(iii) of the Act<sup>3</sup> and Rule 19b-4(f)(6) thereunder.<sup>4</sup> The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

### I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

Cboe C2 Exchange, Inc. (the “Exchange” or “C2”) proposes to adopt new functionality relating to the processing of auction responses. The text of the proposed rule change is provided in Exhibit 5.

The text of the proposed rule change is also available on the Exchange’s website ([https://markets.cboe.com/us/options/regulation/rule\\_filings/ctwo/](https://markets.cboe.com/us/options/regulation/rule_filings/ctwo/)), at the Exchange’s Office of the Secretary, and at the Commission’s Public Reference Room.

### II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

#### A. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

##### 1. Purpose

The Exchange currently offers an auction mechanism which provides price improvement opportunities for eligible orders. Particularly, the Exchange offers the Complex Order Auction (“COA”).<sup>5</sup> The Exchange notes that eligible orders (“auctioned order”) are electronically exposed for an Exchange-determined period (referred to herein as “auction response period”) in accordance with the applicable Exchange Rule, during which time Users may submit responses (referred to

herein as “auction responses” or “auction response messages”) to an auction message. An auction response may only execute in the auction and is cancelled if it does not execute during an auction. If an auction response is unable to be processed by the System during the auction response period, that auction response is unable to receive any execution opportunity or provide liquidity (and possible price improvement) on the Exchange.<sup>6</sup>

By way of further background, Trading Permit Holders (“TPHs”) may submit auction responses via logical port connectivity.<sup>7</sup> Each logical port corresponds to a single running order handler application.<sup>8</sup> Each order handler application processes the messages it receives from the connected TPH. This processing includes determining whether the message contains the required information to enter the System and where to send that message within the System (*i.e.*, to which matching engine). Messages are sent from an order handler application to a matching engine via User Datagram Protocol (“UDP”). The Exchange has multiple matching engines, each of which controls the book for one or more classes of options listed for trading on the Exchange. The Exchange may run multiple matching engine applications on a single server. Once at a matching engine, the message is received at a server Network Interface Card (“NIC”), which timestamps each message upon arrival and places it in a queue. Currently, each matching engine processes all messages it receives from a single queue from the NIC and prioritizes the processing of all message traffic, including auction responses, in the order in which the NIC received each message (*i.e.*, in time priority).

Auction response messages historically have waited in the same queue as all other order and quote message traffic. As such, if an auction response is submitted at a time where

there is a deep queue of other message traffic such as mass cancellation messages or other orders and quotes, it is possible that the auction response may not be “processed” by the System in sufficient time (*i.e.*, prior to the end of the auction response period).<sup>9</sup> Particularly, the queued auction response may not be able to participate in the applicable auction mechanism because the System had unprocessed (queued) messages at the time of the auction execution despite the fact that the User submitted the auction response prior to the end of the auction response period. Auctioned orders may therefore be missing out on potential price improvement that may have otherwise resulted if queued timely auction response(s) were able to participate in the auction.

The Exchange proposes to adopt new functionality under Rule 5.25, new subparagraph (c), which would apply to the Exchange’s auction mechanism (*i.e.*, COA) to increase the likelihood that timely submitted auction responses may participate in the auction, even during periods of high message traffic. Under the proposed functionality, at the time an auction response period ends, the System will continue to process its inbound queue for any messages that were received by the System before the end of the auction period (including auction messages) for up to an Exchange-determined period of time, not to exceed 100 milliseconds (which the Exchange may determine on a class-by-class basis which would apply to all auction mechanisms and which would be announced with reasonable advanced notice via Exchange Notice). That is, any auction responses that were in the queue before the conclusion of the auction (as identified by the NIC timestamp on the message) would be processed as long as the Exchange-determined time on a class-by-class basis (not to exceed 100 milliseconds) is not exceeded. Only auction messages received prior to the execution of the applicable auction are eligible to be processed for that auction. The applicable auction will execute once all messages, including auction responses, received before the end time of the auction response period have been processed or the Exchange-determined

<sup>6</sup> The Exchange notes that its review of auction responses during August 2024 indicated that approximately 0.19% of auction responses had no opportunity to execute in their respective auctions, notwithstanding being submitted within the auction response period.

<sup>7</sup> A User connects to the Exchange using a logical port available through an API, such as the industry-standard FIX or BOE protocol. Logical ports represent a technical port established by the Exchange within the Exchange’s trading system for the delivery and/or receipt of trading messages, including orders, cancels, and auction responses.

<sup>8</sup> The Exchange has numerous order handlers and uses an algorithm to determine at random which ports connect to which order handlers. This algorithm attempts to spread out a single TPH’s ports across order handlers as well as balance the number of ports that connect to a single order handler.

<sup>9</sup> For example, it currently takes the Exchange’s system an approximate average of 13 microseconds to process a single order/quote or auction response message and, on average, approximately 35 microseconds to process a mass cancel message. As such, under the current system, an auction response that is entered after a mass cancel message is more likely to be detrimentally delayed as compared to a mass cancel message that is entered after an auction response (*i.e.*, a 35 microsecond “wait time” versus a 13 microsecond “wait time”).

<sup>3</sup> 15 U.S.C. 78s(b)(3)(A)(iii).

<sup>4</sup> 17 CFR 240.19b-4(f)(6).

<sup>5</sup> See Rule 5.33(d).

maximum time limit of up to 100 milliseconds has elapsed, whichever occurs first. This continuation of processing the queue for an additional amount of time for messages that were received before the end of the auction allows for auction responses that would otherwise have been canceled due to the conclusion of the auction response period to still have an opportunity to participate in the auction. This provides such responses with increased opportunities to participate in the auction, even during periods of high message traffic, thereby potentially providing customers with additional opportunities for price improvement, while still providing a processing cut off time to ensure auction executions aren't unduly delayed.

By way of an example, if an auction with an auction response period set to 100 milliseconds were to start at 9:00:00 a.m., only auction responses that were able to be processed by the System by the conclusion of the auction at 9:00:100 would participate in the auction. Accordingly, if, for example, an auction response that was submitted at 9:00:090 (within the auction time response period), is still in the message queue at 9:00:100, that response under the current System functionality would be canceled and not eligible to participate in the auction. Under the proposal, at 9:00:100, because the System continues to process all messages timestamped before 9:00:100, that same auction response submitted at 9:00:090 would not automatically be canceled but rather included in the auction as long as it was able to be processed within an additional 50 milliseconds, which is the additional processing time set by the Exchange and announced to market participants with reasonable advance notice via Exchange Notice for that class in this example. Once that auction response is up for processing (because the System processes messages sequentially in time order sequence), the response will be able to participate in the auction so long as it's processed by 9:00:150, notwithstanding such processing would occur after the 100-millisecond auction response period has concluded. Any auction responses for the pending auction that are still pending after the execution of the auction would be canceled.<sup>10</sup> The Exchange notes that using the same example, if an auction response was submitted at 9:00:120, it would not be

eligible for processing because the timestamp would identify it as being submitted outside the auction response period which was otherwise set to conclude at 9:00:100.

The Exchange believes the proposed rule change will result in increased execution opportunities for liquidity providers that submit auction responses and enhance the potential for price improvement for orders submitted to COA to the benefit of investors and public interest. Indeed, the Exchange believes the proposed functionality will increase the possibility that timely submitted auction responses are processed by the Exchange and have an opportunity for execution in the Exchange's auction mechanism, even if there is a deep pending message queue. The Exchange believes the proposed maximum amount of additional time for processing (*i.e.*, 100 milliseconds) is both an adequate amount of time to provide pending auction responses with such execution opportunity, but also an amount minimal enough that impact to other message traffic, if any, would be de minimis. The Exchange also notes that it previously discussed the proposed maximum amount with market participants who indicated that 100 milliseconds was acceptable to them. The Exchange anticipates that in the vast majority of cases, the additional time needed after the conclusion of auction response period, if any, to process all pending auction responses will be shorter than the maximum 100 milliseconds. To the extent the Exchange determines a lesser amount of time would be sufficient, the Exchange could implement an additional amount of time for processing auction responses that is less than 100 milliseconds, which time would be announced with reasonable advance notice to market participants via Exchange Notice. Additionally, all message traffic (including auction responses) will continue to be processed in time-priority.

The Exchange also believes the proposal will continue to allow the Exchange to set the auction response period to an amount of time that provides TPHs submitting responses with sufficient time to respond to, compete for, and provide price improvement for orders, but also continues to provide auctioned orders with quick executions that may reduce market and execution risk. Further, the Exchange believes some market participants choose to submit auction responses towards the end of an auction response period to better ensure the response is at a price that the market participant is willing to trade given the

market at the time the auction response period concludes. As such, merely extending the auction response period in each auction would not itself prevent auction responses from continuing to miss the auction notwithstanding being timely submitted.

Moreover, the Exchange notes that it recently adopted the same functionality on its affiliated exchanges, Cboe Exchange, Inc ("Cboe Options") and Cboe EDGX Exchange, Inc. ("EDGX Options").<sup>11</sup>

## Implementation

The Exchange will announce via Exchange Notice the implementation date of implement the proposed rule change, which shall be no later than 60 days after the operative date of this rule filing.

## 2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the "Act") and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.<sup>12</sup> Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)<sup>13</sup> requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)<sup>14</sup> requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

In particular, the Exchange believes modifying its System to allow it to potentially process more, if not all, timely submitted auction responses may provide further opportunities for auctioned orders to receive price

<sup>11</sup> See Securities Exchange Act Release No. 97738 (June 15, 2023) 88 FR 40878 (June 22, 2023) (SR-CBOE-2022-051) (Order Granting Accelerated Approval of Proposed Rule Change as Modified by Amendment Nos. 1 and 2 Relating to the Processing of Auction Responses). See also Securities Exchange Act Release No. 101434 (October 25, 2024) 89 FR 86856 (October 31, 2024) (SR-CboeEDGX-2024-067).

<sup>12</sup> 15 U.S.C. 78f(b).

<sup>13</sup> 15 U.S.C. 78f(b)(5).

<sup>14</sup> *Id.*

<sup>10</sup> If, for example, the System processed all messages received before 9:00:100 by 9:00:110, then the auction would execute at 9:00:110 (*i.e.*, the System does not need to wait until 9:00:150 to execute an auction if all messages submitted prior to the end time of the auction have been processed).



improvement, which removes impediments to a free and open market and ultimately protects and benefits investors. In particular, the proposed rule change will continue to provide investors with timely processing of their options quote and order messages, while providing investors who submit auction orders with additional auction liquidity. Indeed, the proposed rule change may allow more investors additional opportunities to receive price improvement through an auction mechanism. Additionally, because the proposed functionality may provide liquidity providers that submit auction responses with additional execution opportunities in auctions, the Exchange believes they may be further encouraged to submit more auction responses, which may contribute to a deeper, more liquid auction process that provides investors with additional price improvement opportunities.

The Exchange believes the proposed rule change will result in increased execution opportunities for liquidity providers that submit auction responses and enhance the potential for price improvement for orders submitted to each mechanism to the benefit of investors and public interest. As described above, the Exchange believes the proposed functionality will increase the possibility that timely submitted auction responses are processed by the Exchange and have an opportunity for execution in the Exchange's auction mechanism, even if there is a deep pending message queue. The Exchange believes the proposed maximum amount of additional time for processing (*i.e.*, 100 milliseconds) is both an adequate amount of time to provide pending auction responses with such execution opportunity, but also an amount minimal enough that impact to other message traffic, if any, would be de minimis. The Exchange also discussed the proposed maximum amount of time with market participants who indicated that 100 milliseconds was acceptable to them. As represented above, the Exchange anticipates that in the vast majority of cases, the additional time needed after the conclusion of auction response period, if any, to process all pending auction responses will be shorter than the maximum 100 milliseconds. To the extent the Exchange determines a lesser amount of time would be sufficient, the Exchange could implement an additional amount of time for processing auction responses that is less than 100 milliseconds, which time would be announced with reasonable advance notice to market participants via Exchange Notice.

Additionally, all message traffic (including auction responses) will continue to be processed in time-priority.

While the Exchange may increase the length of the auction response period to accommodate more auction responses, the Exchange believes the proposed functionality better addresses the issue of missed auction responses. Particularly, the Exchange believes the proposed rule change will accommodate more auction responses while also mitigating market risk that may accompany a longer auction period by setting the length of an auction response period to a timeframe that allows an adequate amount of time for TPHs to respond to an auction message and provides the auctioned order with fast executions. Additionally, the Exchange believes TPHs may wait until the end of an auction response period regardless of how long the Exchange sets it to in order to ensure they are comfortable with the price the response may execute at the conclusion of such auction. As such, extending the auction response period in each auction would not itself prevent auction responses from continuing to miss the auction notwithstanding being timely submitted.

The Exchange believes adopting the proposed functionality for auction responses would also better provide customers with additional opportunities for price improvements with little to no impact to non-auction response message traffic. Currently, auction responses account for an incredibly small fraction of message traffic submitted to the Exchange. Indeed, based on the Exchange's analysis in August 2024, auction response messages accounted for a mere 0.07% of all message traffic submitted to the Exchange. The Exchange believe the processing of such a small amount of message traffic, even after the conclusion of an auction response period, would therefore have de minimis, if any, impact on the processing of non-auction response messages waiting in the queue. The Exchange also notes that all messages are currently processed one at a time by the System. Therefore, the System still needs to "process" all pending auction responses, regardless of whether that processing involves canceling the pending auction response because it wasn't processed in time to participate in the auction or actually processing the response to participate in the auction. Either way, the non-auction response messages will still have to wait for processing of any pending responses ahead of it. Conversely, the current system may cause investors to miss out

on opportunities to receive price improvement through the Exchange's auction mechanism as the System is configured to cancel pending auction responses that "miss" the auction execution, even if such responses were timely submitted but not processed due to the System being otherwise occupied processing messages in queue ahead of it. The Exchange therefore believes its proposal will make it more likely that the System processes timely submitted auction responses and includes them in its auction mechanism, thus providing them with more opportunities to execute against auctioned orders, even during periods of high message traffic.

The Exchange believes the proposed rule change is not designed to permit unfair discrimination between market participants as all market participants are allowed to submit auction responses. Additionally, the Exchange believes it's reasonable to adopt the proposed functionality for auction responses as compared to other messages because auction responses are submitted only for the purpose of executing (and possibly providing price improvement) in auctions with short durations, whereas other messages are generally submitted to rest in or execute against the book (and generally not used to submit liquidity into auctions). As discussed above, the Exchange believes the benefits that result from the adoption of the proposed functionality for auction responses would outweigh any potential negative impact to other message traffic, including customer orders, which have an incredibly low chance of being affected by the proposed change as discussed above and which continue to receive priority allocation in any event.

#### *B. Self-Regulatory Organization's Statement on Burden on Competition*

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange does not believe that the proposed changes will impose any burden on intra-market competition that is not necessary or appropriate in furtherance of the purposes of the Act, as the proposed rule change would apply equally to all TPHs that submit auction responses. As noted above, all market participants are able to submit auction responses. Additionally, the Exchange believes the adoption of the proposed functionality for auction responses would have little to no impact on non-auction response message traffic. As discussed, auction response messages account for an incredibly

small fraction of message traffic submitted to the Exchange. The Exchange therefore believes the processing of such a small amount of message traffic by using the functionality would have a de minimis, if any, impact on the processing of non-auction response messages. Moreover, the Exchange believes it's reasonable to adopt the proposed functionality for auction responses as compared to other messages because auction responses are submitted only for the purpose of executing (and possibly providing price improvement) in auctions with short durations, whereas other messages are generally submitted to rest in or execute against the book (and generally not used to submit liquidity into auctions). Lastly, the Exchange does not believe the proposed rule change will impose any burden on inter-market competition that is not necessary or appropriate in furtherance of the purposes of the Act, as the proposed change affects how the System processes auction responses that may only participate in auctions that occur on the Exchange.

*C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

The Exchange neither solicited nor received comments on the proposed rule change.

**III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

The Exchange designates that the proposed rule change effects a change that (i) does not significantly affect the protection of investors or the public interest; (ii) does not impose any significant burden on competition; and (iii) by its terms, does not become operative for 30 days after the date of the filing, or such shorter time as the Commission may designate if consistent with the protection of investors and the public interest. Additionally, the Exchange has given the Commission written notice of its intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission.

As described above, the Exchange has observed a number of auction responses missing opportunities to execute auctions, notwithstanding being timely submitted within the auction response period. The Exchange believes adopting the proposed functionality for auction responses would better provide market participants with additional

opportunities for price improvements with very little, if any, impact to non-auction response message traffic, thereby removing impediments to a free and open market and ultimately protecting and benefiting investors. Additionally, because the proposed functionality may provide liquidity providers that submit auction responses with additional execution opportunities in auctions, the Exchange believes they may be further encouraged to submit more auction responses, which may contribute to a deeper, more liquid auction process that provides investors with additional price improvement opportunities.

The Exchange also believes the proposed rule change does not impose any significant burden on competition, as the proposed functionality would apply equally to all TPHs that submit auction responses and as the proposed change only affects how the Exchange's System processes auction responses that participate in auctions that occur only on the Exchange.

Finally, the Exchange does not believe the proposed functionality raises any novel legal or regulatory issues as the Exchange's affiliate Cboe Options currently maintains the same timestamping functionality, which was reviewed and approved by the Commission prior to its implementation and the same functionality was recently adopted on the Exchange's affiliate and EDGX Options, which was also reviewed by the Commission.<sup>15</sup>

For the foregoing reasons, this rule filing qualifies as a "non-controversial" rule change under Rule 19b-4(f)(6), which renders the proposed rule change effective upon filing with the Commission. At any time within 60 days of the filing of this proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission will institute proceedings to determine whether the proposed rule change should be approved or disapproved. The Exchange respectfully requests that the Commission waive the 30-day operative delay period after which a proposed rule change under Rule 19b-4(f)(6) becomes effective. The Exchange believes waiver of the operative delay will benefit investors because it will permit the proposed rule change to be operative as soon as practicable. As previously noted, the

Exchange's affiliate, Cboe Options recently received Commission approval of a substantively identical functionality and the Exchange's affiliate EDGX Options also recently adopted the same functionality.<sup>16</sup> Moreover, no comments to either of those filings were submitted during the respective public comment periods. Therefore, given that the Commission has noticed for public comment substantively identical filings and received no comments to such filings, the Exchange believes an operative delay is not necessary for this filing. Additionally, waiver of the operative delay will permit the Exchange to implement the proposed functionality as soon as possible, which will benefit investors as the System will potentially process more, if not all, timely submitted auction responses, thereby provide further opportunities for auctioned orders to receive price improvement, which removes impediments to a free and open market and ultimately protects and benefits investors.

**IV. Solicitation of Comments**

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

*Electronic Comments*

- Use the Commission's internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include file number SR-C2-2024-021 on the subject line.

*Paper Comments*

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090.
- All submissions should refer to file number SR-C2-2024-021. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the

<sup>15</sup> Supra note 11.

<sup>16</sup> Supra note 11.

Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-C2-2024-021 and should be submitted on or before December 24, 2024.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>17</sup>

**Stephanie J. Fouse,**

*Assistant Secretary.*

[FR Doc. 2024-28342 Filed 12-2-24; 8:45 am]

BILLING CODE 8011-01-P

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-101765; File No. SR-ISE-2024-55]

### Self-Regulatory Organizations; Nasdaq ISE, LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend FLEX Options Listing

November 26, 2024.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act"),<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on November 25, 2024, Nasdaq ISE LLC ("ISE" or "Exchange") filed with the Securities and Exchange Commission ("Commission") the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

#### I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange [sic] to amend Options 3A, Section 3, FLEX Options Listings.

The text of the proposed rule change is available on the Exchange's website at <https://listingcenter.nasdaq.com/rulebook/ise/rules>, at the principal office of the Exchange, and at the Commission's Public Reference Room.

#### II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

##### A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

###### 1. Purpose

The Exchange proposes to amend Options 3A, Section 3, FLEX Options Listings, to reflect the addition of the listing of options on: (1) the Fidelity Wise Origin Bitcoin Fund; (2) the ARK21Shares Bitcoin ETF; (3) the Grayscale Bitcoin Trust (BTC); (4) the Grayscale Bitcoin Mini Trust BTC; (5) and the Bitwise Bitcoin ETF (collectively "Bitcoin Trusts"). Specifically, ISE proposes to except FLEX Options on the Bitcoin Trusts from trading as a [sic] FLEX Options contracts. ISE separately filed a rule proposal to list and trade the options on the Bitcoin Trusts.<sup>3</sup>

ISE recently received approval to list and trade Flexible Exchange Options ("FLEX Options") on the Exchange's electronic market.<sup>4</sup> At this time, the Exchange proposes to amend Options 3A, Section 3, FLEX Options Listings, to specify that ISE will not authorize for trading a FLEX Option on each of the Bitcoin Trusts. For clarity, this exclusion will apply to both physically-settled and cash-settled FLEX ETF options, such that options on the Bitcoin Trusts will be excluded from being eligible to trade as a physically-settled or a cash-settled FLEX ETF option. Options 3A, Section 3 currently provides that the Exchange will not authorize FLEX Options on shares of the

iShares Bitcoin Trust ETF.<sup>5</sup> The Exchange proposes this amendment in light of the position and exercise limits of 25,000 contracts that were set for the Fidelity Wise Origin Bitcoin Fund, the ARK21Shares Bitcoin ETF, the Grayscale Bitcoin Trust (BTC), the Grayscale Bitcoin Mini Trust BTC, and the Bitwise Bitcoin ETF in the Cboe Approval Order<sup>6</sup> and the NYSE American Approval Order,<sup>7</sup> respectively. If the Exchange determines to allow FLEX Options on the Bitcoin Trusts at a later date, it will do so by submitting a 19b-4 rule change with the Commission.

###### 2. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,<sup>8</sup> in general, and furthers the objectives of Section 6(b)(5) of the Act,<sup>9</sup> in particular, in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest.

The Exchange's proposal to amend Options 3A, Section 3, FLEX Options Listings, to note that it will not authorize for trading a FLEX Option on each of the Bitcoin Trusts is consistent with the spirit of the Cboe Approval Order<sup>10</sup> and the NYSE American Approval Order,<sup>11</sup> respectively, that limited the position and exercise limits for each of the Bitcoin Trusts to 25,000 contracts. The proposal will protect investors and the general public because without this prohibition, trading a FLEX Option on the Bitcoin Trusts would otherwise establish different position and exercise limits than those set by the aforementioned approval orders. For clarity, this exclusion will apply to both physically-settled and cash-settled FLEX ETF options, such that options on the Bitcoin Trusts will be excluded from

<sup>5</sup> *Id.*

<sup>6</sup> See Securities Exchange Act Release No. 101387 (October 18, 2024), 89 FR 84948 (October 24, 2024) (SR-Cboe-2024-035) (Notice of Filing of Amendment Nos. 2 and 3 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 2 and 3, To Permit the Listing and Trading of Options on Bitcoin Exchange-Traded Funds) ("Cboe Approval Order").

<sup>7</sup> See Securities Exchange Act Release No. 101386 (October 18, 2024), 89 FR 84960 (October 24, 2024) (SR-NYSEAMER-2024-49) (Notice of Filing of Amendment No. 3 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment No. 3, To Permit the Listing and Trading of Options on Bitcoin Exchange-Traded Funds) ("NYSE American Approval Order").

<sup>8</sup> 15 U.S.C. 78f(b).

<sup>9</sup> 15 U.S.C. 78f(b)(5).

<sup>10</sup> See supra note 5.

<sup>11</sup> See supra note 6.

<sup>3</sup> See SR-ISE-2024-054 (not yet noticed).

<sup>4</sup> See Securities Exchange Act Release No. 101720 (November 22, 2024), (SR-ISE-2024-12) (not yet noticed). This rule change is approved, but not yet implemented.

<sup>17</sup> 17 CFR 200.30-3(a)(12).

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

being eligible to trade as a physically-settled or a cash-settled FLEX ETF option.

#### *B. Self-Regulatory Organization's Statement on Burden on Competition*

The proposed rule change does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

The Exchange's proposal to amend Options 3A, Section 3 to specify that it will not authorize for trading a FLEX Option on any of the Bitcoin Trusts does not impose an intra-market burden on competition as no ISE Member will be able to transact a FLEX Option on any of Bitcoin Trusts.

The proposal does not impose inter-market burden on competition because other exchanges have not authorized FLEX Options on the Bitcoin Trusts.<sup>12</sup>

#### *C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

No written comments were either solicited or received.

### **III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

Because the foregoing proposed rule change does not: (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act<sup>13</sup> and Rule 19b-4(f)(6) thereunder.<sup>14</sup>

A proposed rule change filed pursuant to Rule 19b-4(f)(6) under the Act normally does not become operative for 30 days after the date of its filing. However, Rule 19b-4(f)(6)(iii)<sup>15</sup> permits the Commission to designate a shorter time if such action is consistent with the protection of investors and the public interest. The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Exchange states that the not

<sup>12</sup> See e.g. Cboe Rule 4.20 and NYSE American Rule 903G(a)(1).

<sup>13</sup> 15 U.S.C. 78s(b)(3)(A).

<sup>14</sup> 17 CFR 240.19b-4(f)(6). In addition, Rule 19b-4(f)(6)(iii) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Commission waives this requirement.

<sup>15</sup> 17 CFR 240.19b-4(f)(6)(iii).

authorizing FLEX options on the Bitcoin Trusts will maintain the 25,000-contract position and exercise limits established for options on the Bitcoin Trusts in the Cboe Approval Order and the NYSE American Approval Order because FLEX options would be subject to different position and exercise limits.<sup>16</sup> The Exchange states that the exclusion will apply to both physically-settled and cash-settled FLEX ETF options, such that options on the Bitcoin Trusts will be excluded from being eligible to trade as a physically-settled or a cash-settled FLEX ETF option. As discussed above, the rules of other option exchanges currently prohibit the listing of FLEX options on the Bitcoin Trusts.<sup>17</sup> The proposal will align the Exchange's rules with the rules of these exchanges and will ensure that all options listed on the Bitcoin Trusts are subject to position and exercise limits of 25,000 contracts. The proposal does not raise new or novel regulatory issues. Therefore, the Commission believes that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest. Accordingly, the Commission hereby waives the 30-day operative delay and designates the proposed rule change operative upon filing.<sup>18</sup>

At any time within 60 days of the filing of such proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act.

### **IV. Solicitation of Comments**

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

#### *Electronic Comments*

- Use the Commission's internet comment form (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include file number SR-ISE-2024-55 on the subject line.

<sup>16</sup> See *supra* notes 6 and 7.

<sup>17</sup> See *supra* note 12.

<sup>18</sup> For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

#### *Paper Comments*

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090.

All submissions should refer to file number SR-ISE-2024-55. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (<https://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-ISE-2024-55 and should be submitted on or before December 24, 2024.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>19</sup>

**Sherry R. Haywood,**  
*Assistant Secretary.*

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<sup>19</sup> 17 CFR 200.30-3(a)(12), (59).

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-101775; File No. SR-NYSEARCA-2024-98]

### Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Proposed Rule Change To List and Trade Shares of the Bitwise 10 Crypto Index Fund Under Proposed NYSE Arca Rule 8.800-E (Commodity- and Digital Asset-Based Investment Interests)

November 27, 2024.

Pursuant to Section 19(b)(1)<sup>1</sup> of the Securities Exchange Act of 1934 (“Act”)<sup>2</sup> and Rule 19b-4 thereunder,<sup>3</sup> notice is hereby given that, on November 14, 2024, NYSE Arca, Inc. (“NYSE Arca” or the “Exchange”) filed with the Securities and Exchange Commission (the “Commission”) the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

#### I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to list and trade shares of the Bitwise 10 Crypto Index Fund (the “Trust”) under proposed NYSE Arca Rule 8.800-E (Commodity- and/or Digital Asset-Based Investment Interests). The proposed rule change is available on the Exchange’s website at [www.nyse.com](http://www.nyse.com), at the principal office of the Exchange, and at the Commission’s Public Reference Room.

#### II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant parts of such statements.

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 15 U.S.C. 78a.

<sup>3</sup> 17 CFR 240.19b-4.

#### A. Self-Regulatory Organization’s Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

##### 1. Purpose

The Exchange recently proposed to adopt new NYSE Arca Rule 8.800-E to provide for the listing and trading of Commodity- and/or Digital Asset-Based Investment Interests, which are securities issued by a trust, limited liability company, or other similar entity that holds specified commodities, digital assets, Derivative Securities Products, and/or cash.<sup>4</sup> The Exchange now proposes to list and trade shares of the Trust<sup>5</sup> under proposed NYSE Arca Rule 8.800-E.

According to the Annual Report, the Trust will not be registered as an investment company under the Investment Company Act of 1940,<sup>6</sup> and is not required to register thereunder. The Trust is not a commodity pool for purposes of the Commodity Exchange Act.<sup>7</sup>

The Exchange represents that the Shares satisfy the requirements of proposed NYSE Arca Rule 8.800-E and thereby qualify for listing on the Exchange.<sup>8</sup>

##### Operation of the Trust<sup>9</sup>

The Trust will issue the Shares which, according to the Annual Report, represent units of undivided beneficial ownership of the Trust. The Trust is a Delaware statutory trust and will operate pursuant to a trust agreement (the “Trust Agreement”) between Bitwise Investment Advisers, LLC (the “Sponsor” or “Bitwise”) and Delaware Trust Company, as the Trust’s trustee (the “Trustee”). Coinbase Custody Trust Company, LLC will maintain custody of the Trust’s assets (the “Custodian”). The Bank of New York Mellon will be the custodian for the Trust’s cash holdings (in such role, the “Cash Custodian”), as

<sup>4</sup> See Securities Exchange Act Release No. 101470 (October 29, 2024), 89 FR 87681 (November 4, 2024) (SR-NYSEARCA-2024-87). Shares of the Trust will not trade on the Exchange until such time that both the instant proposed rule change and the proposed rule change to adopt Rule 8.800-E have been approved by the Commission.

<sup>5</sup> The Trust is a Delaware statutory trust. Shares of the Trust currently trade under the symbol BITW on OTCQX. On March 1, 2024, the Trust filed with the Commission an Annual Report on Form 10-K for the fiscal year ended December 31, 2023 (the “Annual Report”).

<sup>6</sup> 15 U.S.C. 80a-1.

<sup>7</sup> 17 U.S.C. 1.

<sup>8</sup> With respect to the application of Rule 10A-3 (17 CFR 240.10A-3) under the Act, the Trust relies on the exemption contained in Rule 10A-3(c)(7).

<sup>9</sup> The description of the operation of the Trust, the Shares, and digital asset markets contained herein is based, in part, on the Annual Report. See note 5, *supra*.

well as the Trust’s administrator (in such role, the “Administrator”) and transfer agent (in such role, the “Transfer Agent”).

According to the Annual Report, the investment objective of the Trust is to invest in a portfolio of digital assets (each, a “Portfolio Asset” and, collectively, “Portfolio Assets”) that tracks the Bitwise 10 Large Cap Crypto Index (the “Index”). The Index is administered by Bitwise Index Services, LLC, an affiliate of the Sponsor (the “Index Provider”). The Trust rebalances monthly alongside the rebalance of the Index to stay current with any changes to the Index. As of October 31, 2024, the Trust’s Portfolio Assets and respective weightings are:

Portfolio asset	Symbol	Weight (%)
Bitcoin .....	BTC	75.10
Ethereum .....	ETH	16.5
Solana .....	SOL	4.30
XRP .....	XRP	1.50
Cardano .....	ADA	0.70
Avalanche .....	AVAX	0.60
Chainlink .....	LINK	0.40
Bitcoin Cash .....	BCH	0.40
Polkadot .....	DOT	0.30
Uniswap .....	UNI	0.30

To determine the Trust’s Net Asset Value (“NAV”) at the end of every Business Day,<sup>10</sup> the Sponsor will rely on a third-party valuation vendor, CF Benchmarks Ltd. (the “Valuation Vendor”), to calculate and publish the U.S. dollar price for each Portfolio Asset (each, a “Reference Price” and, collectively, the “Reference Prices”) as of 4:00 p.m. E.T. using prices from several different digital asset trading platforms selected by the Valuation Vendor.<sup>11</sup> Each Reference Price aggregates the trade flow of several major digital asset trading platforms during an observation window between 3:00 p.m. and 4:00 p.m. E.T. into the U.S. dollar price of one of each Portfolio Asset at 4:00 p.m. E.T. The Reference Price calculation is designed based on the IOSCO Principals for Financial Benchmarks.

The Trust’s only assets will be Portfolio Assets and cash.<sup>12</sup> The Trust

<sup>10</sup> For purposes of this filing, a “Business Day” is defined as any day on which the New York Stock Exchange is scheduled to be open for trading.

<sup>11</sup> Digital asset trading platforms considered by the Valuation Vendor currently include Bitstamp, Coinbase, Gemini, itBit, LMAX, and Kraken. The Valuation Vendor’s selection of digital asset trading platforms from which the Reference Prices may be derived is further discussed below.

<sup>12</sup> The Trust conducts creations and redemptions of its Shares for cash. Authorized Participants (defined below) will deliver cash to the Cash

Continued

does not seek to hold any digital assets other than Portfolio Assets and has expressly disclaimed ownership of any such assets in the event the Trust ever involuntarily comes into possession of such assets.<sup>13</sup> The Trust will not use derivatives that may subject the Trust to counterparty and credit risks. The Trust will process creations and redemptions in cash. The Trust's only recurring ordinary expense is expected to be the Sponsor's unitary management fee (the "Management Fee"), which will accrue daily and will be payable monthly in arrears. The Administrator will calculate the Management Fee by applying an annualized rate to the NAV of the Trust's assets at the end of each month. Financial institutions authorized to create and redeem Shares (each, an "Authorized Participant") will deliver, or cause to be delivered, cash in exchange for Shares of the Trust, and the Trust will deliver cash to

Custodian pursuant to creation orders for Shares and the Cash Custodian will hold such cash until such time as it can be converted to Portfolio Assets, which the Trust intends to do on the same Business Day in which such cash is received by the Cash Custodian. Additionally, the Trust will sell Portfolio Assets in exchange for cash pursuant to redemption orders of its Shares. In connection with such sales, an approved Digital Asset Trading Counterparty (defined below) will send cash to the Cash Custodian. The Cash Custodian will hold such cash until it can be distributed to the redeeming Authorized Participant, which it intends to do on the same Business Day in which it is received. In connection with the purchases and sales of Portfolio Assets pursuant to its creation and redemption activity, it is possible that the Trust may retain de minimis amounts of cash as a result of rounding differences. The Trust may also initially hold small amounts of cash to initiate Trust operations in the immediate aftermath of its Registration Statement being declared effective. Lastly, the Trust may also sell Portfolio Assets and temporarily hold cash as part of a liquidation of the Trust or to pay certain extraordinary expenses not assumed by the Sponsor. Under the Trust Agreement, the Sponsor has agreed to assume the normal operating expenses of the Trust, subject to certain limitations. For example, the Trust will bear any indemnification or litigation liabilities as extraordinary expenses. In any event, in the ongoing course of business, the amounts of cash retained by the Trust are not expected to constitute a material portion of the Trust's holdings.

<sup>13</sup> The Trust may, from time to time, passively receive, by virtue of holding Portfolio Assets, certain additional digital assets ("IR Assets") or rights to receive IR Assets ("Incidental Rights") through a fork of a digital asset network or an airdrop of assets. The Trust will not seek to acquire such IR Assets or Incidental Rights. Pursuant to the terms of the Trust Agreement, the Trust has disclaimed ownership in any such IR Assets and/or Incidental Rights to make clear that such assets are not and shall never be considered assets of the Trust and will not be taken into account for purposes of determining the Trust's NAV or NAV per Share. Neither the Trust, nor the Sponsor, nor the Custodian, nor any other person associated with the Trust will, directly or indirectly, engage in action where any portion of the Trust's Portfolio Assets becomes subject to any proof-of-stake validation or is used to earn additional assets or generate income or other earnings.

Authorized Participants when those Authorized Participants redeem Shares of the Trust.

#### The Index

The Bitwise Crypto Index Committee (the "Committee"), convened by the Index Provider, is the governing body of the Index and is responsible for developing, maintaining, and adjusting the methodology by which the Index is constructed (the "Index Methodology").<sup>14</sup> The Index is comprised of ten digital assets (the "Index Components") and is designed to track the performance of the ten largest digital assets that currently trade publicly on eligible digital asset trading platforms, as selected and weighted by free-float market capitalization. The market capitalization of a digital asset is calculated by multiplying its price<sup>15</sup> times its free-float-adjusted or "circulating"<sup>16</sup> supply. The proportion of each digital asset in the Index is based on this adjusted market capitalization.

The Index will only consider for eligibility as Index Components digital assets that satisfy the following criteria:

- The digital asset must be a cryptographically secured digital bearer instrument;
- The digital asset must have a price that is not pegged to another digital asset, fiat currency, group of those currencies, or hard asset;
- The digital asset must be freely traded and can be freely held for the foreseeable future;
- The digital asset must trade on an Eligible Digital Asset Trading Platform,<sup>17</sup> without withdrawal issues specific to that digital asset;

<sup>14</sup> The full Index Methodology is available at <https://bitwiseinvestments.com/indexes/methodology>.

<sup>15</sup> Based on the Lukka Prime price.

<sup>16</sup> According to the Annual Report, circulating supply is the best approximation of the number of coins available on public markets. Circulating supply is derived by taking the total number of existing digital assets native to a specific Blockchain and subtracting the number of coins verifiably burned, locked, or reserved (for example, by a foundation).

<sup>17</sup> The Committee determines which trading platforms qualify as Eligible Digital Asset Trading Platforms. To qualify as an Eligible Digital Asset Trading Platform, a venue must: (1) provide an open platform for exchanging at least one digital asset for either another digital asset or for a fiat currency; (2) not be domiciled in a country, region, or locality that implements meaningful capital controls on international investors; (3) not be subject to extraordinary regulatory or legal action that is likely to lead to unusual pricing, significantly disrupt institutional access to the market, or disrupt fiat withdrawals; (4) charge fees for trading; (5) have a functioning, secure, and reliable application programming interface (API) allowing for the timely ingestion of trade and volume data; (6) have no significant downtime,

• The digital asset must be custodied by a third-party custodian regulated as a federally chartered bank or as a state trust company, that meets additional security practices, insurance requirements, and business practice requirements as determined by the Committee;<sup>18</sup>

• The digital asset must have no known security vulnerabilities, including critical bugs, undue exposure to 51% attacks, or other factors, as determined by the Committee;

• The digital asset must not face undue risk of being deemed a security under U.S. federal securities laws in the opinion of the Committee, given present knowable facts and circumstances;<sup>19</sup>

• The digital asset must have traded more than 1% of its free-float-adjusted market capitalization on eligible trading venues over the past 30 days; and

withdrawal, or known security issues; (7) account for more than 1.0% of the combined trailing 30-day dollar trading volume of all digital assets on entities that meet the prior listed rules; and (8) in the opinion of the Committee, have significant real spot trading volume. The list of Eligible Digital Asset Trading Platforms is reviewed on an annual basis. As of January 25, 2024, the date that the Committee performed its 2024 annual review of Eligible Digital Asset Trading Platforms, the list of Eligible Digital Asset Trading Platforms included Bitstamp, BitFlyer, Coinbase, Gemini, Kraken, itBit, and LMAX.

<sup>18</sup> The list of approved custodians is reviewed and updated on an annual basis, or at the discretion of the Committee. As of January 23, 2024, the date that the Committee performed its 2024 annual review of eligible custodians, the list of approved custodians included Anchorage, Bakkt Warehouse, BitGo, Coinbase Custody, Fidelity Digital Assets, and Gemini Custody.

<sup>19</sup> The Committee conducts a risk-based assessment that considers whether the digital asset may be deemed a security under U.S. federal securities laws and whether it is subject to regulatory action that may imperil the value of the digital asset. Such assessment does not preclude legal or regulatory action based on the presence of a security. The Committee does not engage in legal analysis of any digital assets or perform any analysis of digital assets based upon any legal standards. The Committee reviews the following information to make this determination: (1) public information to determine if the Commission, any other U.S. regulatory agency, or any court has made any statements regarding the digital asset; (2) public information regarding how the digital asset markets view the digital asset, including whether the digital asset has been listed on entities such as Coinbase or other U.S. digital asset trading platforms that would have had access to a reasonable amount of information when making their determinations to list the digital asset; (3) public information to undertake reasonable diligence into the structure and technology of the digital asset, including reviewing the digital asset's whitepaper if available and speaking with the sponsor of the digital asset; and (4) any other information gained from reputable sources that may impact the Committee's view of the digital asset, including a review of any websites associated with the digital asset's development. If the Committee adds a digital asset to the Index, but later becomes aware of new information that causes the Committee to reevaluate the risk profile of such digital asset, the Committee will review such information and determine whether the digital asset should be removed from the Index.

- The digital asset must have maintained a unit price greater than \$0.01 for the past 30 consecutive days.

The Index is reconstituted on a monthly basis at 4:00 p.m. E.T. on the last Business Day of each month. As of October 31, 2024, the Index included the following digital assets, and their weights were as follows:<sup>20</sup>

Digital asset	Weight (%)
Bitcoin .....	75.14
Ethereum .....	16.42
Solana .....	4.30
XRP .....	1.56
Cardano .....	0.66
Avalanche .....	0.55
Chainlink .....	0.39
Bitcoin Cash .....	0.38
Uniswap .....	0.31
Polkadot .....	0.30

To the extent that a digital asset meets the Index’s eligibility requirements at a future date, it would be considered for inclusion in the Index in connection with a future rebalancing. Digital assets will lose eligibility and be removed from the Index at the next monthly reconstitution event if they violate any of the eligibility requirements described above for 30 consecutive days.<sup>21</sup>

The Index is calculated on a daily basis and published on the Sponsor’s website. Should any material change be made to the Index Methodology that results in a material change to the composition of the Index and, as part of the Trust’s monthly rebalancing process, results in a material change to the composition of the Trust (which the Sponsor generally considers to be a change of 10% or more to the Trust or the Index holdings, but in any event, is also determined at the Trust’s discretion), the Trust will notify shareholders of such material change by filing a Form 8–K with the Commission.

The Index will implement a rule that will limit the Index Components and weightings thereof such that at least 90% of the weight of the Index Components shall, on both an initial

and continuing basis, consist of commodities and/or digital assets concerning which the Exchange is able to obtain information via the Intermarket Surveillance Group (“ISG”), from other members of the ISG, or via a comprehensive surveillance sharing agreement (“CSSA”) at each monthly rebalancing. This rule will be in effect prior to such time that Shares of the Trust begin trading on the Exchange.

**The Portfolio Assets and Index Components**

The Portfolio Assets will consist of the Index Components except that the Sponsor may determine to exclude a particular Index Component in its discretion under certain specified circumstances further described below (including to comply with the proposed requirements of Rule 8.800–E(e)(1)). The weighting of each Portfolio Asset is generally expected to be the same as the weighting of the Index Components in the Index, except when the Sponsor determines to exclude one or more digital assets from the Portfolio Assets in the rules-based circumstances set forth below, in which case the weightings of the Portfolio Assets are generally expected to be calculated proportionally to the respective Index Components for the remaining Index Components.

The Sponsor will retain discretion to include or exclude individual digital assets from the Portfolio Assets only in the following circumstances:

- The Sponsor may exclude a digital asset or rebalance the weighting of an existing Portfolio Asset to the extent its inclusion as a Portfolio Asset or projected weighting would exceed a threshold that could, in the Sponsor’s sole discretion, require the Trust to register as an investment company under the Investment Company Act or require the Sponsor to register as an investment adviser under the Investment Advisers Act;
- None or few of the Authorized Participants or service providers has the ability to trade or otherwise support a digital asset;
- The Sponsor believes, based on current guidance, that use or trading of the digital asset raises or potentially raises significant governmental, policy, or regulatory concerns or is subject or likely subject to a specialized regulatory regime, such as the U.S. federal securities or commodities laws or similar laws in other significant jurisdictions;
- The digital asset’s underlying code contains, or may contain, significant flaws or vulnerabilities;

- There is limited or no reliable information regarding, or concerns over the intentions of, the core developers of the digital asset; or

• Any of the existing criteria used by the Index for inclusion in the Index is found by the Sponsor to prohibit the inclusion of the digital asset in the Index, in which case, the Sponsor may, in its sole discretion, cause the Portfolio Assets to deviate from the Index Components until such time as the Index has taken similar action.

The Trust does not intend for the Portfolio Assets to deviate from the Index Components, and the Trust anticipates that such deviation would likely occur only if the Trust was unable to hold a particular digital asset included in the Index, if the Trust determined that holding that particular digital asset would result in significant harm to shareholders, or if the holding of that digital asset would cause the Trust’s holdings to be inconsistent with the proposed requirements of Rule 8.800–E(c)(1). The Sponsor will ensure that the Trust’s holdings are consistent with the requirements of Rule 8.800–E(c)(1), as proposed, by monitoring the weightings of the Portfolio Assets and Index Components daily and taking any measures as described in the preceding section to ensure that 90% of the holdings will consist of commodities and/or digital assets concerning which the Exchange may obtain information via the ISG, from other members of the ISG, or via CSSA<sup>22</sup> and by implementing an Index rule that will limit the Index Components and weightings such that at least 90% of the weight of such constituents shall, on both an initial and continuing basis, consist of the same assets.

**Background on Portfolio Assets**

**Bitcoin**

Bitcoin is the most well-recognized digital asset in the world. As of October 31, 2024, bitcoin is the largest digital asset in the world by market capitalization. Bitcoin was invented in 2008 by a pseudonymous software developer, or a group of software developers, under the name Satoshi Nakamoto. Nakamoto published a white paper titled “Bitcoin: A Peer-to-Peer Electronic Cash System” on October 31, 2008, which provided the technical outline for launching the bitcoin network. The network went live on January 3, 2009, when Nakamoto mined

<sup>20</sup> The weighting of the Trust’s Portfolio Assets will differ slightly from the weightings of the Index Components due to the need for the Trust to implement actual rebalance transactions, unlike the Index. The transactions undertaken by the Trust to align the Portfolio Assets with the Index Components may create transaction costs, fees, and trading slippage, which may cause the Trust’s performance to deviate slightly from the Index’s performance.

<sup>21</sup> Under extraordinary circumstances, digital assets may lose eligibility to be Index Components and be removed from the Index on a same-day basis by a unanimous vote of the quorum of members of the Committee. Such emergency removals will take place at 4:00 p.m. E.T. following the conclusion of such decision by the Committee and will be publicly available on the Sponsor’s website.

<sup>22</sup> The Sponsor notes that, as of the date of this filing, the Index Components and Portfolio Assets that meet this standard are bitcoin and ether, which make up more than 91% of the Trust and Index.



the first block of transactions, known as the “Genesis Block.”

The software underlying the Bitcoin Blockchain determines a number of key and independent parameters. At the heart of the system lies the algorithm that enforces that all ledgers converge over time (commonly known as the “Consensus Algorithm”). Other important portions of the system include the rules that deem a transaction valid, a programming language that allows for different types of transactions to be executed, and the process through which new digital assets are minted (commonly known as “Mining”), and others. The network strictly enforces the total amount of units issued to converge towards 21 million by the year 2140 through a predetermined schedule.

New bitcoin is created when Miners process blocks of transactions. In the bitcoin network, this occurs roughly every ten minutes. The Blockchain periodically adjusts the difficulty of settling transactions to ensure that cadence remains approximately accurate. The amount of new bitcoin created each time a block of bitcoin transactions is processed is predetermined by the software underlying the bitcoin Blockchain. Initially, the Miner that settled a block of transactions on the bitcoin Blockchain received 50 bitcoin. That reward was and is programmed to be cut in half roughly every four years; currently, Miners receive 3.125 bitcoin for each block of settled transactions.

The bitcoin network is known for being extremely decentralized, as it is maintained by a network of computers that, joined together, represents the largest supercomputer in the world. Some believe that this makes bitcoin more secure and resistant to attacks compared to other Blockchain networks.

#### Ethereum

Ether is the native digital asset of Ethereum, the second largest Blockchain network ranked by market capitalization as of October 31, 2024. Ethereum was described in a white paper in late 2013, and an online crowdsale to fund development took place between July and August 2014. The network went live in July 2015.

Ethereum was specifically designed to power smart contracts, which are computer programs intended to enforce the performance of a contract that parties can codify and agree upon with minimal or no need of trusted intermediaries.

Ethereum’s script language, the programming language that developers use for creating Blockchain

applications, is significantly more flexible than bitcoin’s. This allows the creation of programs that do general computation instead of only the relatively simple conditional payments that are possible with bitcoin. As such, a whole ecosystem of different applications including asset issuance, decentralized financial applications, identity management, and others are able to be and have been developed on top of the Ethereum network. However, Ethereum’s more permissive programming language makes the network inherently less secure because it can increase the odds that a catastrophic bug in one smart contract could affect the whole network.

Due to Ethereum’s focus on enabling innovation on its Blockchain system, events like hard forks are significantly more common in Ethereum than in bitcoin. For example, on September 15, 2022, Ethereum transitioned from a proof-of-work network to a proof-of-stake network. This infrastructure upgrade was known as “The Merge.” This was only one of several hard forks the Ethereum Blockchain has undergone since inception. Some consider Ethereum’s stance as an advantage, while others perceive it as a risk, especially as the project grows larger and the cost of potential mistakes rises.

#### Solana

Solana is a decentralized blockchain network with a focus on secure, low-fee, high-speed transactions that are paid for using SOL, which is the Solana Blockchain’s native digital asset. By leveraging proof-of-history and other breakthrough innovations, Solana allows for greater throughput than many other Blockchains, with the ability to scale at the rate of Moore’s Law. Solana, like Ethereum, is home to several use cases including gaming, decentralized finance, and non-fungible token marketplaces.

#### XRP

XRP is a digital asset that was created by Chris Larsen, Jed McCaleb, Arthur Britto, and David Schwartz (the “XRP Creators”) in 2012. Built out of the frustrations of bitcoin’s utility for payments, the XRP ledger (the ledger to which XRP is native) is designed to be a global real-time payment and settlement system. The XRP Creators developed this unique digital asset to solve the scalability concerns that they believed were inherent in the structure of bitcoin. In particular, XRP was created to improve the efficiency of payments. To this end, the open source code (available at <https://github.com/ripple/rippled/>) was designed to

maximize speed, scalability, and stability. For example, the XRP ledger can accommodate 4,400 transactions per second. This is, in part, because XRP is not mined like bitcoin, but is designed for the ledgers to close in seconds based on a system of consensus. Further, because of the consensus methodology underlying the XRP design, network transaction fees are substantially lower than bitcoin, typically less than \$0.01. Given the unique qualities of XRP and the natural suitability of this digital asset to solve the friction experience with payments, the XRP Creators started a company, calling it Ripple, to further develop the ecosystem around XRP and build software solutions to address the friction in sending, processing, and sourcing liquidity for global payments. Thus, the company, Ripple, began as, and continues to be, a payments software company. Today, Ripple is focused on designing and deploying state-of-the-art and industry-leading software to enable banks and financial institutions to more easily effect cross-border payments. For maximum efficiency, Ripple’s software can integrate XRP to solve liquidity and value transfer challenges.

#### Cardano

Cardano is a proof-of-stake Blockchain and smart contract platform that facilitates secure payments and enables developers to build decentralized applications. Grounded in research and academia, the protocol and its token were named after 16th and 19th century polymaths, and its programming language, Haskell, is commonly used in the traditional finance and security sectors.

#### Avalanche

Avalanche is a Blockchain ecosystem that is home to several applications across a variety of use cases including, but not limited to, gaming and decentralized finance. Avalanche’s design makes it relatively easy for developers to deploy applications to and from Ethereum. Avalanche was designed to be a faster and cheaper alternative to other Blockchains for purposes of a better user and developer experience. For example, the network leverages its different built-in Blockchains for enhanced transaction speeds at economically feasible costs. To that end, some of its built-in Blockchains are dedicated to specific use cases and/or applications to avoid network congestion the popularity of other applications can cause.

### Chainlink

Chainlink is a network that connects smart contracts with real world data. Blockchain networks are unaware of what happens outside of those networks, and therefore whenever a Blockchain application needs to interact with external data, it needs a reliable data source to do so. These data sources are known in the industry as “Oracles.” Relying on one Oracle creates a single point of failure, and Chainlink aims to solve this issue by providing a decentralized network of multiple Oracles that can evaluate the same data. The accuracy of this data can be important if this data is used to trigger activity on a smart contract or other Blockchain application. Chainlink provides price reference data feeds for decentralized finance, and also allows users to create their own Oracle networks. Larger enterprises can also use Chainlink to sell their data to smart contracts that need them to trigger a certain condition. Current use cases for Chainlink include stable digital assets, decentralized lending and borrowing, and asset management.

### Bitcoin Cash

Bitcoin Cash is a proof-of-work lockchain that was created as a hard fork of bitcoin on August 1, 2017. At inception, the most significant difference between Bitcoin Cash’s Blockchain design and the Blockchain design of bitcoin was Bitcoin Cash’s adoption of larger block sizes. Larger block sizes allow the Bitcoin Cash Blockchain to process more transactions per second than the bitcoin Blockchain.

### Uniswap

Uniswap is the governance token of the Uniswap protocol. Over the past five years, Uniswap has emerged as a leading decentralized exchange for digital assets. Uniswap’s automated platform lets traders exchange digital assets in the same way they do on centralized trading venues like Coinbase, but without a company standing in the middle of the transaction. Additionally, Uniswap’s decentralized structure allows any individual to act as a market maker and provide liquidity on the platform, earning yield while facing risk.

### Polkadot

Polkadot is a proof-of-stake Blockchain that leverages a newer infrastructure design to that of Solana’s and Ethereum’s. For purposes of enhanced performance, Polkadot splits up the workload by hosting various independent blockchains on top of one central blockchain, known as the Relay

Chain. The purpose of the Relay Chain is to provide ecosystem support, notably in terms of security and interoperability.

### Custody of the Trust’s Portfolio Assets

The Custodian will maintain custody of the Portfolio Assets, other than that which is maintained in a trading account (the “Trading Balance”) with Coinbase, Inc. (the “Prime Execution Agent,” which is an affiliate of the Custodian). The Custodian will maintain an account that holds the Trust’s Portfolio Assets (the “Trust Digital Asset Account”) and will facilitate the transfer of Portfolio Assets required for the operation of the Trust. The Trading Balance will only be used in the limited circumstances in which the Trust is using the Agent Execution Model (as defined below) to effectuate the purchases and sales of Portfolio Assets. The Custodian provides safekeeping of Portfolio Assets using a multi-layer cold storage security platform designed to provide offline security of the Portfolio Assets held by the Custodian.

### Valuation of the Trust’s Portfolio Assets and Determination of NAV

The net assets of the Trust and its Shares are valued on a daily basis by the Valuation Vendor. The Trust uses the Reference Prices to calculate its NAV.

The Sponsor, in its sole discretion, may cause the Trust to price its portfolio based upon an index, benchmark, or standard other than the Reference Prices at any time, with prior notice to the shareholders, if investment conditions change or the Sponsor believes that another index, benchmark, or standard better aligns with the Trust’s investment objective and strategy. The Sponsor may make this decision for a number of reasons, including, but not limited to, a determination that the Reference Prices differ materially from the global market price of the Portfolio Assets and/or that third parties are able to purchase and sell Portfolio Assets on public or private markets not included among the Valuation Trading Platforms, and such transactions may take place at prices materially higher or lower than the Reference Prices. The Sponsor, however, is under no obligation whatsoever to make such changes in any circumstance. In the event that the Sponsor intends to establish the Trust’s NAV by reference to an index, benchmark, or standard other than Reference Prices, it will provide shareholders with notice in a prospectus supplement and/or through a current

report on Form 8-K or in the Trust’s annual or quarterly reports.<sup>23</sup>

The Trust’s only assets will be Portfolio Assets and, under limited circumstances, cash. The Trust’s NAV and NAV per Share will be determined by the Administrator once each Exchange trading day as of 4:00 p.m. E.T., or as soon thereafter as practicable. The Administrator will calculate the NAV by multiplying the Portfolio Assets held by the Trust by their respective Reference Prices for such day, adding any additional receivables and subtracting the accrued but unpaid liabilities of the Trust. The NAV per Share is calculated by dividing the NAV by the number of Shares then outstanding. The Valuation Vendor will determine the price of the Trust’s Portfolio Assets by reference to the Valuation Trading Platforms.

### Intraday Trust Value

The Trust uses the real-time prices published by the Valuation Vendor for each Portfolio Asset to calculate an Indicative Trust Value (“ITV”). One or more major market data vendors will disseminate the ITV, updated every 15 seconds each trading day as calculated by the Exchange or a third-party financial data provider during the Exchange’s Core Trading Session (9:30 a.m. to 4:00 p.m. E.T.). The ITV will be calculated throughout the trading day by using the prior day’s holdings at the close of business and the most recently reported price level of the real-time prices for each Portfolio Asset published by the Valuation Vendor. The ITV will be widely disseminated by one or more major market data vendors during the NYSE Arca Core Trading Session.

### Creation and Redemption of Shares

The Trust creates and redeems Shares from time to time, but only in one or more Creation Units, which will initially consist of at least 10,000 Shares, but may be subject to change (“Creation Unit”). A Creation Unit is only made in exchange for delivery to the Trust or the distribution by the Trust of an amount of cash, equivalent to the value of Portfolio Assets represented by the Creation Unit being created or redeemed, the amount of which is representative of the combined NAV of the number of Shares included in the Creation Units being created or redeemed determined as of 4:00 p.m. E.T. on the day the order to create or redeem Creation Units is properly

<sup>23</sup> The Sponsor will provide notice of any such changes in the Trust’s periodic or current reports and, if the Sponsor makes such a change other than on an ad hoc or temporary basis, will file a proposed rule change with the Commission.

received. Except when aggregated in Creation Units or under extraordinary circumstances permitted under the Trust Agreement, the Shares are not redeemable securities.

Authorized Participants are the only persons that may place orders to create and redeem Creation Units. Authorized Participants must be (1) registered broker-dealers or other securities market participants, such as banks and other financial institutions, that are not required to register as broker-dealers to engage in securities transactions described below, and (2) Depository Trust Company (“DTC”) participants. To become an Authorized Participant, a person must enter into an Authorized Participant Agreement with the Trust and/or the Trust’s marketing agent (the “Marketing Agent”).

When purchasing or selling Portfolio Assets in response to the purchase of Creation Units or the redemption of Creation Units, which will be processed in cash, the Trust would do so pursuant to either (1) a “Trust-Directed Trade Model,” or (2) an “Agent Execution Model,” which are each described in more detail below.

The Trust intends to utilize the Trust-Directed Trade Model for all purchases and sales of Portfolio Assets and would only utilize the Agent Execution Model in the event that no digital asset trading counterparty approved by the Sponsor (a “Digital Asset Trading Counterparty”)<sup>24</sup> is able to effectuate the Trust’s purchase or sale of Portfolio Assets. Under the Trust-Directed Trade Model, in connection with receipt of a purchase order or redemption order, the Sponsor, on behalf of the Trust, would be responsible for acquiring Portfolio Assets from an approved Digital Asset Trading Counterparty in an amount equal to the Basket Amount. When seeking to purchase Portfolio Assets on behalf of the Trust, the Sponsor will seek to purchase Portfolio Assets at commercially reasonable prices and terms from any of the approved Digital Asset Trading Counterparties.<sup>25</sup> Once agreed upon, the transaction will generally occur on an “over-the-counter” basis.

Whether utilizing the Trust-Directed Trade Model or the Agent Execution

Model, the Authorized Participants will deliver only cash to create shares and will receive only cash when redeeming Shares. Further, Authorized Participants will not directly or indirectly purchase, hold, deliver, or receive Portfolio Assets as part of the creation or redemption process or otherwise direct the Trust or a third party with respect to purchasing, holding, delivering, or receiving Portfolio Assets as part of the creation or redemption process. Additionally, under either the Trust-Directed Trade Model or the Agent Execution Model, the Trust will create Shares by receiving Portfolio Assets from a third party that is not the Authorized Participant and is not affiliated with the Sponsor or the Trust, and the Trust—not the Authorized Participant—is responsible for selecting the third party to deliver the Portfolio Assets. The third party will not be acting as an agent of the Authorized Participant with respect to the delivery of the Portfolio Assets to the Trust or acting at the direction of the Authorized Participant with respect to the delivery of the Portfolio Assets to the Trust. Additionally, the Trust will redeem Shares by delivering Portfolio Assets to a third party that is not the Authorized Participant and is not affiliated with the Sponsor or the Trust, and the Trust—not the Authorized Participant—is responsible for selecting the third party to receive the Portfolio Assets. Finally, the third party will not be acting as an agent of the Authorized Participant with respect to the receipt of Portfolio Assets from the Trust or acting at the direction of the Authorized Participant with respect to the receipt of Portfolio Assets from the Trust.

#### Acquiring and Selling Portfolio Assets Pursuant to Creation and Redemption of Shares Under the Trust-Directed Trade Model

Under the Trust-Directed Trade Model, on any Business Day, an Authorized Participant may create Shares by placing an order to purchase one or more Creation Units with the Transfer Agent through the Marketing Agent. Such orders are subject to approval by the Marketing Agent and the Transfer Agent. To be processed on the date submitted, creation orders must be placed before 4:00 p.m. E.T. or the close of regular trading on the Exchange, whichever is earlier, but may be required to be placed earlier at the discretion of the Sponsor. A purchase order will be effective on the date it is received by the Transfer Agent and approved by the Marketing Agent (“Purchase Order Date”).

Creation Units are processed in cash. By placing a purchase order, an

Authorized Participant agrees to deposit, or cause to be deposited, an amount of cash equal to the quantity of Portfolio Assets attributable to each Share of the Trust (net of accrued but unpaid expenses and liabilities) multiplied by the number of Shares (10,000) comprising a Creation Unit (the “Basket Amount”). The Sponsor will cause to be published each Business Day, prior to the commencement of trading on the Exchange, the Basket Amount relating to a Creation Unit applicable for such Business Day. That amount is derived by multiplying the Basket Amount by the value of Portfolio Assets ascribed by the Pricing Index. However, the Authorized Participant is also responsible for any additional cash required to account for the price at which the Trust agrees to purchase the requisite amount of Portfolio Assets from a Digital Asset Trading Counterparty to the extent it is greater than the Pricing Index price on each Purchase Order Date.

Prior to the delivery of Creation Units, the Authorized Participant must also have wired to the Transfer Agent the nonrefundable transaction fee due for the creation order. Authorized Participants may not withdraw a creation request. If an Authorized Participant fails to consummate the foregoing, the order may be cancelled.

Following the acceptance of a purchase order, the Authorized Participant must wire the cash amount described above to the Cash Custodian, and the Digital Asset Trading Counterparty must deposit the required amount of Portfolio Assets with the Custodian by the end of the day E.T. on the Business Day following the Purchase Order Date. The Portfolio Assets will be purchased from Digital Asset Trading Counterparties that are not acting as agents of the Trust or agents of the Authorized Participant. These transactions will be done on an arms-length basis, and there is no contractual relationship between the Trust, the Sponsor, or the Digital Asset Trading Counterparty to acquire such Portfolio Assets. Prior to any movement of cash from the Cash Custodian to the Digital Asset Trading Counterparty or movement of Shares from the Transfer Agent to the Authorized Participant’s DTC account to settle the transaction, the Portfolio Assets must be deposited at the Custodian.

The Digital Asset Trading Counterparty must deposit the required amount of Portfolio Assets by end of day E.T. on the Business Day following the Purchase Order Date prior to any movement of cash from the Cash Custodian or Shares from the Transfer

<sup>24</sup> The Digital Asset Trading Counterparties with which the Sponsor will engage in Portfolio Asset transactions are unaffiliated third parties that are not acting as agents of the Trust, the Sponsor or the Authorized Participant, and all transactions will be done on an arms-length basis. There is no contractual relationship between the Trust, the Sponsor or the Digital Asset Trading Counterparty.

<sup>25</sup> The Sponsor will maintain ownership and control of the Portfolio Assets in a manner consistent with good delivery requirements for spot commodity transactions.

Agent. Upon receipt of the deposit amount of Portfolio Assets at the Custodian from the Digital Asset Trading Counterparty, the Custodian will notify the Sponsor that the Portfolio Assets have been received. The Sponsor will then notify the Transfer Agent that the Portfolio Assets have been received, and the Transfer Agent will direct DTC to credit the number of Shares ordered to the Authorized Participant's DTC account and will wire the cash previously sent by the Authorized Participant to the Digital Asset Trading Counterparty to complete settlement of the Purchase Order and the acquisition of the Portfolio Assets by the Trust, as described above.

As between the Trust and the Authorized Participant, the expense and risk of the difference between the value of Portfolio Assets calculated by the Administrator for daily valuation using the Pricing Benchmarks and the price at which the Trust acquires the Portfolio Assets will be borne solely by the Authorized Participant to the extent that the Trust pays more for Portfolio Assets than the price used by the Trust for daily valuation. Any such additional cash amount will be included in the amount of cash calculated by the Administrator on the Purchase Order Date, communicated to the Authorized Participant on the Purchase Order Date, and wired by the Authorized Participant to the Cash Custodian on the day following the Purchase Order Date. If the Digital Asset Trading Counterparty fails to deliver the Portfolio Assets to the Custodian, no cash is sent from the Cash Custodian to the Digital Asset Trading Counterparty, no Shares are transferred to the Authorized Participant's DTC account, the cash is returned to the Authorized Participant, and the Purchase Order is cancelled.

Under the Trust-Directed Trade Model and according to the Registration Statement, the procedures by which an Authorized Participant can redeem one or more Creation Units mirror the procedures for the creation of Creation Units. On any Business Day, an Authorized Participant may place an order with the Transfer Agent through the Marketing Agent to redeem one or more Creation Units. To be processed on the date submitted, redemption orders must be placed before 4:00 p.m. E.T. or the close of regular trading on the Exchange, whichever is earlier, or earlier as determined by the Sponsor. A redemption order will be effective on the date it is received by the Transfer Agent and approved by the Marketing Agent ("Redemption Order Date"). The redemption procedures allow Authorized Participants to redeem

Creation Units and do not entitle an individual shareholder to redeem any Shares in an amount less than a Creation Unit, or to redeem Creation Units other than through an Authorized Participant. In connection with receipt of a redemption order accepted by the Marketing Agent and Transfer Agent, the Sponsor, on behalf of the Trust, is responsible for selling the Portfolio Assets to an approved Digital Asset Trading Counterparty in an amount equal to the Basket Amount.

The redemption distribution from the Trust will consist of a transfer to the redeeming Authorized Participant, or its agent, of the amount of cash the Trust received in connection with a sale of the Basket Amount of Portfolio Assets to a Digital Asset Trading Counterparty made pursuant to the redemption order. The Sponsor will cause to be published each Business Day, prior to the commencement of trading on the Exchange, the redemption distribution amount relating to a Creation Unit applicable for such Business Day. The redemption distribution amount is derived by multiplying the Basket Amount by the value of Portfolio Assets ascribed by the Pricing Benchmarks. However, as between the Trust and the Authorized Participant, the expense and risk of the difference between the value of Portfolio Assets ascribed by the Pricing Benchmarks and the price at which the Trust sells the Portfolio Assets will be borne solely by the Authorized Participant to the extent that the Trust receives less for Portfolio Assets than the value ascribed by the Pricing Benchmarks. Prior to the delivery of Creation Units, the Authorized Participant must also have wired to the Transfer Agent the nonrefundable transaction fee due for the redemption order.

The redemption distribution due from the Trust will be delivered by the Transfer Agent to the Authorized Participant once the Cash Custodian has received the cash from the Digital Asset Trading Counterparty. The Custodian will not send the Basket Amount of Portfolio Assets to the Digital Asset Trading Counterparty until the Cash Custodian has received the cash from the Digital Asset Trading Counterparty and is instructed by the Sponsor to make such transfer. Once the Digital Asset Trading Counterparty has sent the cash to the Cash Custodian in an agreed upon amount to settle the agreed upon sale of the Basket Amount of Portfolio Assets, the Transfer Agent will notify the Sponsor. The Sponsor will then notify the Custodian to transfer the Portfolio Assets to the Digital Asset Trading Counterparty, and the Transfer

Agent will wire the cash proceeds to the Authorized Participant once the Trust's DTC account has been credited with the Shares represented by the Creation Unit from the redeeming Authorized Participant. Once the Authorized Participant has delivered the Shares represented by the Creation Unit to be redeemed to the Trust's DTC account, the Cash Custodian will wire the requisite amount of cash to the Authorized Participant. If the Trust's DTC account has not been credited with all of the Shares of the Creation Unit to be redeemed, the redemption distribution will be delayed until such time as the Transfer Agent confirms receipt of all such Shares. If the Digital Asset Trading Counterparty fails to deliver the cash to the Cash Custodian, the transaction will be cancelled, and no transfer of Portfolio Assets or Shares will occur.

#### Acquiring and Selling Portfolio Assets Pursuant to Creation and Redemption of Shares Under the Agent Execution Model

Under the Agent Execution Model, the Prime Execution Agent, acting in an agency capacity, would conduct Portfolio Assets purchases and sales on behalf of the Trust with third parties through its Coinbase Prime service pursuant to the Prime Execution Agent Agreement. To utilize the Agent Execution Model, the Trust may maintain some Portfolio Assets or cash in the Trading Balance with the Prime Execution Agent. The Prime Execution Agent Agreement provides that the Trust does not have an identifiable claim to any particular Portfolio Assets (and cash); rather, the Trust's Trading Balance represents an entitlement to a pro rata share of the Portfolio Assets (and cash) the Prime Execution Agent holds on behalf of customers who hold similar entitlements against the Prime Execution Agent. In this way, the Trust's Trading Balance represents an omnibus claim on the Prime Execution Agent's Portfolio Assets (and cash) held on behalf of the Prime Execution Agent's customers.

To avoid having to pre-fund purchases or sales of Portfolio Assets in connection with cash creations and redemptions and sales of Portfolio Assets to pay Trust expenses not assumed by the Sponsor, to the extent applicable, the Trust may borrow Portfolio Assets or cash as trade credit ("Trade Credit") from Coinbase Credit, Inc. (the "Trade Credit Lender") on a short-term basis pursuant to the Coinbase Credit Committed Trade Financing Agreement (the "Trade Financing Agreement").

On the day of the Purchase Order Date, the Trust would enter into a transaction to buy Portfolio Assets through the Prime Execution Agent for cash. Because the Trust's Trading Balance may not be funded with cash on the Purchase Order Date for the purchase of Portfolio Assets in connection with the Purchase Order under the Agent Execution Model, the Trust may borrow Trade Credits in the form of cash from the Trade Credit Lender pursuant to the Trade Financing Agreement or may require the Authorized Participant to deliver the required cash for the Purchase Order on the Purchase Order Date. The extension of Trade Credits on the Purchase Order Date allows the Trust to purchase Portfolio Assets through the Prime Execution Agent on the Purchase Order Date, with such Portfolio Assets being deposited in the Trust's Trading Balance.

On the day following the Purchase Order Date (the "Purchase Order Settlement Date"), the Trust would deliver Shares to the Authorized Participant in exchange for cash received from the Authorized Participant. Where applicable, the Trust would use the cash to repay the Trade Credits borrowed from the Trade Credit Lender. On the Purchase Order Settlement Date for a Purchase Order utilizing the Agent Execution Model, the Portfolio Assets associated with the Purchase Order and purchased on the Purchase Order Date is swept from the Trust's Trading Balance with the Prime Execution Agent to the Trust Digital Asset Account with the Custodian pursuant to a regular end-of-day sweep process. Transfers of Portfolio Assets into the Trust's Trading Balance are off-chain transactions and transfers from the Trust's Trading Balance to the Trust Digital Asset Account are "on-chain" transactions represented on the Portfolio Assets blockchains, as applicable. Any financing fee owed to the Trade Credit Lender is deemed part of trade execution costs and embedded in the trade price for each transaction.

For a Redemption Order utilizing the Agent Execution Model, on the day of the Redemption Order Date the Trust would enter into a transaction to sell Portfolio Assets through the Prime Execution Agent for cash. The Trust's Trading Balance with the Prime Execution Agent may not be funded with Portfolio Assets on trade date for the sale of Portfolio Assets in connection with the redemption order under the Agent Execution Model, when Portfolio Assets remains in the Trust Digital Asset Account with the Custodian at the point of intended

execution of a sale of Portfolio Assets. In those circumstances the Trust may borrow Trade Credits in the form of Portfolio Assets from the Trade Credit Lender, which allows the Trust to sell Portfolio Assets through the Prime Execution Agent on the Redemption Order Date, and the cash proceeds are deposited in the Trust's Trading Balance with the Prime Execution Agent. On the business day following the Redemption Order Date (the "Redemption Order Settlement Date") for a redemption order utilizing the Agent Execution Model where Trade Credits were utilized, the Trust delivers cash to the Authorized Participant in exchange for Shares received from the Authorized Participant. In the event Trade Credits were used, the Trust will use the Portfolio Assets that are moved from the Trust Digital Asset Account with the Custodian to the Trading Balance with the Prime Execution Agent to repay the Trade Credits borrowed from the Trade Credit Lender.

For a redemption of Creation Units utilizing the Agent Execution Model, the Sponsor would instruct the Custodian to prepare to transfer the Portfolio Assets associated with the redemption order from the Trust Digital Asset Account with the Custodian to the Trust's Trading Balance with the Prime Execution Agent. On the Redemption Order Settlement Date, the Trust would enter into a transaction to sell Portfolio Assets through the Prime Execution Agent for cash, and the Prime Execution Agent credits the Trust's Trading Balance with the cash. On the same day, the Authorized Participant would deliver the necessary Shares to the Trust and the Trust delivers cash to the Authorized Participant.

#### Applicable Standard

The Commission has historically approved or disapproved exchange filings to list and trade series of Trust Issued Receipts, including spot, Commodity-Based Trust Shares, on the basis of whether the listing exchange has in place a comprehensive surveillance sharing agreement with a regulated market of significant size related to the underlying commodity to be held.<sup>26</sup> However, the Commission

<sup>26</sup> See Securities Exchange Act Release No. 83723 (July 26, 2018), 83 FR 37579 (August 1, 2018) (SR-BatsBZX-2016-30) (Order Setting Aside Action by Delegated Authority and Disapproving a Proposed Rule Change, as Modified by Amendments No. 1 and 2, to List and Trade Shares of the Winklevoss Bitcoin Trust) ("Winklevoss Order"). In the Winklevoss Order, the Commission set forth both the importance and definition of a surveilled, regulated market of significant size, explaining that, for approved commodity-trust ETPs, "there has been in every case at least one significant, regulated

recently approved the listing and trading of shares of spot bitcoin exchange-traded products ("Spot Bitcoin ETPs") and spot ether exchange-traded products ("Spot Ether ETPs"), finding that there were sufficient "other means" of preventing fraud and manipulation sufficient to satisfy the requirements of Section 6(b)(5) of the Exchange Act.<sup>27</sup> In each of the Spot Bitcoin ETP Approval Order and Spot Ether Approval Order, the Commission concluded, through a robust correlation analysis, that fraud or manipulation that impacts prices in spot bitcoin markets or spot ether markets would likely similarly impact CME bitcoin futures prices and CME ether futures prices, respectively.<sup>28</sup> The Commission further found that, because the CME's surveillance can assist in detecting those impacts on CME bitcoin futures prices and CME ether futures prices, a listing exchange's CSSA with the CME can be reasonably expected to assist in surveilling for fraudulent and manipulative acts and practices in the context of the Spot Bitcoin ETPs and Spot Ether ETPs.<sup>29</sup>

The Trust is structured and will operate in a manner materially the same as the Spot Bitcoin ETPs and Spot Ether ETPs.<sup>30</sup> The Sponsor believes that the Exchange's ability to obtain information

market for trading futures on the underlying commodity—whether gold, silver, platinum, palladium, or copper—and the ETP listing exchange has entered into surveillance-sharing agreements with, or held Intermarket Surveillance Group membership in common with, that market." Winklevoss Order, 83 FR at 37594.

<sup>27</sup> See Securities Exchange Act Release No. 34-99306 (January 10, 2024), 89 FR 3008 (January 17, 2024) (SR-NYSEARCA-2021-90; SR-NYSEARCA-2023-44; SRNYSEARCA-2023-58; SR-NASDAQ-2023-016; SR-NASDAQ-2023-019; SR-CboeBZX-2023028; SR-CboeBZX-2023-038; SR-CboeBZX-2023-040; SR-CboeBZX-2023-042; SR-CboeBZX-2023-044; SR-CboeBZX-2023-072) (Order Granting Accelerated Approval of Proposed Rule Changes, as Modified by Amendments Thereto, to List and Trade Bitcoin-Based Commodity-Based Trust Shares and Trust Units) (the "Spot Bitcoin ETP Approval Order"); Securities Exchange Act Release No. 100224 (May 23, 2024), 89 FR 46937 (May 30, 2024) (SR-NYSEARCA-2023-70; SR-NYSEARCA-2024-31; SR-NASDAQ-2023-045; SR-CboeBZX-2023-069; SR-CboeBZX-2023-070; SR-CboeBZX-2023-087; SR-CboeBZX-2023-095; SR-CboeBZX-2024-018) (Order Granting Accelerated Approval of Proposed Rule Changes, as Modified by Amendments Thereto, to List and Trade Shares of Ether-Based Exchange-Traded Products) (the "Spot Ether ETP Approval Order").

<sup>28</sup> See Spot Bitcoin ETP Approval Order, 89 FR at 3010; Spot Ether ETP Approval Order, 89 FR at 46938.

<sup>29</sup> See Spot Bitcoin ETP Approval Order, 89 FR at 3010; Spot Ether ETP Approval Order, 89 FR at 46938-39.

<sup>30</sup> The Sponsor is also the sponsor of the Bitwise Bitcoin ETP and the Bitwise Ethereum ETF, which were approved pursuant to the Spot Bitcoin ETP Approval Order and Spot Ether ETP Approval, respectively, and which are both currently listed and traded on NYSE Arca.

regarding trading in bitcoin futures and ether futures from the CME, which, like the Exchange, is a member of the ISG, would assist the Exchange in detecting potential fraud or manipulation with respect to trading in the Shares. The Sponsor thus believes that, for reasons similar to those set forth in the Spot Bitcoin ETP Approval Order and Spot Ether ETP Approval Order, listing and trading Shares of the Trust would be consistent with the requirements of the Act.

The Sponsor acknowledges that the Portfolio Assets currently include minority positions in digital assets that are not bitcoin or ether. The Sponsor also represents that, consistent with proposed Rule 8.800–E(c)(1), no more than 10% of the weight of its digital asset holdings will consist of digital assets concerning which the Exchange may not be able to obtain information via the ISG or via a CSSA. In the context of prior spot digital asset ETP proposal disapproval orders for bitcoin and ether, the Commission expressed concerns about the underlying digital asset market due to the potential for fraud and manipulation and has outlined the reasons why such ETP proposals have been unable to satisfy these concerns.<sup>31</sup> For purposes of the Trust’s proposal, the Sponsor anticipates that the Commission may have the same

concerns about digital assets other than bitcoin and ether.

The Commission has recognized that a listing exchange could demonstrate that other means to prevent fraudulent and manipulative acts and practices are sufficient to justify dispensing with the requisite surveillance-sharing agreement.<sup>32</sup> In evaluating the effectiveness of this type of resistance, the Commission does not apply a “cannot be manipulated” standard. Instead, the Commission requires that such resistance to fraud and manipulation be novel and beyond those protections that exist in traditional commodity markets or equity markets for which the Commission has long required surveillance-sharing agreements in the context of listing derivative securities products.<sup>33</sup> The Sponsor believes the Trust’s use of the Reference Prices provided by the Valuation Vendor to value the Trust’s holdings and to determine NAV and ITV for the Trust, in tandem with the Trust’s cash create and redeem structure represents a novel means to prevent fraud and manipulation from impacting the price of the Shares, by offering protections beyond those that exist in traditional commodity markets and consistent with those that exist in equity markets.

As described in more detail below, the Sponsor believes that its use of Reference Prices accomplishes these objectives in the following ways:

1. The Valuation Vendor calculates the Reference Prices for the Portfolio Assets exclusively through trading activity on spot digital asset trading platforms that are “CME CF Constituent Trading Platforms.”

CME CF Constituent Trading Platforms are identified by the Valuation Vendor and must meet the following eligibility criteria, as determined by the Valuation Vendor:

- The average daily volume of the venue’s Relevant Pair<sup>34</sup> spot trading contributed during the observation window for the Reference Price (*i.e.*, 3:00 p.m. to 4:00 p.m. E.T.) must exceed 3% for two consecutive calendar quarters.
- The venue has policies to ensure fair and transparent market conditions at all times and has processes in place to identify and impede illegal, unfair, or manipulative trading practices.

- The venue does not impose undue barriers to entry or restrictions on market participants, and utilizing the venue does not expose market participants to undue credit risk, operational risk, legal risk, or other risks.

- The venue complies with applicable laws and regulations, including, but not limited to capital markets regulations, money transmission regulations, client money custody regulations, know-your-client (KYC) regulations, and anti-money laundering (AML) regulations.

- The venue cooperates with inquiries and investigations of regulators and the Administrator upon request and must execute data sharing agreements with the CME Group.

Continued compliance with these criteria is reviewed on an annual basis by an independent committee, the CME CF Oversight Committee, and the Valuation Vendor’s trading platform selection process has been continuously audited since 2020.<sup>35</sup> As of the date of this filing, the CME CF Constituent Trading Platforms are Bitstamp, Coinbase, Gemini, Kraken, itBit and LMAX Digital.<sup>36</sup> The Sponsor believes that the Valuation Vendor’s enforcement of the rigorous criteria applicable to the CME CF Constituent Trading Platforms effectively acts as a first line of defense against manipulation of the Shares by ensuring that only data from spot trading platforms equipped to detect and impede market manipulation is included in the calculation of the Reference Prices that will determine the Trust’s NAV and ITV.

2. The Reference Prices are administered and provided by the Valuation Vendor, which is an Administrator of Benchmarks under the UK Benchmarks Regime (“BMR”).

The Valuation Vendor received its regulatory authorization in 2019 and has held this regulatory authorization continuously since then. The Valuation Vendor’s compliance with the BMR’s comprehensive regulation of financial benchmarks has been audited since 2020.<sup>37</sup> The Sponsor believes that the Valuation Vendor is the leading provider of benchmarks and indices for regulated financial products that reference digital assets in the US and

<sup>31</sup> See Securities Exchange Act Release Nos. 83723 (July 26, 2018), 83 FR 37579 (August 1, 2018) (SR–BatsBZX–2016–30) (Order Setting Aside Action by Delegated Authority and Disapproving a Proposed Rule Change, as Modified by Amendments No. 1 and 2, To List and Trade Shares of the Winklevoss Bitcoin Fund) (the “Winklevoss Order”); 87267 (October 9, 2019), 84 FR 55382 (October 16, 2019) (SR–NYSEArca–2019–01) (Order Disapproving a Proposed Rule Change, as Modified by Amendment No. 1, Relating to the Listing and Trading of Shares of the Bitwise Bitcoin ETF Fund Under NYSE Arca Rule 8.201–E) (the “Bitwise Order”); 88284 (February 26, 2020), 85 FR 12595 (March 3, 2020) (SR–NYSEArca–2019–39) (Order Disapproving a Proposed Rule Change, as Modified by Amendment No. 1, to Amend NYSE Arca Rule 8.201–E (Commodity-Based Trust Shares) and to List and Trade Shares of the United States Bitcoin and Treasury Investment Trust Under NYSE Arca Rule 8.201–E) (the “Wilshire Phoenix Order”); 83904 (August 22, 2018), 83 FR 43934 (August 28, 2018) (SR–NYSEArca–2017–139) (Order Disapproving a Proposed Rule Change to List and Trade the Shares of the ProShares Bitcoin ETF and the ProShares Short Bitcoin ETF); 83912 (August 22, 2018), 83 FR 43912 (August 28, 2018) (SR–NYSEArca–2018–02) (Order Disapproving a Proposed Rule Change Relating to Listing and Trading of the Direxion Daily Bitcoin Bear 1X Shares, Direxion Daily Bitcoin 1.25X Bull Shares, Direxion Daily Bitcoin 1.5X Bull Shares, Direxion Daily Bitcoin 2X Bull Shares, and Direxion Daily Bitcoin 2X Bear Shares Under NYSE Arca Rule 8.200–E); 83913 (August 22, 2018), 83 FR 43923 (August 28, 2018) (SR–CboeBZX–2018–01) (Order Disapproving a Proposed Rule Change to List and Trade the Shares of the GraniteShares Bitcoin ETF and the GraniteShares Short Bitcoin ETF).

<sup>32</sup> See Winklevoss Order, 84 FR 37580, 37582–91; Bitwise Order, 84 FR 55383, 55385–406; Wilshire Phoenix Order, 85 FR 12597.

<sup>33</sup> See Winklevoss Order, 84 FR 37582; Wilshire Phoenix Order, 85 FR 12597.

<sup>34</sup> Relevant Pair is defined as each Portfolio Asset versus the quote for that asset in U.S. Dollar terms.

<sup>35</sup> The latest IASE 300 Reasonable Assurance Auditors Report by KPMG is publicly available on the Valuation Vendor’s website: <https://www.cfbenchmarks.com/legal/audit>.

<sup>36</sup> The Sponsor notes that, given the rigorous application of the selection criteria described above, the list of CME CF Constituent Exchanges has never included FTX.com, FTX.US, Binance.com, or Binance.US.

<sup>37</sup> See note 35, *supra*.

internationally. Reference prices provided by the Valuation Vendor underpin derivatives contracts regulated by the Commodity Futures Trading Commission and listed by CME Group, as well as exchange-traded funds offered by BlackRock, Franklin Templeton, and the Sponsor under the regulatory purview of the Commission. In addition, to ensure compliance with BMR Article 14, the Valuation Vendor conducts surveillance of its benchmarks. When a surveillance alert is triggered, the Valuation Vendor conducts an investigation, including seeking further information from CME CF Constituent Trading Platforms. Each such investigation is memorialized in a report shared with the CME CF Cryptocurrency Committee. The UK Financial Conduct Authority (“FCA”) has regulatory oversight of this process, which is also subject to audit. The Sponsor believes that the Valuation Vendor’s robust surveillance efforts would allow it to promptly address manipulation or attempted manipulation of Reference Prices through a regulatory filing with the UK FCA and, accordingly, that this surveillance of the underlying spot trading platforms constitutes a second line of defense against manipulation in the Shares.

3. The Valuation Vendor has in place information sharing agreements with the CME CF Constituent Trading Platforms, from which it draws pricing data to construct its benchmarks.

These agreements allow the Valuation Vendor to the obtain identifying information of any perpetrators of actual or attempted benchmark manipulation of any Reference Prices from the CME CF Constituent Trading Platforms. This identifying information can then be shared with the UK FCA for potential enforcement action under the provisions of the Market Abuse Regime (MAR), which specifically proscribes benchmark manipulation as a criminal offense in the UK. The Sponsor believes that the availability of this information to the Valuation Vendor supports enforcement and sanction efforts in response to actual or attempted manipulation in digital asset markets, and provides a third line of defense against any potential manipulation in the Shares.

\* \* \* \* \*

Finally, the Sponsor believes that the cash creation and redemption structure of the Trust also underscores the protections that the Reference Prices afford to the Trust. The Trust’s Shares will have their NAV and ITV determined by the Reference Prices and because all shares in the Trust will be

created and redeemed and secondary traded with cash (not physical digital assets), any attempts to manipulate Shares would have to involve transactions on the spot trading platforms that are CME CF Constituent Trading Platforms to be able to influence the price of the Shares. The Sponsor believes that the Valuation Vendor’s surveillance of the CME CF Constituent Trading Platforms to detect such activity and the information sharing mechanisms in place between the Valuation Vendor and the CME CF Constituent Trading Platforms would both deter such activity and facilitate enforcement action should it occur.

#### Availability of Information

The Trust’s website (<https://www.bitwiseinvestments.com/>) will include quantitative information on a per Share basis updated on a daily basis, including, (i) the current NAV per Share daily and the prior Business Day’s NAV per Share and the reported closing price of the Shares; (ii) the mid-point of the bid-ask price<sup>38</sup> as of the time the NAV per Share is calculated (“Bid-Ask Price”) and a calculation of the premium or discount of such price against such NAV per Share; and (iii) data in chart format displaying the frequency distribution of discounts and premiums of the daily Bid-Ask Price against the NAV per Share, within appropriate ranges, for each of the four previous calendar quarters (or for as long as the Trust has been trading as an ETP if shorter). In addition, on each business day the Trust’s website will provide pricing information for the Shares and disclosed the Trust’s holdings, including: (i) the name of each Portfolio Asset; (ii) the quantity of each Portfolio Asset; and (iii) the weighting of each Portfolio Asset.

One or more major market data vendors will provide the ITV per Share updated every 15 seconds, as calculated by the Exchange or a third party financial data provider during the Exchange’s Core Trading Session (9:30 a.m. to 4:00 p.m. E.T.).<sup>39</sup> The ITV will be calculated using the same methodology as the NAV per Share of the Trust (as described above), specifically by using the prior day’s closing NAV per Share as a base and updating that value during the NYSE Arca Core Trading Session to reflect

<sup>38</sup> The bid-ask price of the Fund is determined using the highest bid and lowest offer on the Consolidated Tape as of the time of calculation of the closing day NAV.

<sup>39</sup> The ITV on a per Share basis disseminated during the NYSE Arca Core Trading Session should not be viewed as a real-time update of the NAV, which is calculated once a day.

changes in the value of the Trust’s NAV during the trading day.

The ITV disseminated during the NYSE Arca Core Trading Session should not be viewed as an actual real-time update of the NAV per Share, which will be calculated only once at the end of each trading day. The ITV will be widely disseminated on a per Share basis every 15 seconds during the NYSE Arca Core Trading Session by one or more major market data vendors. In addition, the ITV will be available through on-line information services.

The NAV for the Trust will be calculated by the Administrator once a day and will be disseminated daily to all market participants at the same time. Quotation and last-sale information regarding the Shares will be disseminated through the facilities of the Consolidated Tape Association (“CTA”).

Quotation and last sale information for the Portfolio Assets will be widely disseminated through a variety of major market data vendors. In addition, real-time price (and volume) data for the Portfolio Assets is available by subscription major market data vendors. The spot price of the Portfolio Assets is available on a 24-hour basis from major market data vendors. Information relating to trading, including price and volume information, will be available from major market data vendors and from the trading platforms on which the Portfolio Assets are traded. The normal trading hours for digital asset trading platforms are 24-hours per day, 365-days per year.

On each business day, the Sponsor will publish the Reference Prices, the Trust’s NAV, and the NAV per Share on the Trust’s website as soon as practicable after its determination. If the NAV and NAV per Share have been calculated using a price per Portfolio other than the Reference Prices, the publication on the Trust’s website will note the valuation methodology used and the price per Portfolio Asset resulting from such calculation.

The Trust will provide website disclosure of its NAV daily. The website disclosure of the Trust’s NAV will occur at the same time as the disclosure by the Administrator of the NAV to Authorized Participants so that all market participants are provided such portfolio information at the same time. Therefore, the same portfolio information will be provided on the public website as well as in electronic files provided to Authorized Participants. Accordingly, each investor will have access to the current NAV of the Trust through the Trust’s website, as well as from one or more major market data vendors.



The value of the Index, as well as additional information regarding the Index such as the Index Methodology, is publicly available on a continuous basis on the Index Provider's website.

#### Trading Halts

With respect to trading halts, the Exchange may consider all relevant factors in exercising its discretion to halt or suspend trading in the Shares of the Trust.<sup>40</sup> Trading in Shares of the Trust will be halted if the circuit breaker parameters in NYSE Arca Rule 7.12–E have been reached. Trading also may be halted because of market conditions or for reasons that, in the view of the Exchange, make trading in the Shares inadvisable.

The Exchange may halt trading during the day in which an interruption to the dissemination of the ITV or Index occurs.<sup>41</sup> If the interruption to the dissemination of the ITV or Index persists past the trading day in which it occurred, the Exchange will halt trading no later than the beginning of the Core Trading Session following the interruption. In addition, if the Exchange becomes aware that the NAV with respect to the Shares is not disseminated to all market participants at the same time, it will halt trading in the Shares until such time as the NAV is available to all market participants.

#### Trading Rules

The Exchange deems the Shares to be equity securities, thus rendering trading in the Shares subject to the Exchange's existing rules governing the trading of equity securities. Shares will trade on the NYSE Arca Marketplace from 4:00 a.m. to 8:00 p.m. E.T. in accordance with NYSE Arca Rule 7.34–E (Early, Core, and Late Trading Sessions). The Exchange has appropriate rules to facilitate transactions in the Shares during all trading sessions. As provided in NYSE Arca Rule 7.6–E, the minimum price variation ("MPV") for quoting and entry of orders in equity securities traded on the NYSE Arca Marketplace is \$0.01, with the exception of securities that are priced less than \$1.00 for which the MPV for order entry is \$0.0001.

The Shares will conform to the initial and continued listing criteria under NYSE Arca Rule 8.800–E, as proposed. The trading of the Shares will be subject to proposed NYSE Arca Rule 8.800–E(i), which sets forth certain restrictions on Equity Trading Permit Holders ("ETP Holders") acting as registered Market

Makers in Commodity-Based Trust Shares to facilitate surveillance.<sup>42</sup> The Exchange represents that, for initial and continued listing, the Trust will be in compliance with Rule 10A–3 under the Act,<sup>43</sup> as provided by NYSE Arca Rule 5.3–E. A minimum of 100,000 Shares of the Trust will be outstanding at the commencement of trading on the Exchange.

#### Surveillance

The Exchange represents that trading in the Shares of the Trust will be subject to the existing trading surveillances administered by the Exchange, as well as cross-market surveillances administered by FINRA on behalf of the Exchange, which are designed to detect violations of Exchange rules and applicable federal securities laws.<sup>44</sup> The Exchange represents that these procedures are adequate to properly monitor Exchange trading of the Shares in all trading sessions and to deter and detect violations of Exchange rules and federal securities laws applicable to trading on the Exchange.

The surveillances referred to above generally focus on detecting securities trading outside their normal patterns, which could be indicative of manipulative or other violative activity. When such situations are detected, surveillance analysis follows and investigations are opened, where appropriate, to review the behavior of all relevant parties for all relevant trading violations.

<sup>42</sup> Under NYSE Arca Rule 8.201–E(g), an ETP Holder acting as a registered Market Maker in the Shares is required to provide the Exchange with information relating to its accounts for trading in the underlying commodity, related futures or options on futures, or any other related derivatives. Commentary .04 of NYSE Arca Rule 11.3–E requires an ETP Holder acting as a registered Market Maker, and its affiliates, in the Shares to establish, maintain and enforce written policies and procedures reasonably designed to prevent the misuse of any material nonpublic information with respect to such products, any components of the related products, any physical asset or commodity underlying the product, applicable currencies, underlying indexes, related futures or options on futures, and any related derivative instruments (including the Shares). As a general matter, the Exchange has regulatory jurisdiction over its ETP Holders and their associated persons, which include any person or entity controlling an ETP Holder. To the extent the Exchange may be found to lack jurisdiction over a subsidiary or affiliate of an ETP Holder that does business only in commodities or futures contracts, the Exchange could obtain information regarding the activities of such subsidiary or affiliate through surveillance sharing agreements with regulatory organizations of which such subsidiary or affiliate is a member.

<sup>43</sup> 17 CFR 240.10A–3. See note 8, *supra*.

<sup>44</sup> FINRA conducts cross-market surveillances on behalf of the Exchange pursuant to a regulatory services agreement. The Exchange is responsible for FINRA's performance under this regulatory services agreement.

The Exchange or FINRA, on behalf of the Exchange, or both, will communicate as needed regarding trading in the Shares with other markets and other entities that are members of the ISG, and the Exchange or FINRA, on behalf of the Exchange, or both, may obtain trading information regarding trading in the Shares from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Shares from markets and other entities that are members of ISG or with which the Exchange has in place a CSSA.<sup>45</sup> The Exchange is also able to obtain information regarding trading in the Shares in connection with such ETP Holders' proprietary or customer trades which they effect through ETP Holders on any relevant market.

Under proposed Rule 8.800–E(i), an ETP Holder acting as a registered Market Maker in the Shares is required to provide the Exchange with information relating to its accounts for trading in any underlying commodity, related futures or options on futures, or any other related derivatives. Commentary .04 of NYSE Arca Rule 11.3–E requires an ETP Holder acting as a registered Market Maker, and its affiliates, in the Shares to establish, maintain and enforce written policies and procedures reasonably designed to prevent the misuse of any material nonpublic information with respect to such products, any components of the related products, any physical asset or commodity underlying the product, applicable currencies, underlying indexes, related futures or options on futures, and any related derivative instruments (including the Shares). As a general matter, the Exchange has regulatory jurisdiction over its ETP Holders and their associated persons, which include any person or entity controlling an ETP Holder. To the extent the Exchange may be found to lack jurisdiction over a subsidiary or affiliate of an ETP Holder that does business only in commodities or futures contracts and that subsidiary or affiliate is a member of another regulatory organization, the Exchange could obtain information regarding the activities of such subsidiary or affiliate through a surveillance sharing

<sup>45</sup> For a list of the current members of ISG, see [www.isgportal.org](http://www.isgportal.org). The Exchange notes that not all Portfolio Assets may trade on markets that are members of ISG or with which the Exchange has in place a CSSA, but that, consistent with proposed Rule 8.800–E(c)(1), at least 90% of the Trust's commodity and/or digital asset holdings will consist of commodities and/or digital assets concerning which the Exchange may obtain information via the ISG, from other members of the ISG, or via a CSSA.

<sup>40</sup> See NYSE Arca Rule 7.12–E.

<sup>41</sup> A limit up/limit down condition in the futures market would not be considered an interruption requiring the Trust to be halted.

agreement with that regulatory organization.

In addition, the Exchange also has a general policy prohibiting the distribution of material, non-public information by its employees.

All statements and representations made in this filing regarding (a) the description of the portfolios of the Trust, (b) limitations on portfolio holdings or reference assets, or (c) the applicability of Exchange listing rules specified in this rule filing shall constitute continued listing requirements for listing the Shares on the Exchange.

The Sponsor has represented to the Exchange that it will advise the Exchange of any failure by the Trust to comply with the continued listing requirements, and, pursuant to its obligations under Section 19(g)(1) of the Act, the Exchange will monitor for compliance with the continued listing requirements. If the Trust is not in compliance with the applicable listing requirements, the Exchange will commence delisting procedures under NYSE Arca Rule 5.5–E(m).

#### Information Bulletin

Prior to the commencement of trading, the Exchange will inform its ETP Holders in an “Information Bulletin” of the special characteristics and risks associated with trading the Shares. Specifically, the Information Bulletin will discuss the following: (1) the procedures for creations of Shares in Creation Units; (2) NYSE Arca Rule 9.2–E(a), which imposes a duty of due diligence on its ETP Holders to learn the essential facts relating to every customer prior to trading the Shares; (3) information regarding how the value of the ITV and NAV is disseminated; (4) the possibility that trading spreads and the resulting premium or discount on the Shares may widen during the Opening and Late Trading Sessions, when an updated ITV will not be calculated or publicly disseminated; (5) the requirement that members deliver a prospectus to investors purchasing newly issued Shares prior to or concurrently with the confirmation of a transaction and (6) trading information.

In addition, the Information Bulletin will reference that the Trust is subject to various fees and expenses as described in the annual report. The Information Bulletin will disclose that information about the Shares of the Trust is publicly available on the Trust’s website.

The Information Bulletin will also discuss any relief, if granted, by the Commission or the staff from any rules under the Act.

#### 2. Statutory Basis

The basis under the Act for this proposed rule change is the requirement under Section 6(b)(5)<sup>46</sup> that an exchange have rules that are designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to remove impediments to, and perfect the mechanism of a free and open market and, in general, to protect investors and the public interest.

The Exchange believes that the proposed rule change is designed to prevent fraudulent and manipulative acts and practices in that the Shares will be listed and traded on the Exchange pursuant to the initial and continued listing criteria in proposed NYSE Arca Rule 8.800–E. The Exchange has in place surveillance procedures that are adequate to properly monitor trading in the Shares in all trading sessions and to deter and detect violations of Exchange rules and applicable federal securities laws. The Exchange or FINRA, on behalf of the Exchange, or both, will communicate as needed regarding trading in the Shares with other markets that are members of the ISG, and the Exchange or FINRA, on behalf of the Exchange, or both, may obtain trading information regarding trading in the Shares and Portfolio Asset derivatives from such markets. In addition, the Exchange may obtain information regarding trading in the Shares and Portfolio Asset derivatives from markets that are members of ISG or with which the Exchange has in place a CSSA. Also, pursuant to proposed NYSE Arca Rule 8.800–E(i), the Exchange is able to obtain information regarding Market Maker accounts for trading in the Shares and the underlying Portfolio Assets or any Portfolio Asset derivatives through ETP Holders acting as registered Market Makers, in connection with such ETP Holders’ proprietary or customer trades through ETP Holders which they effect on any relevant market.

The proposed rule change is also designed to prevent fraudulent and manipulative acts and practices because the Trust is structured similarly to and will operate in materially the same manner as the Spot Bitcoin ETPs and Spot Ether ETPs previously approved by the Commission. The Exchange further believes that the proposed rule change is designed to prevent fraudulent and manipulative acts and practices because, as noted by the Commission in the Bitcoin ETP Approval Order and Ether ETP Approval Order, the Exchange’s ability to obtain information

regarding trading in the Shares and futures from other markets that are members of the ISG (including the CME) would assist the Exchange in detecting and deterring misconduct. In particular, the CME bitcoin futures market and CME ether futures market are large, surveilled, and regulated markets that are closely connected with the spot markets for bitcoin and ether, respectively, through which the Exchange could obtain information to assist in detecting and deterring potential fraud or manipulation.

The proposed rule change is also designed to prevent fraudulent and manipulative acts and practices because the Trust’s use of Reference Prices to calculate its NAV serves as a means sufficient to mitigate the impact of instances of fraud and manipulation on a reference price for the Portfolio Assets. As noted above, the Reference Prices for the Portfolio Assets are calculated by the Valuation Vendor based exclusively on trading activity at the CME CF Constituent Trading Platforms, each of which must meet robust eligibility criteria designed to protect the Reference Prices against fraud and manipulation. In addition, the Valuation Vendor is an Administrator of Benchmarks under the BMR that, among other things, conducts surveillance of its benchmarks to detect and investigate potential manipulation. The Valuation Vendor also has information sharing agreements with each of the CME CF Constituent Trading Platforms that support access to identifying information for perpetrators of actual or attempted manipulation to aid in pursuing regulatory action against those actors. The layers of defense provided by the Trust’s use of Reference Prices to calculate NAV, in conjunction with the Trust’s use of cash creations and redemptions, constitute a novel means to detect, prevent, and respond to fraud, attempted fraud, and similar wrongdoing, including market manipulation, consistent with the requirements of the Act.

The proposed rule change is designed to promote just and equitable principles of trade and to protect investors and the public interest in that there is a considerable amount of price and market information available on public websites and through professional and subscription services for the Portfolio Assets. Investors may obtain, on a 24-hour basis, Portfolio Asset pricing information based on the spot price for the Portfolio Assets from various financial information service providers. The closing price and settlement prices of the Portfolio Assets are readily available from the Valuation Trading

<sup>46</sup> 15 U.S.C. 78f(b)(5).

Platforms and other publicly available websites. In addition, such prices are published in public sources, or on-line information services such as Bloomberg and Reuters. The NAV per Share will be calculated daily and made available to all market participants at the same time. The Trust will provide website disclosure of its NAV daily. One or more major market data vendors will disseminate for the Trust on a daily basis information with respect to the most recent NAV per Share and Shares outstanding. In addition, if the Exchange becomes aware that the NAV per Share is not disseminated to all market participants at the same time, it will halt trading in the Shares until such time as the NAV is available to all market participants. Quotation and last-sale information regarding the Shares will be disseminated through the facilities of the CTA. The ITV will be widely disseminated on a per Share basis every 15 seconds during the NYSE Arca Core Trading Session (normally 9:30 a.m. E.T. to 4:00 p.m. E.T.) by one or more major market data vendors. The Exchange represents that the Exchange may halt trading during the day in which an interruption to the dissemination of the ITV or the value of the Index occurs. If the interruption to the dissemination of the ITV or the value of the Index persists past the trading day in which it occurred, the Exchange will halt trading no later than the beginning of the NYSE Arca Core Trading Session on the trading day following the interruption.

The proposed rule change is designed to perfect the mechanism of a free and open market and, in general, to protect investors and the public interest in that it will facilitate the listing and trading of an additional type of exchange-traded product that will enhance competition among market participants, to the benefit of investors and the marketplace. As noted above, the Exchange has in place surveillance procedures relating to trading in the Shares and may obtain information via ISG from other exchanges that are members of ISG or with which the Exchange has entered into a CSSA for at least 90% of the Trust's commodity and/or digital asset holdings. In addition, as noted above, investors will have ready access to information regarding the Trust's NAV, ITV, and quotation and last sale information for the Shares.

#### *B. Self-Regulatory Organization's Statement on Burden on Competition*

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance

of the purposes of the Act. The Exchange notes that the proposed rule change will facilitate the listing and trading of an additional type of exchange-traded product that would enhance competition among market participants, to the benefit of investors and the marketplace.

#### *C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

No written comments were solicited or received with respect to the proposed rule change.

### **III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

Within 45 days of the date of publication of this notice in the **Federal Register** or within such longer period up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the self-regulatory organization consents, the Commission will:

- (A) by order approve or disapprove the proposed rule change, or
- (B) institute proceedings to determine whether the proposed rule change should be disapproved.

### **IV. Solicitation of Comments**

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

#### *Electronic Comments*

- Use the Commission's internet comment form (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include file number SR-NYSEARCA-2024-98 on the subject line.

#### *Paper Comments*

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090. All submissions should refer to file number SR-NYSEARCA-2024-98. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (<https://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent

amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-NYSEARCA-2024-98 and should be submitted on or before December 24, 2024.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>47</sup>

**Stephanie J. Fouse,**  
*Assistant Secretary.*

[FR Doc. 2024-28343 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

## **SECURITIES AND EXCHANGE COMMISSION**

[Release No. 34-101776; File No. SR-Phlx-2024-63]

### **Self-Regulatory Organizations; Nasdaq PHLX LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Remove Rules Related to the Nasdaq-100® Volatility Index**

November 27, 2024.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act"),<sup>1</sup> and Rule 19b-4 thereunder,<sup>2</sup> notice is hereby given that on November 21, 2024, Nasdaq PHLX LLC ("Phlx" or "Exchange") filed with the Securities and Exchange Commission ("Commission") a proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit

<sup>47</sup> 17 CFR 200.30-3(a)(12).

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

comments on the proposed rule change from interested persons.

### **I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change**

The Exchange proposes to remove rule text related to the listing of options on the Nasdaq-100<sup>®</sup> Volatility Index.

The text of the proposed rule change is available on the Exchange's website at <https://listingcenter.nasdaq.com/rulebook/phlx/rules>, at the principal office of the Exchange, and at the Commission's Public Reference Room.

### **II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change**

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

#### *A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change*

##### **1. Purpose**

The Exchange proposes to amend various rules to remove references to the listing of options on the Nasdaq-100<sup>®</sup> Volatility Index.<sup>3</sup>

In 2021, Phlx received approval<sup>4</sup> to list and trade options on VOLQ. Phlx subsequently received approval<sup>5</sup> to amend the calculation of its final settlement price for options on VOLQ. Phlx launched VOLQ options on June

<sup>3</sup> VOLQ is a proprietary index product. The VOLQ options index product measured "at-the-money" volatility, a precise measure of volatility used by investors. Specifically, VOLQ options measured changes in 30-day implied volatility of the Nasdaq-100 Index (commonly known as and referred to by its ticker symbol, NDX).

<sup>4</sup> See Securities Exchange Act Release No. 91781 (May 5, 2021), 86 FR 25918 (May 11, 2021) (SR-Phlx-2020-41) (Notice of Filing of Amendment Nos. 1 and 2 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1 and 2, To List and Trade Options on a Nasdaq-100 Volatility Index) ("VOLQ Options Approval Order").

<sup>5</sup> See Securities Exchange Act Release No. 93628 (November 19, 2021), 86 FR 67555 (November 26, 2021) (SR-Phlx-2021-56) (Order Approving a Proposed Rule Change To Amend Options 4A, Section 12 Regarding the Calculation of the Closing Volume Weighted Average Price for Options on the Nasdaq-100 Volatility Index in Certain Circumstances) ("Amendment to VOLQ Options").

14, 2022.<sup>6</sup> On May 18, 2023, Phlx delisted options on VOLQ and the Exchange does not have plans to re-list VOLQ options in the foreseeable future. There is no open interest in VOLQ at this time. The Exchange proposes to delete all references to VOLQ options to provide greater clarity to members and member organizations and the public regarding the Exchange's offerings and Rulebook.

Specifically, the Exchange proposes to delete references to the Nasdaq-100<sup>®</sup> Volatility Index or "VOLQ" in Options 3, Section 1, Hours of Business; and Options 4A Rules at: Section 2, Definitions;<sup>7</sup> Section 6, Position Limits; and Section 12, Terms of Index Options Contracts. The Exchange also proposes to remove pricing in Options 7, Pricing Schedule, at Section 5, Index and Singly Listed Options (Includes options overlying FX Options, equities, ETFs, ETNs, and indexes not listed on another exchange).

##### **2. Statutory Basis**

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,<sup>8</sup> in general, and furthers the objectives of Section 6(b)(5) of the Act,<sup>9</sup> in particular, in that it is designed to promote just and equitable principles of trade, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general to protect investors and the public interest.

Phlx's proposal to remove references to the Nasdaq-100<sup>®</sup> Volatility Index or "VOLQ" in Phlx Rules is consistent with the Act as Phlx delisted options on VOLQ in 2023 and there is no open interest in VOLQ options at this time. Further, the Exchange does not have plans to re-list VOLQ options in the foreseeable future. The Exchange proposes to delete all references to VOLQ options to provide greater clarity to members and member organizations and the public regarding the Exchange's offerings and Rulebook.

#### *B. Self-Regulatory Organization's Statement on Burden on Competition*

The proposed rule change does not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

The Exchange's proposal to remove references to the Nasdaq-100<sup>®</sup> Volatility Index or "VOLQ" in Phlx Rules does

<sup>6</sup> See Options Trader Alert #2022-16 (<http://www.nasdaqtrader.com/MicroNews.aspx?id=OTA2022-16>).

<sup>7</sup> The Exchange proposes to remove a stray period after the title "Definitions."

<sup>8</sup> 15 U.S.C. 78f(b)

<sup>9</sup> 15 U.S.C. 78f(b)(5).

not impose an undue burden on intra-market competition as, today, no member or member organization is able to options on VOLQ or will be able to trade options on VOLQ in the future.

The Exchange's proposal to remove references to the Nasdaq-100<sup>®</sup> Volatility Index or "VOLQ" in Phlx Rules does not impose an undue burden on inter-market competition as VOLQ options was a proprietary product of Nasdaq, Inc. and singly listed on Phlx. Other options markets can develop a similar index options product on their market.

#### *C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

No written comments were either solicited or received.

### **III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

Because the foregoing proposed rule change does not: (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A)(iii) of the Act<sup>10</sup> and subparagraph (f)(6) of Rule 19b-4 thereunder.<sup>11</sup>

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

### **IV. Solicitation of Comments**

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

<sup>10</sup> 15 U.S.C. 78s(b)(3)(A)(iii).

<sup>11</sup> 17 CFR 240.19b-4(f)(6). In addition, Rule 19b-4(f)(6) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

*Electronic Comments*

- Use the Commission's internet comment form (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include file number SR-Phlx-2024-63 on the subject line.

*Paper Comments*

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090.

All submissions should refer to file number SR-Phlx-2024-63. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (<https://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-Phlx-2024-63 and should be submitted on or before December 24, 2024.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>12</sup>

**Stephanie J. Fouse,**  
*Assistant Secretary.*

[FR Doc. 2024-28344 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

**SECURITIES AND EXCHANGE COMMISSION**

[Release No. 34-101758; File No. SR-NYSEARCA-2024-102]

**Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Modify the NYSE Arca Options Fee Schedule**

November 26, 2024.

Pursuant to Section 19(b)(1)<sup>1</sup> of the Securities Exchange Act of 1934 ("Act")<sup>2</sup> and Rule 19b-4 thereunder,<sup>3</sup> notice is hereby given that, on November 21, 2024, NYSE Arca, Inc. ("NYSE Arca" or the "Exchange") filed with the Securities and Exchange Commission (the "Commission") the proposed rule change as described in Items I and II below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

**I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change**

The Exchange proposes to modify the NYSE Arca Options Fee Schedule ("Fee Schedule") regarding incentives available to Market Makers. The Exchange proposes to implement the fee change effective November 21, 2024.<sup>4</sup> The proposed rule change is available on the Exchange's website at [www.nyse.com](http://www.nyse.com), at the principal office of the Exchange, and at the Commission's Public Reference Room.

**II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change**

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant parts of such statements.

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 15 U.S.C. 78a.

<sup>3</sup> 17 CFR 240.19b-4.

<sup>4</sup> On November 1, 2024, the Exchange filed to amend the Fee Schedule (NYSEARCA-2024-93) and withdrew such filing on November 15, 2024 (NYSEARCA-2024-99), which latter filing the Exchange withdrew on November 21, 2024.

*A. Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change*

1. Purpose

The purpose of this filing is to amend the Fee Schedule to modify certain incentives intended to encourage Market Maker posted volume. The Exchange proposes to implement the fee change on November 21, 2024.

Currently, the Fee Schedule provides a variety of incentives to encourage greater participation by Market Makers and Market Maker affiliates, including more favorable rates for higher volumes from posted interest (e.g., the Market Maker Incentive For Non-Penny Interval Issues and the Market Maker Incentives for SPY). The Exchange also offers incentives that reward higher volume from posted interest in conjunction with activity in the NYSE Arca Equity Market (for purposes of this filing, activity in the NYSE Arca Equity Market is referred to as "cross asset activity").

The Exchange proposes to modify the Market Maker Penny and SPY Posting Credit Tiers (the "Market Maker Penny Tiers")<sup>5</sup> by creating two new tiers (described below) that would replace the current "Additional Credit" per contract credit of (\$0.03) on Market Maker posted interest that is available to OTP Holder or OTP Firm (collectively, "OTP Holders") that qualify for either Super Tier.

Pursuant to the Fee Schedule, to qualify for the Additional Credit, eligible OTP Holders must achieve (i) at least 0.55% of total combined IWM, QQQ, and SPY industry ADV from Market Maker posted interest in IWM, QQQ, and SPY,<sup>6</sup> and (ii) ETP Holder and Market Maker posted volume in Tape B Adding ADV that is equal to at least 1.50% of US Tape B CADV executed on NYSE Arca Equity Market for the billing month.<sup>7</sup> As a result, OTP Holders that qualify for the Super Tier and the Additional Credit will receive a per contract credit of (\$0.40) on all Penny Issues other than SPY and a per contract credit of (\$0.42) per contract for executions in SPY.<sup>8</sup> Similarly, OTP

<sup>5</sup> See Fee Schedule, MARKET MAKER PENNY AND SPY POSTING CREDIT TIERS.

<sup>6</sup> IWM is the iShares Russell 2000 ETF. QQQ is the Invesco QQQ Trust. SPY is the SPDR S&P 500 ETF Trust.

<sup>7</sup> See Fee Schedule, MARKET MAKER PENNY AND SPY POSTING CREDIT TIERS. The Additional Credit does not apply to executions of issues in a Lead Market Maker's appointment. See *id.*

<sup>8</sup> *Id.* The total potential Super Tier credits combines the (\$0.37) standard per contract credit (for Penny Issues other than SPY) with the (\$0.03) Additional Credit to equal a per contract credit of

Continued

<sup>12</sup> 17 CFR 200.30-3(a)(12).

Holders that qualify for Super Tier II and the Additional Credit will receive a per contract credit of (\$0.45) on all Penny Issues, including SPY.<sup>9</sup>

The Exchange proposes to eliminate completely the “Additional Credit” and to instead add two tiers—named the Super Select Tier and Super Select Tier II (collectively, the “proposed Tiers”).<sup>10</sup> As with the existing Market Maker Penny Tiers, the proposed Tiers will apply to electronic executions of Market Maker posted interest in Penny Issues and will include a cross-asset component.

To qualify for the proposed Super Select Tier and associated (\$0.40) per contract on all Penny Issues (including SPY), an OTP Holder must achieve:

(i) at least 0.25% of total combined IWM, QQQ, and SPY industry ADV from Market Maker posted interest in IWM, QQQ, and SPY; plus

(ii) ETP Holder and Market Maker posted volume in Tape B Adding ADV equal to at least 1.55% of US Tape B CADV for the billing month executed on NYSE Arca Equity Market.

In addition, to qualify for the proposed Super Select Tier II and associated (\$0.41) per contract credit, an OTP Holder must achieve:

(i) at least 0.35% of total combined IWM, QQQ, and SPY industry ADV from Market Maker posted interest in IWM, QQQ, and SPY; plus

(ii) ETP Holder and Market Maker posted volume in Tape B Adding ADV equal to at least 1.65% of US Tape B CADV for the billing month executed on NYSE Arca Equity Market.

The proposed Tiers, like the Additional Credit, require that an OTP Holder execute a minimum of posted volume in IWM/QQQ/SPY, plus satisfy the cross-asset component. The Exchange notes that each of the proposed Tiers, as compared to the Additional Credit, have a lower IWM/QQQ/SPY volume requirement (*i.e.*, 0.25% or 0.35% as compared to 0.55%), which is offset by a slightly higher volume requirement for the cross-asset component (*i.e.*, 1.55% or 1.65% as

(\$0.40); or combines the (\$0.39) standard per contract credit for SPY with (\$0.03) Additional Credit to equal a per contract credit of (\$0.42).

<sup>9</sup> *Id.* The total Super Tier II credit combines the (\$0.42) standard per contract credit for all Penny Issues (including SPY) with the (\$0.03) Additional Credit to equal a per contract credit of (\$0.45).

<sup>10</sup> See proposed Fee Schedule, MARKET MAKER PENNY AND SPY POSTING CREDIT TIERS (adding the proposed Tiers and removing the language regarding the Additional Credit as well as the asterisks signaling this credit that appears in the title of Super Tier and Super Tier II). While the Additional Credit is being eliminated, the Exchange is not proposing to modify the qualification bases or associated credits for the Super Tier or Super Tier II.

compared to 1.50%). The Exchange believes that the proposed (lower) posted volume requirements for IWM/ QQQ/SPY on balance should make the proposed Tiers more achievable. As such, the Exchange believes the proposed Tiers will (continue to) encourage more Market Maker posted interest in certain very high-volume products, in combination with cross asset activity. Increased posted volume order flow, particularly by liquidity providers, contributes to a deeper, more liquid market, which, in turn, provides for increased execution opportunities and thus overall enhanced price discovery and price improvement opportunities on the Exchange.

While the Exchange cannot predict with certainty whether any OTP Holders would seek to qualify for the proposed Tiers, the Exchange believes the proposed modifications, which are designed to encourage increased posted interest from Market Makers in certain high-volume issues as well as cross market activity, would continue to incentivize OTP Holders to submit these types of orders to the Exchange, which brings increased liquidity and order flow for the benefit of all market participants.

## 2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with Section 6(b) of the Act,<sup>11</sup> in general, and furthers the objectives of Sections 6(b)(4) and (5) of the Act,<sup>12</sup> in particular, because it provides for the equitable allocation of reasonable dues, fees, and other charges among its members, issuers and other persons using its facilities and does not unfairly discriminate between customers, issuers, brokers or dealers.

The proposed change to the Fee Schedule are reasonable, equitable, and not unfairly discriminatory. As a threshold matter, the Exchange is subject to significant competitive forces in the market for options securities transaction services that constrain its pricing determinations in that market. The Commission has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. In Regulation NMS, the Commission highlighted the importance of market forces in determining prices and SRO revenues and, also, recognized that current regulation of the market system “has been remarkably successful in promoting market competition in its

broader forms that are most important to investors and listed companies.”<sup>13</sup>

There are currently 18 registered options exchanges competing for order flow. Based on publicly-available information, and excluding index-based options, no single exchange has more than 16% of the market share of executed volume of multiply-listed equity and ETF options trades.<sup>14</sup> Therefore, currently no exchange possesses significant pricing power in the execution of multiply-listed equity & ETF options order flow. More specifically, in September of 2024, the Exchange had 14.05% market share of executed volume of multiply-listed equity & ETF options trades.<sup>15</sup> In such a low-concentrated and highly competitive market, no single options exchange possesses significant pricing power in the execution of option order flow. Within this environment, market participants can freely and often do shift their order flow among the Exchange and competing venues in response to changes in their respective pricing schedules.

The Exchange believes that the proposed modifications to add the proposed Tiers are reasonably designed to incent OTP Holders to increase the number and variety of orders sent to the Exchange for execution. Specifically, to the extent that the proposed change attracts more Market Maker posted interest in certain high-volume issues and cross asset activity, this increased order flow would continue to make the Exchange a more competitive venue for order execution, which, in turn, promotes just and equitable principles of trade and removes impediments to and perfects the mechanism of a free and open market and a national market system. Although the Exchange proposes to eliminate the Additional Credit, the Exchange believes that the proposed Tiers will continue to incentivize participation in greater volume from posted interest, as well as cross asset activity.

The Exchange believes the proposed rule change is an equitable allocation of its fees and credits and is not unfairly

<sup>13</sup> See Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) (S7-10-04) (“Reg NMS Adopting Release”).

<sup>14</sup> The OCC publishes options and futures volume in a variety of formats, including daily and monthly volume by exchange, available here: <https://www.theocc.com/Market-Data/Market-Data-Reports/Volume-and-Open-Interest/Monthly-Weekly-Volume-Statistics>.

<sup>15</sup> Based on a compilation of OCC data for monthly volume of equity-based options and monthly volume of equity-based ETF options, *see id.*, the Exchanges market share in equity-based options increased from 11.48% for the month of September 2023 to 14.05% for the month of September 2024.

<sup>11</sup> 15 U.S.C. 78f(b).

<sup>12</sup> 15 U.S.C. 78f(b)(4) and (5).

discriminatory as it available equally to all similarly-situated market participants on an equal and non-discriminatory basis.

The proposal is based on the amount and type of business transacted on the Exchange, and OTP Holders are not obligated to try to achieve the qualifications for any of the tiers or execute either Market Maker posted interest or cross asset activity. Rather, the proposal is designed to continue to encourage OTP Holders to utilize the Exchange as a primary trading venue for Market Maker posted interest (if they have not done so previously) and to increase volume sent to the Exchange.

To the extent the proposed change continues to attract greater volume and liquidity, the Exchange believes the proposed change would improve the Exchange's overall competitiveness and strengthen its market quality for all market participants. In the backdrop of the competitive environment in which the Exchange operates, the proposed rule change is a reasonable attempt by the Exchange to increase the depth of its market and improve its market share relative to its competitors. The Exchange's fees are constrained by intermarket competition, as OTP Holders may direct their order flow to any of the 17 competing options exchanges, including those that also offer incentives based on Market Maker posted volume in IWM, QQQ, and SPY.<sup>16</sup> Thus, OTP Holders have a choice of where they direct their order flow, including their Market Maker posted interest and cross asset activity. The proposed rule change is designed to incent OTP Holders to direct liquidity to the Exchange, and in particular, Market Maker posted interest in highly liquid issues and cross asset activity, thereby promoting market depth, price discovery and improvement, and enhanced order execution opportunities for market participants.

At present, whether an OTP Holder qualifies for the various monthly incentives set forth in the Market Maker Penny Tiers is dependent on market activity and an OTP Holder's mix of order flow. Thus, while the Exchange cannot predict with certainty whether any OTP Holders will seek to qualify for the proposed Tiers, which apply to Market Maker posted interest in certain

high-volume issues and cross asset activity, would provide an incentive for OTP Holders to continue to submit these types of orders to the Exchange, which brings increased liquidity and order flow for the benefit of all market participants.

Finally, the Exchange believes that it is subject to significant competitive forces, as described below in the Exchange's statement regarding the burden on competition.

#### *B. Self-Regulatory Organization's Statement on Burden on Competition*

In accordance with Section 6(b)(8) of the Act, the Exchange does not believe that the proposed rule change would impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. Instead, as discussed above, the Exchange believes that the proposed changes would encourage the submission of additional liquidity to a public exchange, thereby promoting market depth, price discovery and transparency and enhancing order execution opportunities for all market participants. As a result, the Exchange believes that the proposed change furthers the Commission's goal in adopting Regulation NMS of fostering integrated competition among orders, which promotes "more efficient pricing of individual stocks for all types of orders, large and small."<sup>17</sup>

*Intramarket Competition.* The proposed change is designed to attract additional order flow (particularly Market Maker posted interest in certain high-volume issues) to the Exchange. The Exchange believes that the proposed Tiers would continue to encourage market participants to direct their Market Maker posted interest volume to the Exchange, particularly in certain high-volume issues, as well as encourage cross asset activity. Greater liquidity benefits all market participants on the Exchange, and increased Market Maker posted interest would increase opportunities for execution of other trading interest. The proposed modifications would apply and be available equally to all similarly-situated market participants that handle Market Maker posted interest and cross asset activity, and, accordingly, the proposed change would not impose a disparate burden on competition among market participants on the Exchange.

*Intermarket Competition.* The Exchange operates in a highly competitive market in which market participants can readily favor one of the

17 competing option exchanges if they deem fee levels at a particular venue to be excessive. In such an environment, the Exchange must continually adjust its fees to remain competitive with other exchanges and to attract order flow to the Exchange. Based on publicly-available information, and excluding index-based options, no single exchange has more than 16% of the market share of executed volume of multiply-listed equity and ETF options trades.<sup>18</sup> Therefore, currently no exchange possesses significant pricing power in the execution of multiply-listed equity & ETF options order flow. More specifically, in September 2024, the Exchange had just over 14% market share of executed volume of multiply-listed equity & ETF options trades.<sup>19</sup>

The Exchange believes that the proposed rule change reflects this competitive environment because it modifies the Exchange's fees in a manner designed to encourage OTP Holders to direct trading interest (particularly Market Maker posted interest and cross asset activity) to the Exchange, to provide liquidity and to attract order flow. To the extent that this purpose is achieved, all the Exchange's market participants should benefit from the improved market quality and increased opportunities for price improvement.

The Exchange believes that the proposed change could promote competition between the Exchange and other execution venues, including those that also currently offer incentives based on Market Maker posted volume in IWM, QQQ, and SPY,<sup>20</sup> by encouraging additional orders to be sent to the Exchange for execution.

<sup>18</sup> The OCC publishes options and futures volume in a variety of formats, including daily and monthly volume by exchange, available here: <https://www.theocc.com/Market-Data/Market-Data-Reports/Volume-and-Open-Interest/Monthly-Weekly-Volume-Statistics>.

<sup>19</sup> Based on OCC data for monthly volume of equity-based options and monthly volume of ETF-based options, *see id.*, the Exchanges market share in equity-based options increased from 11.48% for the month of September 2023 to 14.05% for the month of September 2024.

<sup>20</sup> *See* MIAAX Pearl Options Exchange Fee Schedule, available at [MIAAX\\_Pearl\\_Options\\_Fee\\_Schedule\\_100721.pdf](https://www.miaaxglobal.com/miaaxglobal.com) (offering tiered incentives based on Market Maker volume in IWM, QQQ, and SPY); Cboe BZX Options Fee Schedule, available at [https://www.cboe.com/us/options/membership/fee\\_schedule/bzx/a](https://www.cboe.com/us/options/membership/fee_schedule/bzx/a) (offering favorable credits as an alternative for Market Maker posting volume in IWM, QQQ, and SPY).

<sup>16</sup> *See* MIAAX Pearl Options Exchange Fee Schedule, available at [MIAAX\\_Pearl\\_Options\\_Fee\\_Schedule\\_100721.pdf](https://www.miaaxglobal.com/miaaxglobal.com) (offering tiered incentives based on Market Maker volume in IWM, QQQ, and SPY); Cboe BZX Options Fee Schedule, available at [https://www.cboe.com/us/options/membership/fee\\_schedule/bzx/a](https://www.cboe.com/us/options/membership/fee_schedule/bzx/a) (offering favorable credits as an alternative for Market Maker posting volume in IWM, QQQ, and SPY).

<sup>17</sup> *See* Reg NMS Adopting Release, *supra* note 13, at 37499.



*C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

No written comments were solicited or received with respect to the proposed rule change.

**III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

The foregoing rule change is effective upon filing pursuant to Section 19(b)(3)(A)<sup>21</sup> of the Act and subparagraph (f)(2) of Rule 19b-4<sup>22</sup> thereunder, because it establishes a due, fee, or other charge imposed by the Exchange.

At any time within 60 days of the filing of such proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings under Section 19(b)(2)(B)<sup>23</sup> of the Act to determine whether the proposed rule change should be approved or disapproved.

**IV. Solicitation of Comments**

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

*Electronic Comments:*

- Use the Commission's internet comment form (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include file number SR-NYSEARCA-2024-102 on the subject line.

*Paper Comments:*

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090. All submissions should refer to file number SR-NYSEARCA-2024-102. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the

Commission's internet website (<https://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-NYSEARCA-2024-102 and should be submitted on or before December 24, 2024.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>24</sup>

**Sherry R. Haywood**,  
Assistant Secretary.

[FR Doc. 2024-28253 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

**SECURITIES AND EXCHANGE COMMISSION**

[Investment Company Act Release No. 35403; 812-15624]

**Privacore PCAAM Alternative Income Fund, et al.**

November 27, 2024.

**AGENCY:** Securities and Exchange Commission ("Commission" or "SEC").

**ACTION:** Notice.

Notice of an application under section 6(c) of the Investment Company Act of 1940 (the "Act") for an exemption from sections 18(a)(2), 18(c) and 18(i) of the Act, under sections 6(c) and 23(c) of the Act for an exemption from rule 23c-3 under the Act, and for an order pursuant to section 17(d) of the Act and rule 17d-1 under the Act.

*Summary of Application:* Applicants request an order to permit certain registered closed-end investment

companies to issue multiple classes of shares and to impose asset-based distribution and/or service fees and early withdrawal charges.

*Applicants:* Privacore PCAAM Alternative Income Fund, Privacore PCAAM Alternative Growth Fund, Privacore Capital Advisors, LLC, and Janus Henderson Distributors US LLC.

*Filing Dates:* The application was filed on August 30, 2024.

*Hearing or Notification of Hearing:* An order granting the requested relief will be issued unless the Commission orders a hearing. Interested persons may request a hearing on any application by emailing the SEC's Secretary at [Secretarys-Office@sec.gov](mailto:Secretarys-Office@sec.gov) and serving the Applicants with a copy of the request by email, if an email address is listed for the relevant Applicant below, or personally or by mail, if a physical address is listed for the relevant Applicant below. Hearing requests should be received by the Commission by 5:30 p.m. on December 23, 2024, and should be accompanied by proof of service on the Applicants, in the form of an affidavit, or, for lawyers, a certificate of service. Pursuant to rule 0-5 under the Act, hearing requests should state the nature of the writer's interest, any facts bearing upon the desirability of a hearing on the matter, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by emailing the Commission's Secretary.

**ADDRESSES:** The Commission:

*Secretarys-Office@sec.gov.* Applicants: Joshua B. Deringer, Esq., Faegre Drinker Biddle & Reath LLP, [joshua.deringer@faegredrinker.com](mailto:joshua.deringer@faegredrinker.com), with a copy to Sandhya Ganapathy, Privacore Capital Advisors, LLC, [Sandhya.Ganapathy@privacorecap.com](mailto:Sandhya.Ganapathy@privacorecap.com).

**FOR FURTHER INFORMATION CONTACT:**

Steven I. Amchan, Senior Counsel, or Lisa Reid Ragen, Branch Chief, at (202) 551-6825 (Division of Investment Management, Chief Counsel's Office).

**SUPPLEMENTARY INFORMATION:** For Applicants' representations, legal analysis, and conditions, please refer to Applicants' application, dated August 30, 2024, which may be obtained via the Commission's website by searching for the file number at the top of this document, or for an Applicant using the Company name search field on the SEC's EDGAR system. The SEC's EDGAR system may be searched at <https://www.sec.gov/edgar/searchedgar/legacy/companysearch.html>. You may also call the SEC's Public Reference Room at (202) 551-8090.

<sup>21</sup> 15 U.S.C. 78s(b)(3)(A).

<sup>22</sup> 17 CFR 240.19b-4(f)(2).

<sup>23</sup> 15 U.S.C. 78s(b)(2)(B).

<sup>24</sup> 17 CFR 200.30-3(a)(12).

For the Commission, by the Division of Investment Management, under delegated authority.

**Stephanie J. Fouse,**  
Assistant Secretary.

[FR Doc. 2024–28333 Filed 12–2–24; 8:45 am]

BILLING CODE 8011–01–P

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–101778; File No. SR–MEMX–2024–45]

### Self-Regulatory Organizations; MEMX LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend Exchange Rule 19.3, Criteria for Underlying Securities, To Allow the Exchange To List and Trade Options on the iShares Bitcoin Trust (“the Trust”)

November 27, 2024.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (“Act”),<sup>1</sup> and Rule 19b–4 thereunder,<sup>2</sup> notice is hereby given that on November 27, 2024, MEMX LLC (“MEMX” or “Exchange”) filed with the Securities and Exchange Commission (“Commission”) the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

#### I. Self-Regulatory Organization’s Statement of the Terms of Substance of the Proposed Rule Change

The Exchange is filing with the Commission a proposed rule change to amend Rule 19.3, Criteria for Underlying Securities. The text of the proposed rule change is provided in Exhibit 5.

#### II. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

#### A. Self-Regulatory Organization’s Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

##### 1. Purpose

The Exchange proposes to amend Exchange Rule 19.3 (Criteria for Underlying Securities) to allow the Exchange to list and trade options on the iShares Bitcoin Trust (“the Trust”), designating the Trust as appropriate for options trading on the Exchange. This is a competitive filing that is based on a similar proposal submitted by Nasdaq ISE, LLC (“ISE”) and approved by the Securities and Exchange Commission (“Commission”).<sup>3</sup>

Current Exchange Rule 19.3(i) provides that, subject to certain other criteria set forth in that Rule, securities deemed appropriate for options trading include shares or other securities (“Fund Shares”), including but not limited to Partnership Units as defined in the Rule, that are principally traded on a national securities exchange and are defined as an “NMS stock” under Rule 600 of Regulation NMS and that meet specified criteria enumerated in the rule. Exchange Rule 19.3(i) provides that such shares or other securities:

(4) represent interests in the SPDR Gold Trust or are issued by the iShares COMEX Gold Trust or iShares Silver Trusts, provided that all conditions described under Rule 19.3(i)(1)–(2) are met.

##### Proposal

The Exchange proposes to amend Exchange Rule 19.3(i) to expand the list of securities that are appropriate for options trading on the Exchange.

##### Description of the Trust<sup>4</sup>

The shares are issued by the Trust, a Delaware statutory trust. The Trust operates pursuant to a trust agreement (the “Trust Agreement”) between the

<sup>3</sup> See Securities Exchange Act Release No. 101128 (September 20, 2024), 89 FR 78942 (September 26, 2024) (SR–ISE–2024–03) (Self-Regulatory Organizations; Nasdaq ISE, LLC; Notice of Filing of Amendment Nos. 4 and 5 and Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1, 4, and 5, to Permit the Listing and Trading of Options on the iShares Bitcoin Trust).

<sup>4</sup> See Securities Exchange Act Release No. 99306 (Jan. 10, 2024), 89 FR 3008 (Jan. 17, 2024) (order approving File Nos. SR–NYSEARCA–2021–90; SR–NYSEARCA–2023–44; SR–NYSEARCA–2023–58; SRNASDAQ–2023–016; SR–NASDAQ–2023–019; SR–CboeBZX–2023–028; SR–CboeBZX–2023–038; SR–CboeBZX–2023–040; SR–CboeBZX–2023–042; SR–CboeBZX–2023–044; SR–CboeBZX–2023–072) (Order Granting Accelerated Approval of Proposed Rule Changes, as Modified by Amendments Thereto, To List and Trade Bitcoin-Based Commodity-Based Trust Shares and Trust Units) for a complete description of the Trust.

Sponsor, BlackRock Fund Advisors (the “Trustee”) as the trustee of the Trust and Wilmington Trust, National Association, as Delaware trustee. The Trust issues shares representing fractional undivided beneficial interests in its net assets. The assets of the Trust consist only of bitcoin, held by a custodian on behalf of the Trust except under limited circumstances when transferred through the Trust’s prime broker temporarily (described below), and cash. Coinbase Custody Trust Company, LLC (the “Bitcoin Custodian”) is the custodian for the Trust’s bitcoin holdings, and maintains a custody account for the Trust (“Custody Account”); Coinbase, Inc. (the “Prime Execution Agent”), an affiliate of the Bitcoin Custodian, is the prime broker for the Trust and maintains a trading account for the Trust (“Trading Account”); and Bank of New York Mellon is the custodian for the Trust’s cash holdings (the “Cash Custodian” and together with the Bitcoin Custodian, the “Custodians”) and the administrator of the Trust (the “Trust Administrator”). Under the Trust Agreement, the Trustee may delegate all or a portion of its duties to any agent, and has delegated the bulk of the day to day responsibilities to the Trust Administrator and certain other administrative and recordkeeping functions to its affiliates and other agents. The Trust is not an investment company registered under the Investment Company Act of 1940, as amended. The investment objective of the Trust is to reflect generally the performance of the price of bitcoin. The Trust seeks to reflect such performance before payment of the Trust’s expenses and liabilities. The shares are intended to constitute a simple means of making an investment similar to an investment in bitcoin through the public securities market rather than by acquiring, holding and trading bitcoin directly on a peer-to-peer or other basis or via a digital asset exchange. The shares have been designed to remove the obstacles represented by the complexities and operational burdens involved in a direct investment in bitcoin, while at the same time having an intrinsic value that reflects, at any given time, the investment exposure to the bitcoin owned by the Trust at such time, less the Trust’s expenses and liabilities. Although the shares are not the exact equivalent of a direct investment in bitcoin, they provide investors with an alternative method of achieving investment exposure to bitcoin through the public securities market, which may be more familiar to them.

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b–4.

### Custody of the Trust's Bitcoin

An investment in the shares is backed by bitcoin held by the Bitcoin Custodian on behalf of the Trust. All of the Trust's bitcoin will be held in the Custody Account, other than the Trust's bitcoin which is temporarily maintained in the Trading Account under limited circumstances, *i.e.*, in connection with creation and redemption Basket<sup>5</sup> activity or sales of bitcoin deducted from the Trust's holdings in payment of Trust expenses or the Sponsor's fee (or, in extraordinary circumstances, upon liquidation of the Trust). The Custody Account includes all of the Trust's bitcoin held at the Bitcoin Custodian, but does not include the Trust's bitcoin temporarily maintained at the Prime Execution Agent in the Trading Account from time to time. The Bitcoin Custodian will keep all of the private keys associated with the Trust's bitcoin held in the Custody Account in "cold storage".<sup>6</sup> The hardware, software, systems, and procedures of the Bitcoin Custodian may not be available or cost-effective for many investors to access directly.

The Exchange believes that offering options on the Trust will benefit investors by providing them with an additional, relatively lower cost investing tool to gain exposure to spot Bitcoin as well as a hedging vehicle to meet their investment needs in connection with Bitcoin products and positions. Similar to other commodity-based trusts on which options may be listed on the Exchange (*e.g.*, SPDR<sup>®</sup> Gold Trust, the iShares COMEX Gold Trust, or the iShares Silver Trust),<sup>7</sup> the Trust essentially offers the same objectives and benefits to investors as do other commodity-based trusts on which options may be listed on the Exchange.

Options on the Trust will trade in the same manner as options on other ETFs (otherwise referred to as "Fund Shares") on the Exchange. Exchange Rules that currently apply to the listing and trading of all options on ETFs on the Exchange, including, for example, Rules that govern listing criteria, expirations, exercise prices, minimum increments, position and exercise limits, margin

<sup>5</sup> The Trust issues and redeems Shares only in blocks of 40,000 or integral multiples thereof. A block of 40,000 Shares is called a "Basket." These transactions take place in exchange for Bitcoin.

<sup>6</sup> The term "cold storage" refers to a safeguarding method by which the private keys corresponding to the Trust's bitcoins are generated and stored in an offline manner, subject to layers of procedures designed to enhance security. Private keys are generated by the Bitcoin Custodian in offline computers that are not connected to the internet so that they are more resistant to being hacked.

<sup>7</sup> See Exchange Rule 19.3(i).

requirements, customer accounts and trading halt procedures, will apply to the listing and trading of options on the Trust on the Exchange. Today, these rules apply to options on the various commodities-based trusts deemed appropriate for options trading on the Exchange pursuant to Exchange Rule 19.3(i).

The Exchange's initial listing standards for ETFs on which options may be listed and traded on the Exchange will apply to the Trust. Pursuant to Exchange Rule 19.3(a), a security (which includes ETFs) on which options may be listed and traded on the Exchange must be registered (with the Commission) and be an NMS stock (as defined in Rule 600 of Regulation NMS under the Act) and be characterized by a substantial number of outstanding shares that are widely held and actively traded. Exchange Rule 19.3(i)(1) requires that, in relevant part, Funds Shares must either (A) meet the criteria and standards set forth in Exchange Rule 19.3(a) or Exchange Rule 19.3(b), or (B) be available for creation or redemption each business day in cash or in kind from the investment company, commodity pool or other entity at a price related to net asset value, and the investment company, commodity pool or other entity is obligated to provide that Fund Shares may be created even if some or all of the securities and/or cash required to be deposited have not been received by the Fund, the unit investment trust or the management investment company, provided the authorized creation participant has undertaken to deliver the securities and/or cash as soon as possible and such undertaking is secured by the delivery and maintenance of collateral consisting of cash or cash equivalents satisfactory to the Fund, all as described in the Fund's or unit trust's prospectus.

Options on the Trust will also be subject to the Exchange's continued listing standards set forth in Exchange Rule 19.4(g), for Fund Shares deemed appropriate for options trading pursuant to Exchange Rule 19.3(i). Specifically, Exchange Rule 19.4(g) provides that Fund Shares that were initially approved for options trading pursuant to Exchange Rule 19.3(i) will not be deemed to meet the requirements for continued approval, and the Exchange shall not open for trading any additional series of option contracts of the class covering such Fund Shares, if the Fund Shares are delisted from trading pursuant to Exchange Rule 19.4(b)(4). In addition, options on Fund Shares may be subject to the suspension of opening transactions in any of the following

circumstances: (1) in the case of options covering Fund Shares approved for trading under Exchange Rule 19.3(i)(4)(A), in accordance with the terms of paragraphs (b)(1), (2), and (3) of Exchange Rule 19.4; (2) in the case of options covering Fund Shares approved for trading under Exchange Rule 19.3(i)(4)(B), following the initial twelve-month period beginning upon the commencement of trading in the Fund Shares on a national securities exchange and are defined as an NMS stock under Rule 600 of Regulation NMS, there were fewer than 50 record and/or beneficial holders of such Fund Shares for 30 consecutive days; (3) the value of the index, non-U.S. currency, or portfolio of commodities including commodity futures contracts, options on commodity futures contracts, swaps, forward contracts and/or options on physical commodities and/or financial instruments and money market instruments on which the Fund Shares are based is no longer calculated or available; or (4) such other event occurs or condition exists that in the opinion of the Exchange makes further dealing in such options on the Exchange inadvisable.

Options on the Trust would be physically settled contracts with American-style exercise.<sup>8</sup> Consistent with current Exchange Rule 19.5, which governs the opening of options series on a specific underlying security (including ETFs), the Exchange will open at least one expiration month for options on the Trust<sup>9</sup> and may also list series of

<sup>8</sup> See Exchange Rule 19.2, which provides that the rights and obligations of holders and writers are set forth in the Rules of the Options Clearing Corporation ("OCC"); see also OCC Rules, Chapters VIII (which governs exercise and assignment) and Chapter IX (which governs the discharge of delivery and payment obligations arising out of the exercise of physically settled stock option contracts).

<sup>9</sup> See Exchange Rule 19.5(b). The monthly expirations are subject to certain listing criteria for underlying securities described within Exchange Rule 19.5 and its Interpretations and Policies. Monthly listings expire the third Friday of the month. The term "expiration date" (unless separately defined elsewhere in the OCC By-Laws), when used in respect of an option contract (subject to certain exceptions), means the third Friday of the expiration month of such option contract, or if such Friday is a day on which the exchange on which such option is listed is not open for business, the preceding day on which such exchange is open for business. See OCC By-Laws Article I, Section 1. Pursuant to Exchange Rule 19.5(c), additional series of options of the same class may be opened for trading on the Exchange when the Exchange deems it necessary to maintain an orderly market, to meet customer demand or when the market price of the underlying stock moves more than five strike prices from the initial exercise price or prices. Pursuant to Exchange Rule 19.5(c), new series of options on an individual stock may be added until the beginning of the month in which the options contract will expire. Due to unusual market conditions, the Exchange, in its discretion, may add

options on the Trust for trading on a weekly,<sup>10</sup> monthly,<sup>11</sup> or quarterly<sup>12</sup> basis.

Pursuant to Exchange Rule 19.5(d)(4), which governs strike prices of series of options on ETFs, the interval between strike prices of series of options on ETFs approved for options trading pursuant to Exchange Rule 19.3(i) shall be fixed at a price per share which is reasonably close to the price per share at which the underlying security is traded in the primary market at or about the same time such series of options is first open for trading on the Exchange, or at such intervals as may have been established on another options exchange prior to the initiation of trading on the Exchange. With respect to the Short Term Options Series or Weekly Program, during the month prior to expiration of an option class that is selected for the Short Term Option Series Program, the strike price intervals for the related non-Short Term Option (“Related non-Short Term Option”) shall be the same as the strike price intervals for the Short Term Option.<sup>13</sup> Specifically, the Exchange may open for trading Short Term Option Series at strike price intervals of (i) \$0.50 or greater where the strike price is less than \$100, and \$1 or greater where the strike price is between \$100 and \$150 for all option classes that participate in the Short Term Options Series Program; (ii) \$0.50 for option classes that trade in one dollar increments and are in the Short Term Option Series Program; or (iii) \$2.50 or greater where the strike price is above \$150.<sup>14</sup> Additionally, the Exchange may list series of options pursuant to the \$1 Strike Price Interval Program,<sup>15</sup> the \$0.50 Strike Program,<sup>16</sup> and the \$2.50 Strike Price Program.<sup>17</sup> Pursuant to Exchange Rule 21.5, where the price of a series of options for the Trust is less than \$3.00, the minimum increment will be \$0.05, and where the price is \$3.00 or higher, the minimum increment will be \$0.10<sup>18</sup> consistent

a new series of options on an individual stock until the close of trading on the business day prior to expiration.

<sup>10</sup> See Exchange Rule 19.5, Interpretation and Policy .05.

<sup>11</sup> See Exchange Rule 19.5, Interpretation and Policy .08.

<sup>12</sup> See Exchange Rule 19.5, Interpretation and Policy .04.

<sup>13</sup> See Exchange Rule 19.5, Interpretation and Policy .05(e).

<sup>14</sup> *Id.*

<sup>15</sup> See Exchange Rule 19.5, Interpretation and Policy .02.

<sup>16</sup> See Exchange Rule 19.5, Interpretation and Policy .06.

<sup>17</sup> See Exchange Rule 19.5, Interpretation and Policy .03.

<sup>18</sup> See Exchange Rule 21.5.

with the minimum increments for options on other ETFs listed on the Exchange. Any and all new series of Trust options that the Exchange lists will be consistent and comply with the expirations, strike prices, and minimum increments set forth in Rules 19.5 and 21.5, as applicable.

Pursuant to Exchange Rules 18.7<sup>19</sup> and 18.9, the position and exercise limits, respectively, for options on the Trust will be 25,000 same side options contracts. In considering the appropriate position and exercise limits for the Trust, the Exchange reviewed the data presented by ISE in its filing, specifically in Exhibit 3 of the filing,<sup>20</sup> where ISE measured the Trust’s market capitalization and ADV against other industry data as explained further below. In its filing, ISE considered the Trust’s market capitalization and ADV, and prospective position limit in relation to other securities. In measuring the Trust against other securities, ISE aggregated market capitalization and volume data for securities that have defined position limits utilizing data from The Options Clearing Corporations (“OCC”).<sup>21</sup> This pool of data took into consideration 3,984 options on single stock securities, excluding broad based ETFs.<sup>22</sup> Next, ISE aggregated the data based on market capitalization and ADV and grouped option symbols by position limit utilizing statistical thresholds for ADV and market capitalization that were one standard deviation above the mean for each position limit category (*i.e.*, 25,000, 50,000 to 65,000, 75,000, 100,000 to less than 250,000, 250,000 to 400,000, 450,000 to 1,000,000, and greater than or equal to 1,000,000) (*sic*).<sup>23</sup> The OCC publishes a list of position limits for various contracts

<sup>19</sup> See Regulatory Notice 23–12, available at: <https://info.memxtrading.com/wp-content/uploads/2023/09/RegNotice-23-12-Options-Position-Limits.pdf>, which informed Exchange members of the specific position limits applicable to options trading on MEMX Options, pursuant to Rule 18.7, as those position limits calculated and disseminated by the OCC, published daily and which can be found at: <https://www.theocc.com/market-data/market-data-reports/series-and-trading-data/position-limits>.

<sup>20</sup> See Securities Exchange Act Release No. 101128 (September 20, 2024), 89 FR 78942 (September 26, 2024) (SR–ISE–2024–03) (Order Granting Accelerated Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1, 4, and 5, to Permit the Listing and Trading of Options on the iShares Bitcoin Trust) (Exhibit 3) (“IBIT Approval Order”) (letter from Angela Dunn, Nasdaq ISE, LLC, to Vanessa Countryman, Secretary, Commission, dated August 21, 2024) (“ISE Letter”).

<sup>21</sup> The computations are based on OCC data from August 6, 2024. Data displaying zero values in market capitalization or ADV were removed.

<sup>22</sup> The Trust has one asset and therefore is not comparable to a broad based ETF where there are typically multiple components.

<sup>23</sup> See ISE Letter at 10.

listed by other options exchanges, which the Exchange utilizes whenever it is listing a new product that has already been listed by another options exchange. For example, like on ISE, a 25,000 contract limit on the Exchange applies to those options having an underlying security that does not meet the requirements for a higher options contract limit. ISE performed an exercise to demonstrate the Trust’s position limit relative to other options symbols in terms of market capitalization and ADV. For reference the market capitalization for the Trust was 19,789,068 billion<sup>24</sup> with an ADV, for the preceding three months prior to August 7, 2024, of greater than 26 million shares.<sup>25</sup> Today, by comparison, other options symbols with similar market capitalization and ADV have a position limit in excess of 400,000.<sup>26</sup> Therefore, the proposed 25,000 same side position limit for options on the Trust is extremely conservative relative to these options symbols which are a full standard deviation above the mean in comparison.

Second, ISE reviewed the Trust’s data relative to the market capitalization of the entire bitcoin market in terms of exercise risk and availability of deliverables. Utilizing data as of August 3, 2024, there were 19,737,193 bitcoins in circulation.<sup>27</sup> ISE took a price of \$57,000 that equates to a market capitalization of greater than 1.125 trillion U.S. dollars, and applied that to a position limit of 400,000 for options on the Trust.<sup>28</sup> If a position limit of 400,000 options were considered (the position limit that would be typically assigned based upon data) the exercisable risk would represent only 6.6% of the outstanding shares of the Trust. The 25,000 position limit being sought only represents 0.4% of the outstanding shares of the Trust. Since the Trust has a creation and redemption process managed through the issuer, additionally it can be compared to the position limit sought to the total market capitalization of the entire bitcoin market. In this case, the exercisable risk for options on the Trust would be less than 0.01% of the market capitalization

<sup>24</sup> ISE acquired this figure as of August 13, 2024. See <https://www.ishares.com/us/products/333011/isharesbitcoin-trust>. The global supply of bitcoin grows each day bitcoin are minted.

<sup>25</sup> See ISE Letter at 10.

<sup>26</sup> See, e.g., iShares® iBoxx® \$ High Yield Corporate Bond ETF (“HYG”) with a market capitalization of 13,859,235,000 billion as of November 4, 2024. See <https://www.ishares.com/us/products/239565/isharesiboxx-high-yield-corporate-bond-etf>. The Exchange notes that HYG has a position limit of 500,000 contracts.

<sup>27</sup> See ISE Letter at 10.

<sup>28</sup> *Id.*

of all outstanding bitcoin. Assuming a scenario where all options on the Trust's shares were exercised given the proposed 25,000 per same side position limit, this would have a virtually unnoticed impact on the entire bitcoin market. This analysis demonstrates that the proposed 25,000 per same side position limit is also extremely conservative and more than appropriate for options on the Trust.

Third, ISE reviewed the proposed position limit by comparing it to position limits for derivative products regulated by the Commodity Futures Trading Commission ("CFTC"). While the CFTC, through the relevant Designated Contract Markets, only regulates options positions based upon delta equivalents (creating a less stringent standard), ISE examined equivalent bitcoin futures position limits. In particular, ISE looked at the CME bitcoin futures contract<sup>29</sup> that has a position limit of 2,000 futures.<sup>30</sup> On August 7, 2024, CME bitcoin futures settled at \$55,000.<sup>31</sup> Taking the position limit of 2,000 futures at a \$5 multiplier<sup>32</sup> equates to \$550 million of notional value for bitcoin futures. By way of comparison, on August 7, 2024, the Trust settled at \$31.19 per share, which would equate to 17,633,857 shares of the Trust<sup>33</sup> if the CME notional position limit were utilized. Since substantial portions of any distributed options portfolio are likely to be out of the money on expiration, an options position limit equivalent to the CME position limit for bitcoin futures (considering that all options deltas are  $\leq 1.00$ ) should be a bit higher than the CME implied 176,338 limit.

Of note, unlike options contracts, CME position limits are calculated on a net futures equivalent basis by contract and include contracts that aggregate into one or more base contracts according to an aggregation ratio(s).<sup>34</sup> Therefore, if a portfolio includes positions in options

on futures, CME would aggregate those positions into the underlying futures contracts in accordance with a table published by CME on a delta equivalent value for the relevant spot month, subsequent spot month, single month and all month position limits.<sup>35</sup> If a position exceeds position limits because of an option assignment, CME permits market participants to liquidate the excess position within one business day without being considered in violation of its rules. Additionally, if at the close of trading, a position that includes options exceeds position limits for futures contracts, when evaluated using the delta factors as of that day's close of trading, but does not exceed the limits when evaluated using the previous day's delta factors, then the position shall not constitute a position limit violation. Considering CME's position limits on futures for bitcoin, the Exchange believes that that the proposed 25,000 per same side position limit is conservative and more than appropriate for options on the Trust.

In analyzing the proposed position limit for options on the Trust, ISE also considered the supply of bitcoin. Specifically, ISE examined the number of market participants with position limits that would need to exercise in unison to put the underlying asset under stress. In the case of options on the Trust, the proposed 25,000 same side position limit effectively restricts a market participant from holding positions that could be exercised in excess of 2,500,000 shares of the Trust. Utilizing data from August 12, 2024, the Trust had 611,040,000 shares outstanding, therefore 244 market participants would have to simultaneously exercise position limits in order to create a scenario that may put the underlying asset (the Trust) under stress.<sup>36</sup> The Exchange notes that historically, from observation only, it appears that no more than five market participants holding position limits in any security have exercised in unison in any option. As unlikely an occurrence as all market participants exercising their position limits in unison would be, if it were to occur, it should be noted that even such an occurrence would not likely put the Trust under stress as economic incentives, would induce the creation of more shares through the ETF creation and redemption process.

By way of example, given that the current global supply of bitcoin, the underlying asset of the Trust, is

19,789,068<sup>37</sup> and that each bitcoin can currently be redeemed for 1,755 shares of the Trust, another 34,729,814,340 shares of the Trust could be created. To exhaust this supply of the Trust, 13,891 market participants would have to simultaneously exercise their position limit. Comparing the Trust to the SPDR Gold Shares ("GLD") ETF or the iShares Silver Trust ("SLV") ETF, which have position limits of 250,000 or ten times the proposed position limit for the Trust as well as lower shares outstanding in both products,<sup>38</sup> it is unjustified to mandate a different level of stringency with respect to a position limit for options on the Trust.

The supply of bitcoin does have a limit, which will take years to fully mint.<sup>39</sup> The Exchange notes that bitcoin is a viable economic alternative to traditional assets. The price of goods denominated by bitcoin has actually declined. This dynamic not only makes a fixed supply desirable, but a necessary condition of the value added by this asset in the broader economy. Further, the Exchange notes that corporations have a limited number of outstanding shares. Corporations may authorize additional shares, repurchase shares or split their shares. Similarly, ETFs, like the Trust, may also create, redeem, or split shares to suit the demand of the marketplace.

Importantly, because the supply of bitcoin is much larger than the available supply of most securities and the proposed 25,000 contract position limit is so conservative, the Exchange believes that evaluating the available supply of bitcoin in establishing a position limit for options on the Trust would demonstrate that the proposed limit is safe for investors and the market.<sup>40</sup> The Trust constitutes less than 2% of the entire bitcoin supply. When comparing the market capitalization of bitcoin against the largest securities, bitcoin would rank 7th among those

<sup>29</sup> CME Bitcoin Futures are described in Chapter 350 of CME's Rulebook.

<sup>30</sup> See the Position Accountability and Reportable Level Table in the Interpretations & Special Notices Section of Chapter 5 of CME's Rulebook.

<sup>31</sup> See [https://finance.yahoo.com/quote/BTC%3DF/history/?guccounter=1&guce\\_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLnNvbS8&guce\\_referrer\\_sig=AQAAAM7ngaS6ZQ59c2Wxz7JW2IUe-\\_-1FnLyr8TQw4jkkleHyCENfSMIEpPp2hCzPDeryTVyB78NlwxkwFB5Fuw-jAYiuSmYJHBriWbV6dYn91VQfzQNT3p0I2RkYL](https://finance.yahoo.com/quote/BTC%3DF/history/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLnNvbS8&guce_referrer_sig=AQAAAM7ngaS6ZQ59c2Wxz7JW2IUe-_-1FnLyr8TQw4jkkleHyCENfSMIEpPp2hCzPDeryTVyB78NlwxkwFB5Fuw-jAYiuSmYJHBriWbV6dYn91VQfzQNT3p0I2RkYL).

<sup>32</sup> Each bitcoin futures contract is valued at 5 bitcoins as defined by the CME CF Bitcoin Reference Rate ("BRR"). See CME Rule 35001.

<sup>33</sup> See ISE Letter at 11.

<sup>34</sup> See <https://www.cmegroup.com/education/courses/market-regulation/position-limits/positionlimitsaggregation-of-contracts-and-table.htm>.

<sup>35</sup> *Id.*

<sup>36</sup> See <https://www.ishares.com/us/products/333011/ishares-bitcoin-trust>.

<sup>37</sup> This figure was acquired as of August 13, 2024. See <https://www.ishares.com/us/products/333011/isharesbitcoin-trust>. The global supply of bitcoin grows each day bitcoin are minted.

<sup>38</sup> As of August 13, 2024, GLD had 294,000,000 shares outstanding and SLV had 510,200,000 shares outstanding. See <https://www.ssga.com/us/en/intermediary/etfs/funds/spdr-gold-shares-gld> and <https://www.ishares.com/us/products/239855/ishares-silver-trust-fund>.

<sup>39</sup> A recent article suggested that the remaining supply will take over 100 years to fully mint. See Sen. Vivek. "94% of Bitcoin's Supply Has Now Been Issued." Bitcoin Magazine, <https://bitcoinmagazine.com/business/94-of-bitcoins-supply-has-now-been-issued>. August 19, 2024.

<sup>40</sup> A supply consideration would likely be valuable for an option symbol that had far less liquidity than the Trust.

securities.<sup>41</sup> Further, the Exchange believes that its proposal to list options on the Trust with a position limit of 25,000 on the same side is a conservative position limit that does not lend itself to manipulation in the market given the ample market capitalization and liquidity in the Trust. If we look to the liquidity statistics of similar instruments and their concomitant position limits, we are able to extrapolate a reasonable standard for arriving at a position limit for a new product. In this case we can look to GLD, SLV, and the ProShares Bitcoin Strategy ETF (“BITO”). These products have volume statistics and “float” statistics, which gauge liquidity, which are in line, yet slightly lower than the Trust. All three of these reference products have position limits of 250,000 contracts. These reference products are remarkably similar in nature to the Trust; they are exchange-traded products (“ETPs”) holding one asset in a trust.

The Exchange further notes that Exchange Rule 28.3, which governs margin requirements applicable to trading on the Exchange, including options on ETFs, will also apply to the trading of the Trust options. The Exchange proposes the position and exercise limits for the options on the Trust to be 25,000 contracts on the same side.

The Exchange represents that the same surveillance procedures applicable to all other options on other ETFs currently listed and traded on the Exchange will apply to options on the Trust. Also the Exchange represents that it has the necessary systems capacity to support the new option series. The Exchange believes that its existing surveillance and reporting safeguards are designed to deter and detect possible manipulative behavior which might potentially arise from listing and trading options on ETFs, including the proposed Trust options.

Today, the Exchange has an adequate surveillance program in place for options. The Exchange intends to apply those same program procedures to options on the Trust that it applies to the Exchange’s other options products.<sup>42</sup> The Exchange’s staff will have access to the surveillance programs conducted by its affiliate exchange, MEMX Equities, with respect to trading in the shares of the underlying Trust when conducting surveillances for

market abuse or manipulation in the options on the Trust. Additionally, the Exchange is a member of the Intermarket Surveillance Group (“ISG”) under the Intermarket Surveillance Group Agreement. ISG members work together to coordinate surveillance and investigative information sharing in the stock, options, and futures markets. In addition to obtaining surveillance data from MEMX Equities, the Exchange will be able to obtain information regarding trading in the shares of the underlying Trust from Nasdaq, LLC and other markets through ISG. In addition, the Exchange has a Regulatory Services Agreement with the Financial Industry Regulatory Authority (“FINRA”). Pursuant to a multi-party 17d–2 joint plan, all options exchanges allocate regulatory responsibilities to FINRA to conduct certain options related market surveillance that are common to rules of all options exchanges.<sup>43</sup>

The underlying shares of spot bitcoin ETPs, including the Trust, are also subject to safeguards related to addressing market abuse and manipulation. As the Commission stated in Bitcoin ETP Order:

Each Exchange has a comprehensive surveillance-sharing agreement with the CME via their common membership in the Intermarket Surveillance Group. This facilitates the sharing of information that is available to the CME through its surveillance of its markets, including its surveillance of the CME bitcoin futures market.<sup>44</sup>

The Exchange states that, given the consistently high correlation between the CME bitcoin futures market and the spot bitcoin market, as confirmed by the Commission through robust correlation analysis, the Commission was able to conclude that such surveillance sharing agreements could reasonably be “expected to assist in surveilling for fraudulent and manipulative acts and

practices in the specific context of the [Bitcoin ETPs].”<sup>45</sup>

In light of surveillance measures related to both options and futures as well as the underlying Trust,<sup>46</sup> the Exchange believes that existing surveillance procedures are designed to deter and detect possible manipulative behavior which might potentially arise from listing and trading the proposed options on the Trust. Further, the Exchange represents that it will implement any new surveillance procedures it deems necessary to effectively monitor the trading of options on the Trust.

The Exchange has also analyzed its capacity and represents that it believes the Exchange and Options Price Reporting Authority or “OPRA” have the necessary systems capacity to handle the additional traffic associated with the listing of new series that may result from the introduction of options on the Trust up to the number of expirations currently permissible under the Rules. Because the proposal is limited to one class, the Exchange believes any additional traffic that may be generated from the introduction of the Trust options will be manageable.

## 2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Act and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.<sup>47</sup> Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)<sup>48</sup> requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with the Section (6)(b)(5)<sup>49</sup> requirement that the rules of an exchange not be designed

<sup>43</sup> Section 19(g)(1) of the Act, among other things, requires every SRO registered as a national securities exchange or national securities association to comply with the Act, the rules and regulations thereunder, and the SRO’s own rules, and, absent reasonable justification or excuse, enforce compliance by its members and persons associated with its members. See 15 U.S.C. 78q(d)(1) and 17 CFR 240.17d–2. Section 17(d)(1) of the Act allows the Commission to relieve an SRO of certain responsibilities with respect to members of the SRO who are also members of another SRO (“common members”). Specifically, Section 17(d)(1) allows the Commission to relieve an SRO of its responsibilities to: (i) receive regulatory reports from such members; (ii) examine such members for compliance with the Act and the rules and regulations thereunder, and the rules of the SRO; or (iii) carry out other specified regulatory responsibilities with respect to such members.

<sup>44</sup> See Bitcoin ETP Order, 89 FR 3010–11.

<sup>45</sup> See Bitcoin ETP Order, 89 FR 3010–11.

<sup>46</sup> See Securities Exchange Act Release No. 99295 (January 8, 2024), 89 FR 2321, 2334–35 (January 12, 2024) (SR–NASDAQ–2023–016) (Notice of Filing of Amendment No. 1 to a Proposed Rule Change To List and Trade Shares of the iShares Bitcoin Trust Under Nasdaq Rule 5711(d)).

<sup>47</sup> 15 U.S.C. 78f(b).

<sup>48</sup> 15 U.S.C. 78f(b)(5).

<sup>49</sup> *Id.*

<sup>41</sup> See <https://companiesmarketcap.com/usa/largest-companies-in-the-usa-by-market-cap/>.

<sup>42</sup> The surveillance program includes patterns for price and volume movements and post-trade surveillance patterns (e.g., spoofing, marking the close, ping).

to permit unfair discrimination between customers, issuers, brokers, or dealers.

In particular, the Exchange believes that the proposal to list and trade options on the Trust will remove impediments to and perfect the mechanism of a free and open market and a national market system and, in general, protect investors because offering options on the Trust will provide investors with a greater opportunity to realize the benefits of utilizing options on an ETF based on spot bitcoin, including cost efficiencies and increased hedging strategies. The Exchange believes that offering options on a competitively priced ETF based on spot bitcoin will benefit investors by providing them with an additional, relatively lower-cost risk management tool, allowing them to manage, more easily, their positions and associated risks in their portfolios in connection with exposure to spot bitcoin. Today, the Exchange lists options on other commodity ETFs structured as a trust, which essentially offer the same objectives and benefits to investors, and for which the Exchange has not identified any issues with the continued listing and trading of options on those ETFs.

The Exchange also believes the proposal to permit options on the Trust will remove impediments to and perfect the mechanism of a free and open market and a national market system, because options on the Trust will comply with current Exchange Rules. Options on the Trust must satisfy the initial listing standards and continued listing standards currently in the Exchange Rules, applicable to options on all ETFs, including options on other commodity ETFs already deemed appropriate for options trading on the Exchange pursuant to Exchange Rule 19.3(i). Additionally, as demonstrated above, the Trust is characterized by a substantial number of shares that are widely held and actively traded. Further, Exchange Rules that currently govern the listing and trading of options on ETFs, including permissible expirations, strike prices, minimum increments, position and exercise limits (as proposed herein), and margin requirements, will govern the listing and trading of options on the Trust. The proposed position and exercise limits for options on the Trust is 25,000 contracts. These position and exercise limits are the lowest position and exercise limits available in the options industry, are extremely conservative and more than appropriate given the Trust's market capitalization, average daily volume, and high number of outstanding shares. The proposed

position limit, and exercise limit, is consistent with the Act as it addresses concerns related to manipulation and protection of investors because, as demonstrated above, the position limit (and exercise limit) is extremely conservative and more than appropriate given the Trust is actively traded. In support of the proposed position and exercise limits for options on the Trust is 25,000 contracts, the Exchange is citing the in depth analysis ISE did in its filing. As noted above, in the IBIT Approval Order, ISE considered the: (i) Trust's market capitalization and ADV, and prospective position limit in relation to other securities; (ii) market capitalization of the entire bitcoin market in terms of exercise risk and availability of deliverables; (iii) proposed position limit by comparing it to position limits for derivative products regulated by the CFTC; and (iv) supply of bitcoin. Based on the Exchange's review of IBIT Approval Order, the Exchange believes that setting position and exercise limits for options on the Trust of 25,000 contracts is more than appropriate for the Trust. The proposed position and exercise limits reasonably and appropriately balance the liquidity provisioning in the market against the prevention of manipulation. The Exchange believes these proposed limits are effectively designed to prevent an individual customer or entity from establishing options positions that could be used to manipulate the market of the underlying as well as the Bitcoin market.<sup>50</sup>

The Exchange represents that it has the necessary systems capacity to support options on the Trust. The Exchange believes that its existing surveillance and reporting safeguards are designed to deter and detect possible manipulative behavior which might arise from listing and trading options on ETFs, including the Trust options. Today, the Exchange has an adequate surveillance program in place for options. The Exchange intends to apply those same program procedures to options on the Trust that it applies to the Exchange's other options products.<sup>51</sup> The Exchange's staff will have access to the surveillance programs conducted by its affiliate exchange, MEMX Equities, with respect to the underlying Trust when conducting surveillances for market abuse or manipulation in the options on the

Trust. The Exchange will review activity in the underlying Trust when conducting surveillances for market abuse or manipulation in the options on the Trust. Additionally, the Exchange is a member of the ISG under the Intermarket Surveillance Group Agreement. ISG members work together to coordinate surveillance and investigative information sharing in the stock, options, and futures markets. In addition to obtaining surveillance data from MEMX Equities, the Exchange will be able to obtain information from Nasdaq, LLC and other markets through ISG. In addition, the Exchange has a Regulatory Services Agreement with FINRA. Pursuant to a multi-party 17d-2 joint plan, all options exchanges allocate regulatory responsibilities to FINRA to conduct certain options-related market surveillance that are common to rules of all options exchanges.<sup>52</sup>

The underlying shares of spot bitcoin ETPs, including the Trust, are also subject to safeguards related to addressing market abuse and manipulation. As the Commission stated in Bitcoin ETP Order:

Each Exchange has a comprehensive surveillance-sharing agreement with the CME via their common membership in the Intermarket Surveillance Group. This facilitates the sharing of information that is available to the CME through its surveillance of its markets, including its surveillance of the CME bitcoin futures market.<sup>53</sup>

The Exchange states that, given the consistently high correlation between the CME bitcoin futures market and the spot bitcoin market, as confirmed by the Commission through robust correlation analysis, the Commission was able to conclude that such surveillance sharing agreements could reasonably be "expected to assist in surveilling for fraudulent and manipulative acts and

<sup>50</sup> See Securities Exchange Act Release No. 39489 (December 24, 1997), 63 FR 276 (January 5, 1998) (SRCBOE-1997-11).

<sup>51</sup> The surveillance program includes patterns for price and volume movements and post-trade surveillance patterns (e.g., spoofing, marking the close, ping).

<sup>52</sup> Section 19(g)(1) of the Act, among other things, requires every SRO registered as a national securities exchange or national securities association to comply with the Act, the rules and regulations thereunder, and the SRO's own rules, and, absent reasonable justification or excuse, enforce compliance by its members and persons associated with its members. See 15 U.S.C. 78q(d)(1) and 17 CFR 240.17d-2. Section 17(d)(1) of the Act allows the Commission to relieve an SRO of certain responsibilities with respect to members of the SRO who are also members of another SRO ("common members"). Specifically, Section 17(d)(1) allows the Commission to relieve an SRO of its responsibilities to: (i) receive regulatory reports from such members; (ii) examine such members for compliance with the Act and the rules and regulations thereunder, and the rules of the SRO; or (iii) carry out other specified regulatory responsibilities with respect to such members.

<sup>53</sup> See *supra* note 46.



practices in the specific context of the [Bitcoin ETPs].”<sup>54</sup>

In light of surveillance measures related to both options and futures as well as the underlying Trust,<sup>55</sup> the Exchange believes that existing surveillance procedures are designed to deter and detect possible manipulative behavior which might potentially arise from listing and trading the proposed options on the Trust. Further, the Exchange represents that it will implement any new surveillance procedures it deems necessary to effectively monitor the trading of options on the Trust.

Finally, the Commission has previously approved the listing and trading of options on other commodity ETFs structured as a trust, such as SPDR<sup>®</sup> Gold Trust,<sup>56</sup> the iShares COMEX Gold Trust<sup>57</sup> the iShares Silver Trust,<sup>58</sup> the ETFS Gold Trust,<sup>59</sup> and the ETFS Silver Trust.<sup>60</sup>

### *B. Self-Regulatory Organization's Statement on Burden on Competition*

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. In this regard and as indicated above, the Exchange notes that the rule change is being proposed as a competitive response to filings submitted by ISE.<sup>61</sup>

The Exchange does not believe that the proposed rule change will impose

any burden on intramarket competition that is not necessary or appropriate in furtherance of the purposes of the Act as options on the Trust will be subject to initial listing standards and continued listing standards the same as other options on ETFs listed on the Exchange. Further, options on the Trust will be subject to Exchange Rules that currently govern the listing and trading of options on ETFs, including permissible expirations, strike prices, minimum increments, position and exercise limits (including as proposed herein), and margin requirements. Options on the Trust will be equally available to all market participants who wish to trade such options. Also, and as stated above, the Exchange already lists options on other commodity ETFs structured as a trust.

The Exchange does not believe that the proposal to list and trade options on the Trust will impose any burden on intermarket competition that is not necessary or appropriate in furtherance of the purposes of the Act. To the extent that permitting options on the Trust to trade on the Exchange may make the Exchange a more attractive marketplace to market participants, such market participants are free to elect to become market participants on the Exchange. Additionally, other options exchanges are free to amend their listing rules, as applicable, to permit them to list and trade options on the Trust. The Exchange believes that the proposed rule change may relieve any burden on, or otherwise promote, competition as it is designed to increase competition for order flow on the Exchange in a manner that is beneficial to investors by providing them with a lower-cost option to hedge their investment portfolios. The Exchange notes that it operates in a highly competitive market in which market participants can readily direct order flow to competing venues that offer similar products. Ultimately, the Exchange believes that offering options on the Trust for trading on the Exchange will promote competition by providing investors with an additional, relatively low-cost means to hedge their portfolios and meet their investment needs in connection with spot bitcoin prices and bitcoin related products and positions.

### *C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others*

The Exchange neither solicited nor received comments on the proposed rule change.

### **III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action**

Because the foregoing proposed rule change does not: (i) significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act<sup>62</sup> and Rule 19b-4(f)(6) thereunder.<sup>63</sup>

A proposed rule change filed pursuant to Rule 19b-4(f)(6) under the Act normally does not become operative for 30 days after the date of its filing. However, Rule 19b-4(f)(6)(iii)<sup>64</sup> permits the Commission to designate a shorter time if such action is consistent with the protection of investors and the public interest. The Exchange has asked the Commission to waive the 30-day operative delay so that the proposal may become operative immediately upon filing. The Commission previously approved the listing of options on the Trust.<sup>65</sup> The Exchange has provided information regarding the underlying Trust, including, among other things, information regarding trading volume, the number of beneficial holders, and the market capitalization of the Trust. The proposal also establishes position and exercise limits for options on the Trust and provides information regarding the surveillance procedures that will apply to options on the Trust. The Commission believes that waiver of the operative delay could benefit investors by providing an additional venue for trading options on the Trust. Therefore, the Commission believes that waiver of the 30-day operative delay is consistent with the protection of investors and the public interest. Accordingly, the Commission hereby waives the 30-day operative delay and designates the proposed rule change operative upon filing.<sup>66</sup>

At any time within 60 days of the filing of such proposed rule change, the

<sup>62</sup> 15 U.S.C. 78s(b)(3)(A).

<sup>63</sup> 17 CFR 240.19b-4(f)(6). In addition, Rule 19b-4(f)(6)(iii) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Commission waives this requirement.

<sup>64</sup> 17 CFR 240.19b-4(f)(6)(iii).

<sup>65</sup> See *supra* note 3.

<sup>66</sup> For purposes only of waiving the 30-day operative delay, the Commission has also considered the proposed rule's impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

<sup>54</sup> See Bitcoin ETP Order, 89 FR 3010-11.

<sup>55</sup> See Securities Exchange Act Release No. 99295 (January 8, 2024), 89 FR 2321, 2334-35 (January 12, 2024) (SR-NASDAQ-2023-016) (Notice of Filing of Amendment No. 1 to a Proposed Rule Change To List and Trade Shares of the iShares Bitcoin Trust Under Nasdaq Rule 5711(d)).

<sup>56</sup> See Securities Exchange Act Release No. 57897 (May 30, 2008), 73 FR 32061 (June 5, 2008) (SR-Amex2008-15; SR-CBOE-2005-11; SR-ISE-2008-12; SR-NYSEArca-2008-52; and SRPhlx-2008-17) (Order Granting Approval of a Proposed Rule Change, as Modified, and Notice of Filing and Order Granting Accelerated Approval of Proposed Rule Changes, as Modified, Relating to Listing and Trading Options on the SPDR Gold Trust).

<sup>57</sup> See Securities Exchange Act Release No. 59055 (December 4, 2008), 73 FR 75148 (December 10, 2008) (SR-Amex-2008-68; SR-BSE-2008-51; SR-CBOE-2008-72; SR-ISE-2008-58; SRNYSEArca-2008-66; and SR-Phlx-2008-58) (Notice of Filing and Order Granting Accelerated Approval of Proposed Rule Changes Relating to the Listing and Trading Options on Shares of the iShares COMEX Gold Trust and the iShares Silver Trust).

<sup>58</sup> *Id.*

<sup>59</sup> See Securities Exchange Act Release No. 61483 (February 3, 2010), 75 FR 6753 (February 10, 2010) (SRCBOE-2010-007; SR-ISE-2009-106; SR-NYSEAmex-2009-86; and SR-NYSEArca-2009-110) (Order Granting Approval of Proposed Rule Changes and Notice of Filing and Order Granting Accelerated Approval of a Proposed Rule Change Relating to Listing and Trading Options on the ETFS Gold Trust and the ETFS Silver Trust).

<sup>60</sup> *Id.*

<sup>61</sup> See *supra* note 5.

Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act.

#### IV. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

##### Electronic Comments

- Use the Commission's internet comment form (<https://www.sec.gov/rules/sro.shtml>); or
- Send an email to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include file number SR-MEMX-2024-45 on the subject line.

##### Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090.

All submissions should refer to file number SR-MEMX-2024-45. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (<https://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. Do not include personal identifiable information in submissions; you should submit only information that you wish to make available publicly. We may redact in part or withhold entirely from publication submitted material that is obscene or subject to copyright protection. All submissions should refer to file number SR-MEMX-2024-45 and should be

submitted on or before December 24, 2024.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>67</sup>

**Stephanie J. Fouse,**

*Assistant Secretary.*

[FR Doc. 2024-28345 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

#### SECURITIES AND EXCHANGE COMMISSION

[Investment Company Act Release No. 35402; File No. 812-15574]

##### Antares Private Credit Fund and Antares Capital Credit Advisers LLC

November 27, 2024.

**AGENCY:** Securities and Exchange Commission ("Commission").

**ACTION:** Notice.

Notice of an application under section 6(c) of the Investment Company Act of 1940 (the "Act") for an exemption from sections 18(a)(2), 18(c), 18(i) and section 61(a) of the Act.

**SUMMARY OF APPLICATION:** Applicants request an order to permit certain registered closed-end investment companies that have elected to be regulated as business development companies to issue multiple classes of shares with varying sales loads and asset-based distribution and/or service fees.

**APPLICANTS:** Antares Private Credit Fund and Antares Capital Credit Advisers LLC.

**FILING DATES:** The application was filed on May 15, 2024, and amended on November 15, 2024.

##### HEARING OR NOTIFICATION OF HEARING:

An order granting the requested relief will be issued unless the Commission orders a hearing. Interested persons may request a hearing on any application by emailing the SEC's Secretary at [Secretaries-Office@sec.gov](mailto:Secretaries-Office@sec.gov) and serving the Applicants with a copy of the request by email, if an email address is listed for the relevant Applicant below, or personally or by mail, if a physical address is listed for the relevant Applicant below.

Hearing requests should be received by the Commission by 5:30 p.m. on December 23, 2024, and should be accompanied by proof of service on the Applicants, in the form of an affidavit or, for lawyers, a certificate of service. Pursuant to rule 0-5 under the Act, hearing requests should state the nature of the writer's interest, any facts bearing

upon the desirability of a hearing on the matter, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by emailing the Commission's Secretary.

**ADDRESSES:** The Commission: [Secretaries-Office@sec.gov](mailto:Secretaries-Office@sec.gov). The Applicants: Michael B. Levitt, Antares Capital LP, [mike.levitt@antares.com](mailto:mike.levitt@antares.com); William J. Bielefeld, Esq., Dechert LLP, [william.bielefeld@dechert.com](mailto:william.bielefeld@dechert.com); Nadeea Zakaria, Esq., Dechert LLP, [nadeea.zakaria@dechert.com](mailto:nadeea.zakaria@dechert.com).

##### FOR FURTHER INFORMATION CONTACT:

Christine Y. Greenlees, Senior Counsel, or Lisa Reid Ragen, Branch Chief, at (202) 551-6825 (Division of Investment Management, Chief Counsel's Office).

**SUPPLEMENTARY INFORMATION:** For Applicants' representations, legal analysis, and condition, please refer to Applicants' first amended and restated application, dated November 15, 2024, which may be obtained via the Commission's website by searching for the file number at the top of this document, or for an Applicant using the Company name search field, on the SEC's EDGAR system. The SEC's EDGAR system may be searched at <https://www.sec.gov/edgar/searchedgar/legacy/companysearch.html>. You may also call the SEC's Public Reference Room at (202) 551-8090.

For the Commission, by the Division of Investment Management, under delegated authority.

**Stephanie J. Fouse,**

*Assistant Secretary.*

[FR Doc. 2024-28334 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

#### SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-101754; File No. SR-OCC-2024-011]

##### Self-Regulatory Organizations; The Options Clearing Corporation; Order Granting Approval of Proposed Rule Change, as Modified by Partial Amendment No. 1, by The Options Clearing Corporation Concerning Its Stock Loan Programs

November 26, 2024.

##### I. Introduction

On August 22, 2024, the Options Clearing Corporation ("OCC") filed with the Securities and Exchange Commission ("Commission") the proposed rule change SR-OCC-2024-011 pursuant to Section 19(b) of the Securities Exchange Act of 1934

<sup>67</sup> 17 CFR 200.30-3(a)(12), (59).

(“Exchange Act”)<sup>1</sup> and Rule 19b-4<sup>2</sup> thereunder. The proposed rule change would address limitations in the structure of OCC’s Stock Loan/Hedge (“Hedge”) Program and Market Loan Program (together, the “Stock Loan Programs”) by creating the framework for a single, enhanced program designed to support current and future needs. On September 3, 2024, OCC filed a partial amendment (“Partial Amendment No. 1”) to the proposed rule change.<sup>3</sup> The Commission published a notice for public comment on the proposed rule change, as modified by Partial Amendment No. 1 (hereafter “the Proposed Rule Change”), in the **Federal Register** on September 10, 2024.<sup>4</sup> The Commission has received no comments regarding the Proposed Rule Change. This order approves the Proposed Rule Change.

## II. Description of the Proposed Rule Change

OCC has historically operated two stock lending programs, the Hedge Program and Market Loan Program, which, together, accounted for about 0.02% of OCC’s total volume in 2023.<sup>5</sup> In its capacity as a central counterparty in administering these programs, OCC becomes the lender to every borrower and the borrower to every lender and thus guarantees the return of the full value of cash collateral to the Borrowing Clearing Member and the return of the Loaned Stock (or value of that Loaned Stock) to the Lending Clearing Member. OCC also offers additional guarantees under the Market Loan Program, including dividend equivalent payments and rebate payments. OCC’s Rules and By-Laws govern OCC’s novation of cleared stock loan transactions and provide for processes around stock loan initiation, recordkeeping, returns and recalls, and risk management around stock loans of suspended Clearing Members.

OCC’s current Hedge Program requires a certain set of processes among balancing and reconciliation of transactions. The Market Loan Program, by comparison, does not require the

same processes because of the difference in how transactions are initiated in that program. A recent survey of Clearing Members participating in the Stock Loan programs<sup>6</sup> indicates that most firms have a significant spend for stock loan post-trade and reconciliation processing.<sup>7</sup> Based on such survey responses, OCC believes that a service that can provide operational efficiencies and further reduce manual processing and operational risk would be well received.<sup>8</sup> Additionally, the Hedge and Market Loan Programs differ in their treatment of Canadian Clearing Members. Specifically, a Canadian Clearing Member may participate in the Hedge Program, but not the Market Loan Program because of rules related to certain tax withholding obligations. Separately, OCC has recognized that its current aggregate position-level recordkeeping practices regarding these stock loan programs could be better aligned with the current industry practice of contract-level recordkeeping.<sup>9</sup>

OCC has expressed a desire to consolidate the Hedge Program and Market Loan Program at some point in the future.<sup>10</sup> The immediate proposal is designed to support that initiative by making changes to align the Hedge Program and Market Loan Program as well as changes to address limitations across both Stock Loan Programs, such as aligning to the industry practice of contract-level record keeping. Specifically, OCC proposes to (i) align the Rules for and support transactions under both Stock Loan Programs through contract-level recordkeeping, revisions regarding re-matching matched book positions in suspension across Stock Loan Programs, and revisions regarding mark-to-market

settlement accounts; (ii) conform the terms of Market Loans cleared by OCC more closely to the provisions most commonly included in stock loan transactions executed under standard loan market documents, and provide a uniform guaranty of terms across Market Loans, regardless of how those Market Loans are initiated under the enhanced program; and (iii) clarify and amend processes around the participation of Canadian Clearing Members and other types of Clearing Members in the Stock Loan Programs. Separately, OCC proposes to reorganize, restate, and consolidate provisions of its By-Laws and Rules governing the Stock Loan Programs.

In proposing the immediate changes, OCC expressed the view that its current technology modernization project (“Renaissance”) presents an opportunity to address limitations in the structure of OCC’s Stock Loan Programs and enhance OCC’s stock loan services to support current and future needs.<sup>11</sup>

### A. Limitations of OCC’s Current Stock Loan/Hedge and Market Loan Programs

#### 1. Position Aggregation

Within both Stock Loan programs, OCC maintains records of aggregate positions, rather than following the industry practice of contract-level recordkeeping. OCC calculates margin by aggregating stock loan and borrow positions for the same Eligible Stock. However, stock loans of the same Eligible Stock are not fungible between programs. As a result, all post-trade activity for Hedge Loan positions is performed bilaterally between the original counterparties. For example, the original counterparty Clearing Members to Hedge Program loans must resolve dividend payments or distributions bilaterally, away from OCC. This process of position aggregation complicates margin calculation and bookkeeping, and ultimately increases OCC’s operational risk.

#### 2. Offset and Re-Matching of Matched-Book Positions

Hedge Loan Clearing Members often maintain “Matched-Book Positions,” meaning they hold an account with a

<sup>6</sup> OCC provided survey results as confidential Exhibit 3B to File No. SR-OCC-2024-011.

<sup>7</sup> Notice of Filing, 89 FR 73471, n.31.

<sup>8</sup> *Id.*

<sup>9</sup> See Notice of Filing, 89 FR 73467-68. (“OCC aggregates all stock loan positions and stock borrow positions of a Clearing Member relating to the same Eligible Stock for reporting and margin calculation purposes. OCC separately identifies stock loan and stock borrow positions resulting from each of the Stock Loan Programs, and such positions are not fungible with positions resulting from the other program. Position aggregation in both Stock Loan Programs is a legacy practice and does not follow industry-standard book-keeping practices. Because of position aggregation, certain industry standard post-trade activity must be performed bilaterally away from OCC, such as re-rate transactions that change the rebate rate on an individual loan.”)

<sup>10</sup> Notice of Filing, 89 FR 73469-70. OCC intends to eventually decommission the Hedge Program through a phased program, after which the Market Loan Program would become OCC’s single Stock Loan Program. The immediate proposal, however, does not contemplate the removal of provisions supporting the Hedge Program from OCC’s rules.

<sup>11</sup> See Notice of Filing, 89 FR 73466. Further detail on Renaissance is available at <https://www.theocc.com/company-information/occ-transformation/clearing-risk-and-data-changes>. Renaissance includes the replacement of its current clearance and settlement system (“ENCORE”) with a streamlined operational framework for clearance and settlement (“Ovation”). See Notice of Filing, 89 FR 73466, n. 6. The Proposed Rule Change is not legally dependent on the planned technology changes.

<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> In Partial Amendment No. 1, OCC corrected an error in Exhibit 5A to SR-OCC-2024-011 without changing the substance of the proposed rule change. Partial Amendment No. 1 does not materially alter the substance of the proposed rule change or raise any novel regulatory issues.

<sup>4</sup> Securities Exchange Act Release No. 100930 (Sept. 4, 2024), 89 FR 73466 (Sept. 10, 2024) (File No. SR-OCC-2024-011) (“Notice of Filing”).

<sup>5</sup> Historical volume is available at <https://www.theocc.com/market-data/market-data-reports/volume-and-open-interest/historical-volume-statistics>.

stock loan position to one Hedge Clearing Member as well as a borrow position to another Hedge Clearing Member for the same or fewer shares. If a Hedge Clearing Member with a matched book defaults, OCC may re-match the loan and borrow positions to other Hedge Loan Clearing Members to avoid price dislocation from manually buying in and selling out of the offsetting positions of the defaulting Hedge Clearing Member. However, such re-matching is not currently supported separately in the Market Loan Program, and thus the loan and borrow positions of a defaulting Hedge Clearing Member cannot be re-matched to a Market Loan Clearing Member.

### 3. Stock Loan Initiation

Under the Hedge Program, Prospective Lending and Borrowing Clearing Members first negotiate terms bilaterally before sending them to the Depository Trust Company (“DTC”) for settlement, and DTC then sends a specified number of shares and amount of cash collateral to OCC for clearing and guarantee of performance.<sup>12</sup> This process adds complexity to balancing and reconciliation under the current Hedge Program.<sup>13</sup>

### 4. Scope of OCC’s Guaranty

OCC guarantees the return of the collateral and borrowed stock of both Hedge Program and Market Loan Program loans. However, for Market Loan Program transactions, OCC also provides a limited guaranty of substitute dividend and rebate payments based on instructions from the Loan Market based on the amount of margin collected. OCC does not offer the same guaranty for loans made under the Hedge Program, which creates operational complexity.

### 5. Collateralization Rate

As part of clearing, OCC marks-to-market payments for cleared stock loans on a daily basis. The payments are made between Clearing Members based on the value of the loaned securities. However, the loans are marked-to-market differently depending on whether they originated from the Hedge Program or the Market Loan Program. In the Hedge Program, loans are collateralized 100 or 102 percent, and the preferred rounding is dependent on the bilateral Master

Securities Loan Agreement (“MSLA”) between the original counterparties. In the Market Program, all loans are collateralized 102 percent, rounding to the nearest dollar. In both programs, settlements are generally combined and netted against other OCC settlement obligations, and Clearing Member positions are factored into that Clearing Member’s overall margin and guaranty fund contribution.

### 6. Dividends and Distributions

OCC ordinarily processes Market Loan Program dividend equivalent payments through DTC’s Dividend Service. If, however, a Loan Market notifies OCC that the dividend or distribution for a particular Market Loan is not tracked by DTC’s Dividend Service (or if OCC uses its discretion to remove a Market Loan from the DTC Dividend Service), the dividend equivalent payments are made through OCC’s cash settlement system the day after the expected payment date. For such dividend payments, the Loan Market calculates the amount outside of DTC’s Dividend Service, and for non-cash dividends and distributions, the Loan Market may set an equivalent cash settlement value for OCC to administer. As part of clearing, OCC guarantees dividend equivalent payments from a defaulting Clearing Member, but only to the extent OCC has collected margin equal to such dividend equivalent according to the instructions from the Loan Market. Additionally, OCC currently has no responsibility to verify the accuracy of the Loan Market’s calculation.

### 7. Termination of Stock Loans

Again, because of the differences in stock loan origination, OCC handles stock loan terminations differently depending on whether they are Hedge Loans or Market Loans. Hedge Loans are terminated through DTC when: (1) a Borrowing Clearing Member instructs DTC to transfer a specified quantity of Loaned Stock to the Lending Clearing Member in exchange for payment of the settlement price from the Lending Clearing Member, or (2) the Lending Clearing Member terminates all or part of the loan with the Borrowing Clearing Member. Initiating returns through DTC for the Hedge Program can break positions if the return transactions are not coded properly.

As with dividend distributions, Market Loans are terminated via instruction from a Clearing Member through the Loan Market to recall or return Loaned Stock. The Loan Market then instructs OCC, OCC validates the

request, and OCC sends a pair of orders to DTC to initiate the transfer.

Where a Clearing Member under either program fails to return the stock or pay the settlement amount, the other counterparty may choose to execute a “buy-in” or “sell-out” of the Loaned Stock. Neither of the current Stock Loan Programs enables OCC to administer buy-ins or sell-outs. After execution of the buy-in/sell-out, the initiating Clearing Member provides notice to OCC and its counterparty for Hedge Loans and to the Loan Market for Market Loans. Termination is complete once OCC records the termination.

### 8. Canadian Clearing Members

Canadian Clearing Members may participate in the Hedge Program if they appoint CDS Clearing and Depository Services Inc. (“CDS”) to act as agent with DTC and the National Securities Clearing Corporation (“NSCC”) to provide cross-border clearance and settlement with U.S. counterparties. Canadian Clearing Members cannot participate in the Market Loan Program.

Canadian Hedge Clearing Members are subject to additional restrictions to participate in OCC’s Hedge Program. Normally, federal tax rules impose a 30% withholding on “dividend equivalent” payments to non-U.S. persons for certain derivatives that reference U.S. equities. OCC has no current tax withholding or reporting obligations for Canadian Hedge Clearing Members, because substitute dividend payments are handled bilaterally between Hedge Clearing Members. Consequently, OCC requires that Canadian Hedge Clearing Members establish that their activity will not result in the imposition of taxes or withholding, and they are prohibited from entering into transactions that would impose taxes or withholding.

#### B. Proposed Changes to OCC’s Stock Loan Program Framework

##### 1. Consolidation of the Stock Loan Programs

OCC proposes to consolidate its Stock Loan Programs into a single stock loan program over the course of three phases. This Proposed Rule Change covers the first and second phases. The third phase is not part of this Proposed Rule Change and would require a separate filing with the Commission.

The first phase would (1) amend the rules related to the Market Loan Program to allow it to eventually become OCC’s single stock loan program, and (2) update the Hedge Program and Market Loan Program to align with the implementation of

<sup>12</sup> OCC currently limits settlement of daily mark-to-market of cash collateral to the Clearing Member’s firm account or combined Market-Makers’ account. See OCC Rule 2201(a).

<sup>13</sup> See Notice of Filing, 89 FR 73467. On the other hand, Market Loan transactions match on an electronic platform called a Loan Market. Then the Loan Market sends the two separate linked instructions to DTC detailing what stock and cash collateral should move between accounts at OCC.

Ovation, OCC's new system for clearance and settlement. Such changes include contract-level recordkeeping, re-matching matched book positions in suspension across both Stock Loan Programs, and expanding bilaterally-negotiated Market Loans. These changes are designed to facilitate and encourage Hedge Clearing Members to submit new bilateral stock loan transactions through the Market Loan Program.<sup>14</sup> Hedge Clearing Members would be required to provide the appropriate documentation and certifications, similar to those required of Market Loan Clearing Members, and to submit to certification testing before utilizing the Market Loan program.<sup>15</sup>

During the second phase, OCC will announce that it will no longer accept new loans through the Hedge Program, but will continue to support existing Hedge Loans until they naturally terminate. To facilitate this change, OCC proposes to adopt new Rule 2213(e)(2), which would authorize OCC to stop accepting new Hedge Loans. Additionally, OCC proposes to maintain its existing authority to terminate outstanding Hedge Loans upon two business days' written notice to Clearing Members based on several enumerated reasons, one of which is OCC's impending termination of this line of business.<sup>16</sup> Under proposed Rule 2213(e)(2), OCC's Chief Executive Officer or Chief Operating Officer would be authorized to approve the decision for OCC to cease accepting new Hedge Loans based on factors including, but not limited to, the number of participants that are able to conduct business under the Market Loan Program, the amount of transactions

<sup>14</sup> Based on a survey of all Clearing Members who participate in OCC's Stock Loan Programs (provided as confidential Exhibit 3B to File No. SR-OCC-2024-011), members have expressed interest in being able to have, for example, the rebate amounts calculated, settled, and guaranteed by OCC—an expansion of services that necessarily would be achieved by the migration from the Hedge Program to the Market Loan Program. See Notice of Filing, 89 FR 73470, n.30. OCC indicated that it anticipates that Clearing Members will be motivated to migrate activity to the Market Loan Program because of the expansion of such services and OCC's expanded guarantee under the Market Loan Program. See Notice of Filing, 89 FR 73470.

<sup>15</sup> OCC is not proposing to require business expansions for Hedge Clearing Members, because they already are approved for stock loan activity, and the business expansion for Market Loan Program participation aims to verify proper subscription through a Loan Market, which would no longer be necessary to participate in the Market Loan Program.

<sup>16</sup> The relevant authority to terminate existing loans comes from Section 2(c) of Article XXI of OCC's By-Laws. OCC proposes to move the text of that section of its By-Laws to new Rule 2213(e)(1) as part of the broader reorganization described herein.

flowing through the Market Loan Program, the proportion of loan balances between the Stock Loan/Hedge Program and the Market Loan Program, and feedback from members about when they expect to be ready to migrate fully to the Market Loan Program. OCC is not proposing to remove the rules related to the Hedge Program at this time.<sup>17</sup>

## 2. Proposed Changes Across Both Stock Loan Programs

*a. Contract-Level Recordkeeping.* As stated in Section II.A.1, above, OCC currently aggregates stock loan and borrow positions for the same Eligible Stock, which is not the industry standard of contract-level recordkeeping. To alleviate inaccuracies and, at times, lack of information in OCC's bookkeeping practices, OCC proposes to eliminate this legacy practice. Under the new contract-based approach, each stock loan position or stock borrow position would be a distinct contract recorded in each Clearing Member account. Every new recorded loan will generate a new stock borrow position and stock loan position for the number of shares lent and borrowed. By maintaining stock loan positions and stock borrow positions at the contract level, OCC would be able to record additional terms, such as (a) rebate rate; (b) whether the rebate rate is a fixed or a floating value (and if floating the interest rate benchmark); and (c) end date, if it is a term loan. Clearing Members would not be required to submit such additional terms. OCC would assume that no such terms exist, unless otherwise directed by its Clearing Members. OCC believes that contract-level recordkeeping would allow Clearing Members to see more precisely the contracts with shares lent by lender and borrower.<sup>18</sup>

This contract-level recordkeeping would be implemented in OCC's rules by proposed amendments to Article XXI, Section 2 (Hedge Program) and Article XXIA, Section 5 (Market Loan Program) of OCC's By-Laws, retained portions of which would migrate to become OCC Rules 2203 and 2206A, respectively. Under these proposed revisions, OCC would delete the rules requiring the aggregation of positions and eliminate text providing that OCC shall identify stock loan and stock

<sup>17</sup> OCC proposes, however, to amend its Rules to avoid ambiguity by using "Hedge Loan" instead of "Stock Loan" when referring to Stock Loans under the Hedge Program, unless in reference to Stock Loans under either of the Stock Loan Programs, consistent with the current definition of that term in Article I of the By-Laws. See Notice of filing, 89 FR 73470.

<sup>18</sup> See Notice of filing, 89 FR 73477.

borrow positions resulting from Hedge Loans separately from positions resulting from Market Loans. Because OCC proposes to eliminate position aggregation altogether, the latter prohibition against aggregating positions across programs would no longer be relevant.

As noted above, the proposed contract-level recordkeeping would allow OCC to record additional terms at the contract level. Specifically, OCC proposes to change Article XXI, Section 2(b) and Article XXIA, Section 5(a) of OCC's By-Laws<sup>19</sup> to allow Clearing Members to provide additional terms beyond those already required by the rules.<sup>20</sup> The proposed changes regarding such optional terms, which are not associated with OCC's guaranty (*i.e.*, rebate rate and interest rate benchmark with respect to Hedge Loans, and loan term with respect to both Hedge Loans and Market Loans), would not impose any additional obligations on OCC. Rather, the proposed changes would facilitate the optional inclusion of additional terms between the parties that survive OCC's novation and would be recorded in OCC's system for the Clearing Member's convenience.<sup>21</sup>

To further accommodate contract-level recordkeeping, OCC proposes the following conforming changes:

- Current Interpretation and Policy .01 to OCC Rules 2201 and 2201A (*i.e.*, proposed OCC Rules 2206(b) and 2206A(d)), which concern the transfer of stock loan positions or stock borrow positions between Clearing Member accounts, would be amended to delete the phrase "all or any portion of" as it relates to stock loan or stock borrower positions, and add the text "provided, that any such transfer will result in the transfer of all shares related to the relevant stock loan position or stock borrow position." Accordingly, any transfer of a stock loan position or stock borrow position, each representing an individual contract, would be for all shares that are the subject of the contract.

- Current Interpretation and Policy .02 to OCC Rule 2201 (*i.e.*, proposed OCC Rule 2206(c)(1)), which concerns how OCC would apply Hedge Loan return instructions received from DTC to a Clearing Member's default account,

<sup>19</sup> OCC proposes to move Article XXI, Section 2(b) and Article XXIA, Section 5(a) of its By-Laws to new Rules 2203(d)(2)(A) and 2206A(b)(2)(E), respectively, without changes other than those explicitly described in the Notice of Filing.

<sup>20</sup> OCC is not proposing to change the required terms already defined in its rules (*e.g.*, identification of Eligible Stock, number of shares loaned, amount of collateral received, identity of lending and borrowing Clearing Members).

<sup>21</sup> *Id.*

would be modified to eliminate the ability of Clearing Members to designate OCC accounts in DTC delivery orders. Instead, returns of shares will be reflected in the Clearing Member's default account. To support the shift to contract-level recordkeeping, OCC also would add proposed OCC Rule 2206(c)(2), which would provide that returns will decrease the number of shares borrowed beginning with the oldest Hedge Loan between the Borrowing Clearing Member and the Lending Clearing Member on OCC's books and records. If the return exhausts the oldest Hedge Loan, OCC would decrement to the next oldest.

- Current Interpretation and Policy .02 to OCC Rule 2201A (*i.e.*, proposed OCC Rule 2206A(e)), which concerns how Market Loan return instructions would be applied to a Clearing Member's accounts, would be amended to reflect that, if there are insufficient shares in the account designated by the delivery order submitted to OCC, or in the default account if the delivery order did not specify an account, OCC would reject the return instruction rather than fulfill the return to the extent of the shares in the designated or default account, as applicable. If an account was designated in the delivery order, OCC would fulfill the return based only on that account and would reject the return instruction if sufficient shares were not available in that account rather than applying shares in the default account to cover the excess.

- Current OCC Rule 2209A(a)(2) (*i.e.*, proposed OCC Rule 2216A(a)(5)), which concerns the termination of Market Loans upon receipt of end-of-day information from DTC concerning return or recall delivery orders, would be amended to delete the phrase "and reduce the respective Clearing Member's open stock loan and stock borrow positions accordingly," which refers to adjustments required for aggregated stock loan and stock borrow positions. OCC would also remove the phrase "the end of the day" with respect to the stock loan activity files it receives from DTC because OCC receives and processes such information from DTC throughout the business day.

*b. Aligning Mark-to-Market Settlement Accounts.* As described above, in Section II.A.3, OCC currently limits settlement of daily mark-to-market of cash collateral to the Clearing Member's firm account or combined Market-Makers' account. OCC proposes to change its rules such that cash settlement would occur in the account in which the stock loan or stock borrow position is held, to reflect changes in the stock loan market that facilitate fully

paid for lending programs, which have developed over the last two decades to allow customers to earn returns on their portfolios by allowing their broker to lend their shares.<sup>22</sup>

The proposed change would align mark-to-market cash settlements with positions by deleting current OCC Rules 2201(a)(iii) and 2201A(a)(iii), as relocated to proposed OCC Rules 2207(a)(1)(C) and 2207A(a)(1)(C). The text of these provisions currently requires Clearing Members to provide OCC with standing instructions to identify the Clearing Member's firm accounts or combined Market-Makers' account from which mark-to-market payments are to be made. However, these provisions would not be necessary under the Proposed Rule Change because OCC would settle the mark-to-market payments in whichever account the stock loan or stock borrow position is held. OCC also would amend current Rules 2204(a) and 2204A(a), the relevant portions of which would be renumbered as proposed Rules 2209(a) and 2209A(a), respectively, to provide that any mark-to-market payment shall be made in the account in which the Hedge Loan or Market Loan is held.

OCC proposes to delete the last clause to Interpretation and Policy .04 to Rule 1104, which concerns the use of a Liquidating Settlement Account to satisfy mark-to-market obligations arising from a suspended Clearing Member's stock loan or borrow positions in customers' accounts. That clause provides for the use of the Liquidating Settlement Account, notwithstanding that such mark-to-market payments may settle in another account under current Rules 2201(a) and 2201A(a). This clarifying clause would no longer be relevant because of the alignment of settlement with the accounts in which the positions are held.<sup>23</sup>

*c. Simplifying Mark-to-Market Accounts.* As a further update to mark-to-market settlement accounts and to help facilitate OCC's planned switch from loan aggregation to contract-level recordkeeping, OCC proposes to change its mark-to-market calculation to focus on the change to the contract value of a Clearing Member's Stock Loans. Currently, the mark-to-market calculation focuses on the value of the loaned shares of stock by taking the quantity of stock that is on loan each morning and marking it to a closing price each night. Quantities of stock that correspond to new loans put on during

the day are also marked to the end-of-day closing price.

Now, OCC proposes to amend current Rules 2204 and 2204A, to be renumbered as proposed Rules 2209 and 2209A, respectively. Proposed OCC Rules 2209(b) and 2209A(b) would provide that the mark-to-market payment will be the amount necessary to cause the amount of Collateral to be equal to the Collateral requirement applicable to the Stock Loan. For Hedge Loans, the Collateral requirement is either 100 or 102 percent of the mark-to-market value of the Loaned Stock, depending on which percentage the parties selected when initiating the Hedge Loan, as described in Section II.A.5., above. For Market Loans, as described below in Section II.B.3.c., the Collateral requirement would be fixed at 102 percent of the value of the Loaned Stock, which is the collateralization for all Market Loans currently.

*d. Re-Matching Matched Book Positions in Suspension Across Stock Loan Programs.* As stated above, in Section II.A.2., OCC's current framework does not contemplate the re-matching of Matched-Book Positions across OCC's Stock Loan Programs in the event of a Clearing Member default. The Proposed Rule Change would extend OCC's authority to close out and re-establish the Matched-Book Positions of a suspended Clearing Member to the Market Loan Program and would allow re-matching in suspension across the Hedge and Market Loan Programs. Under the current OCC Rule 2212, OCC has authority to terminate Matched-Book Positions by offset and re-matching with other Clearing Members. OCC proposes to extend its re-matching authority and allow for re-matching across programs by inserting proposed OCC Rule 2219A, which would be similar in structure and content to current OCC Rule 2212.

Proposed OCC Rule 2219A(a) would provide that, in the event that a suspended Clearing Member has Matched-Book Positions within the Hedge or Market Loan Programs, OCC will, upon notice to affected Clearing Members, close out the suspended Clearing Member's Matched-Book Positions to the greatest extent possible by (1) the termination by offset of stock loan and stock borrow positions that are Matched-Book Positions in the suspended Clearing Member's account(s) and (2) OCC's re-matching in the order of priority in paragraph (c) of proposed OCC Rule 2219A of stock borrow positions for the same number of shares in the same Eligible Stock maintained in a designated account of a Matched-Book Borrowing Clearing

<sup>22</sup> See Notice of filing, 89 FR 73478.

<sup>23</sup> *Id.*

Member against a stock loan position for the same number of shares in the same Eligible Stock maintained in a designated account of a Matched-Book Lending Clearing Member. Under proposed OCC Rule 2219A(b), as under current OCC Rule 2212(b), the Matched-Book Borrowing Clearing Member and Matched-Book Lending Clearing Member would not be required to issue instructions to DTC to terminate the relevant stock loan and stock borrow positions or to initiate new stock loan transactions to reestablish such positions, because the affected positions would be re-matched without requiring the transfer of securities against the payment of settlement prices.

Proposed OCC Rule 2219A(c), as under current OCC Rule 2212(c), would provide that OCC shall make reasonable efforts to re-match Matched-Book Borrowing Clearing Members with Matched-Book Lending Clearing Members that maintain MSLAs executed between them, based upon information provided by Clearing Members to OCC on an ongoing basis. Proposed OCC Rule 2219A(c) would further provide that OCC shall be entitled to rely on, and shall have no responsibility to verify, the MSLA records provided by Clearing Members and on record as of the time of re-matching. Proposed Rule OCC 2219A(c)(1) through (13), which would mirror current OCC Rule 2212(d), would require that the termination by offset and re-matching be done using a matching algorithm in which the Matched-Book Positions of the suspended Clearing Member are first terminated by offset and then the affected Matched-Book Borrowing Clearing Members and Matched-Book Lending Clearing Members are re-matched in order of priority based first upon whether the re-matched Clearing Members have an existing MSLA between them or, in the case of Anonymous Market Loans, can be kept anonymous by re-matching with a Matched-Book Position that is another Anonymous Market Loan initiated through the same Loan Market.<sup>24</sup>

Under this proposed matching algorithm, OCC would first select the largest stock loan or stock borrow position regarding a Disclosed Market Loan for a given Eligible Stock from the suspended Clearing Member's Matched-Book Positions. These selected positions would then be re-matched with the

largest available stock borrow or stock loan position regarding a Disclosed Market Loan for the selected Eligible Stock for which a MSLA exists between a Matched-Book Borrowing Clearing Member and a Matched-Book Lending Clearing Member. OCC would repeat this process until all potential re-matching between Matched-Book Borrowing Clearing Members and Matched-Book Lending Clearing Members with MSLAs is completed for positions within the Hedge Program.

Simultaneously, OCC would perform the same re-matching process within the Market Loan Program for (i) Matched-Book Positions that are Disclosed Market Loans for which a MSLA exists between a Matched-Book Borrowing Clearing Member and a Matched-Book Lending Clearing Member, and (ii) Matched-Book Positions that are Anonymous Market Loans initiated through the same Loan Market. After re-matching to the extent possible within the Market Loan Program based on manner of initiation and trade source, OCC would proceed to re-match Matched-Book Positions within the Market Loan Program for which an MSLA exists between a Matched-Book Borrowing Clearing Member and a Matched-Book Lending Clearing Member, regardless of whether the Matched-Book Position was part of a Disclosed Market Loan or Anonymous Market Loan.

After matching Matched-Book Positions to the extent possible between borrowers and lenders with existing MSLAs in both the Hedge Program and the Market Loan Program, OCC would then select the largest remaining stock loan or stock borrow positions for a given Eligible Stock regardless of whether the position is a Hedge Loan or a Market Loan, and re-match it with the largest available stock borrow or stock loan position for the selected Eligible Stock in the other Stock Loan Program for which an MSLA exists between the lenders and borrowers in the other Stock Loan Program, regardless of whether the Market Loan selected or matched is a Disclosed Market Loan or Anonymous Market Loan. OCC would repeat this process until it has rematched all Matched-Book Positions to the extent possible between parties to existing MSLAs between the two Stock Loan Programs.

After re-matching among lenders and borrowers with existing MSLAs, OCC proposes to repeat the process for all remaining Matched-Book Positions for which MSLAs do not exist between the lenders and borrowers. OCC would first complete such rematching to the extent possible within each program. The re-

matching process would then be repeated for all remaining Matched-Book Positions across the Stock Loan Programs for which MSLAs do not exist between the lenders and borrowers. Remaining positions that are not able to be rematched either within or across programs would then be closed out pursuant to the rules governing close-out of Hedge Loans or Market Loans, as applicable.

Under proposed OCC Rule 2219A(d), as under current OCC Rule 2212(e), in the event Borrowing and Lending Clearing Members are re-matched through this algorithmic process, the pre-defined terms and instructions established by the Lending Clearing Member would govern the re-matched positions pursuant to proposed OCC Rule 2207 for Hedge Loans or proposed Rule 2207A for Market Loans. For Matched-Book Positions re-matched across programs, the resulting re-matched loan would be a Hedge Loan. If the re-matched positions were Anonymous Market Loans, the resulting Loan would be an Anonymous Market Loan. However, if one of the positions was a Disclosed Market Loan or the positions were Anonymous Market Loans initiated through different Loan Markets, the resulting loan would be a Disclosed Market Loan. Going forward, such a Disclosed Market Loan would be deemed to have been initiated through OCC, which would facilitate re-matching within the Market Loan Program for parties who are not subscribers to a Loan Market. Pursuant to proposed OCC Rule 2219A(j), the re-matched Clearing Members may choose to execute an MSLA or close out the re-matched positions in accordance with proposed OCC Rules 2213 or 2216A, as applicable.

Under proposed OCC Rule 2219A(e), which corresponds to the second sentence of current OCC Rule 2212(e), any change in Collateral requirements arising from a change in the terms of stock loan or stock borrow positions between a Lending Clearing Member and Borrowing Clearing Member with re-matched positions would be included in the calculation of the mark-to-market payment obligations on the stock loan business day following the completion of the positions adjustments as set forth in proposed OCC Rule 2219A(f). Under proposed OCC Rule 2219A(f), which reflects current OCC Rule 2212(f), the termination by offset and re-matching of positions would be complete upon OCC finishing all position adjustments in the accounts of the suspended Clearing Member and the Borrowing Clearing Members and Lending Clearing Members with re-matched positions,

<sup>24</sup> OCC indicated that this algorithmic process would limit the number of returns that may be initiated for re-matching that results in Disclosed Market Loans between parties who have not executed an MSLA. See Notice of Filing, 89 FR 73479.



and the applicable systems reports are produced and provided to the Clearing Members showing the transactions.

Under proposed OCC Rules 2219A(g) through (i), from and after the time OCC has completed the position adjustments as set forth above in proposed OCC Rule 2219A(f), the suspended Clearing Member would have no further obligations under the By-Laws and Rules with respect to such positions. However, a Borrowing Clearing Member with re-matched stock borrow positions would remain obligated as a Borrowing Clearing Member and a Lending Clearing Member with re-matched stock loan positions would remain obligated as a Lending Clearing Member. Furthermore, upon notification that OCC has completed the termination by offset and re-matching of stock loan and borrow positions, the suspended Clearing Member and Borrowing/Lending Clearing Members with re-matched positions would be required to promptly make any necessary bookkeeping entries at DTC to ensure the accuracy and efficacy of those stock loan terms not governed by OCC's By-Laws and Rules. Under proposed OCC Rule 2219A(j), as under current OCC Rule 2212(j), Borrowing/Lending Clearing Members that have been re-matched would be required to work in good faith to either (i) reestablish any terms, representations, warranties, and covenants not covered by the By-Laws and Rules (e.g., establish an MSLA) or (ii) terminate the re-matched stock loan or borrow positions in the ordinary course pursuant to OCC Rules 2213 or 2216A, as applicable, as soon as reasonably practicable. Current OCC Rule 2212, which concerns re-matching in suspension for the Hedge Program, would be deleted and replaced with proposed OCC Rule 2217, with a cross-reference to proposed OCC Rule 2219A.

### 3. Market Loan Program Enhancements

*a. Expansion of Bilaterally Negotiated Market Loans.* The current Market Loan Program, as described in Section II.A.3. above, allows for the acceptance of electronic messages from the Loan Market for new loans and returns. OCC proposes to expand the program to allow the acceptance of bilaterally negotiated loans submitted directly from Clearing Members or their third-party service providers. As proposed, after a new loan or return is affirmed, OCC would instruct DTC to settle the transaction using OCC's DTC account, or the account of the lender, borrower, or Appointed Clearing Member. The proposal would allow for two separate avenues for submitting loans: either through a Loan Market or through the

direct submission of bilaterally negotiated Loans to OCC. As proposed, the scope of OCC's guaranty and post-trade processing for all transactions would be uniform, in contrast to the current scope of guarantee, as described in Section II.A.4., above. Under the proposal, counterparties to bilaterally negotiated contracts submitted to the Market Loan Program would remain paired in OCC's system for purposes of recalls, returns, and contract modifications, as they are under the current Hedge Program. In OCC's view, allowing automated submission of transactions to OCC prior to DTC settlement, combined with OCC's control of the settlement process, would help reduce the burden and risks associated with the balancing and reconciliation under the current Hedge Program.<sup>25</sup>

OCC would update its Rules to facilitate the proposed expansion of the Market Loan Program to allow for direct submission of bilaterally negotiated stock loans. For example, definitions of "Anonymous Market Loan" and "Disclosed Market Loan" would be added to OCC Rule 101 to accommodate the fact that certain proposed Rules would apply differently to Loans matched anonymously through a Loan Market and Loans initiated bilaterally, whether through a Loan Market or with OCC directly. Anonymous Market Loans would be defined as those initiated through a Loan Market and for which the identities of the Lending Clearing Member and Borrowing Clearing Member are not disclosed to each other. Disclosed Market Loans would be defined to include either those Market Loans (i) initiated through a Loan Market and for which the identities of the Lending Clearing Member and Borrowing Clearing Member are disclosed to each other, or (ii) initiated directly between the Lending Clearing Member and Borrowing Clearing Member away from a Loan Market such that the identities of the Lending Clearing Member and Borrowing Clearing Member are disclosed to each other.

The proposal further would amend OCC Rule 2202A (Initiation of Market Loans), where the newly renumbered OCC Rule 2202A(a)(1), currently OCC Rule 2202A(a)(i), would add that, in addition to initiation through a Loan Market, a Market Loan may be initiated when a Lending Clearing Member and Borrowing Clearing Member send details of a stock loan between the two Clearing Members directly to OCC. Proposed OCC Rule 2202A(h) would

provide that a Market Loan may be either an Anonymous Market Loan or a Disclosed Market Loan.

OCC also would amend current Article XXIA, Section 5 of OCC's By-Laws (Maintaining Stock Loan and Stock Borrow Positions in Accounts), which would become OCC Rule 2206A. Specifically, a new sentence would be added to the beginning of Rule 2206A that would introduce the concept of "matched pairs" to remain consistent with the definition of "Hedge Loan."<sup>26</sup> The sentence would read, "Each Market Loan will be maintained on the books and records of the Corporation as a unique matched pair of contracts with one such contract being between the Lending Clearing Member and the Corporation as borrower and the second such contract being between the Corporation as Lender and the Borrowing Clearing Member."<sup>27</sup> OCC stated that this clarifying sentence would ensure that the original counterparties to such a Disclosed Market Loan remain paired in OCC system, notwithstanding OCC's novation.<sup>28</sup> Proposed OCC Rule 2206A, Paragraph (a) additionally would provide that the identities of the Lending Clearing Member and Borrowing Clearing Member would be elements identified for stock loan positions and stock borrow positions resulting from Disclosed Market Loans.

Apart from the initiation process for bilateral Market Loans, OCC would amend its Rules regarding the accommodation of direct submission of other types of post-trade transactions for which the Rules currently rely on actions taken by a Loan Market. The first paragraph of current OCC Rule 2209A(a) (Termination of Market Loans) would be reflected in the newly renumbered OCC Rule 2216A(a)(1) and the newly created Rule 2214A (Modifications) and would provide that termination or modification of a Market Loan, respectively, may be initiated either through a Loan Market or OCC, depending on the way in which the Loan was initiated. Such instructions would be made through the Loan Market for Anonymous Market Loans;

<sup>26</sup> See proposed OCC Rule 101.H(1), which is originally By-Law Article XXIA, Section 1.D.(2), and was proposed to be deleted from the By-Laws and relocated to the Rules. ("The term "Hedge Loan" means a matched pair of securities contracts for the loan of Eligible Stock made through the Stock Loan/Hedge Program, with one such securities contract being between the Lending Clearing Member and the Corporation as the borrower and the second such securities contract being between the Corporation as the lender and the Borrowing Clearing Member.")

<sup>27</sup> Proposed OCC Rule 2206A(a).

<sup>28</sup> See Notice of Filing, 89 FR 73471.

<sup>25</sup> See Notice of Filing, 89 FR 73471.

through OCC for Disclosed Market Loans initiated through OCC directly; and through either the Loan Market or OCC for Disclosed Market Loans initiated through a Loan Market. The definitions of “Recall” and “Return,” as migrated from the By-Laws to OCC Rule 101, also would be amended to reflect the separate channels for initiating such a transaction.<sup>29</sup>

OCC would make other conforming changes to the text of the Rules to reflect the submission of bilaterally negotiated loans directly to OCC. Throughout the Rules governing the Market Loan Program, OCC would remove references to “matching” or “matched” transactions (*i.e.*, matched through a Loan Market) to reflect that Market Loan transactions could also be initiated bilaterally, either through a Loan Market or directly with OCC. The definition of “Market Loan Program,” as migrated from Section 1 of Article I of the OCC By-Laws to OCC Rule 101, would be amended to recognize that Market Loans may be initiated either through a Loan Market or through direct submission of bilaterally negotiated Loans to OCC.

*b. Recognition of Additional/ Supplementary MSLA Terms.* The Proposed Rule Change would allow OCC to recognize supplementary or additional terms under an MSLA between the counterparties to such bilaterally negotiated transactions submitted under the Market Loan Program, as OCC’s Rules currently recognize under the Hedge Program. Because parties to a bilaterally negotiated stock loan transaction typically execute an MSLA, OCC’s current Rule 2202(b) allows Hedge Clearing Members to establish and maintain additional terms under an MSLA that are not extinguished through OCC’s novation, provided that the additional terms are not inconsistent with OCC’s By-Laws or Rules. Such additional or supplementary terms may include a term structure or fees for buy-in transactions, for example. Under the proposal, OCC would add the same provision allowing additional or supplementary terms (so long as they are not inconsistent with the By-Laws and Rules) to the Market Loan Program

<sup>29</sup> See proposed OCC Rules 101.R(2) and (5), which are, respectively, By-Law Article XXIA, Section 1.R(2) and (3), and were proposed to be deleted from the By-Laws and relocated to the Rules. (For example, “The term ‘recall,’ as used in respect of any Market Loan, means the process by which the Lending Clearing Member may initiate the termination of the Market Loan, or any portion thereof, by submitting a notice to the applicable Loan Market or the Corporation, as applicable, calling for the return of all or any portion of the Loaned Stock.” (emphasis added)).

in proposed OCC Rule 2202A(b)(2)(E).<sup>30</sup> As described above, in Section II.B.2.b., OCC indicated that the recognition of MSLAs within the Market Loan Program also would facilitate the re-matching of Matched Book Positions in suspension because OCC would give priority to re-matching counterparties with existing MSLAs, both when re-matching within and across the Stock Loan Programs.<sup>31</sup>

*c. Collateral and Mark-to-Market Pricing.* To further facilitate the submission of bilaterally negotiated Market Loans directly to OCC, the Proposed Rule Change would set the collateral for all Market Loans at 102 percent, which is the same rate at which Market Loans submitted through a Loan Market currently are collateralized. OCC Rule 2204A (Mark-to-Market Payments), which would become proposed OCC Rule 2209A, would be amended to provide in proposed paragraph (b) (Market-to-Market Payment Amount) that the collateralization rate for all Market Loans would be 102 percent, regardless of whether it was initiated through a Loan Market or submitted directly to OCC. Current text in OCC Rule 2204A, providing that the collateralization rate shall be set by the relevant Loan Market, would then be deleted, because it would no longer be accurate. OCC also would delete the part of the definition of the term “Collateral” in Article XXIA of the OCC By-Laws, as migrated to OCC Rule 101, that references setting the collateralization rate by the relevant Loan Market, to maintain consistency and avoid confusion. According to OCC, fixing the collateral at 102 percent not only would assist in preserving compatibility between OCC’s cleared offerings and the standard practices for over-the-counter (“OTC”) uncleared stock loans (as well as with OCC’s current practice within the Market Loan Program), but also reduce complexity in OCC’s risk management process by

<sup>30</sup> See proposed OCC Rule 2202A(b)(2)(E). (“[W]ith respect to Disclosed Market Loans, the terms of the original stock loan (other than terms that establish congruence) and the representations, warranties and covenants made by each of the parties to the original stock loan under the Master Securities Loan Agreement or any other agreements with respect to the original stock loan shall (1) to the extent that they are inconsistent with the By-Laws and Rules of the Corporation, be eliminated from the pair of congruent contracts constituting the Market Loan and replaced by applicable By-Laws and Rules of the Corporation, and (2) to the extent that they are not inconsistent with the By-Laws and Rules of the Corporation, remain in effect as between such parties to the original stock loan, but shall not impose any additional obligations on the Corporation.”)

<sup>31</sup> See Notice of Filing, 89 FR 73471–72.

establishing a single rate across all Market Loans.<sup>32</sup>

The Proposed Rule Change would further align the Market Loan Program with the Hedge Program by allowing Clearing Members submitting Market Loans directly to OCC to select the default rate at which mark-to-market payments would be rounded up to the nearest level, which is the current practice for Hedge Loans, as described in Section II.A.5., above. Under the proposal, OCC Rule 2201A (Instructions to the Corporation) would become proposed OCC Rule 2207A, and would provide that the default rate is one of the standing instructions that Market Loan Clearing Members must submit with respect to Market Loans submitted directly to OCC.<sup>33</sup> The Lending Clearing Member’s default rate would govern the Market Loan if there is a difference between the default rates of a Borrowing Clearing Member and a Lending Clearing Member. OCC indicated that allowing the same flexibility in the Market Loan Program as currently exists in the Hedge Program would support Clearing Members in synchronizing cash flows between cleared and OTC stock loan transactions.<sup>34</sup>

*d. Cancellation of Pending Transactions.* As proposed, OCC would modify its Rules that concern the cancellation of pending transactions to accommodate the submission of cancellation instructions by Clearing Members, in addition to such submissions made by a Loan Market. This change is designed to bolster OCC’s ability to accept bilaterally negotiated contracts in the Market Loan Program.<sup>35</sup> To that end, OCC proposes to amend current OCC Rule 2202A(a)(ii), which allows a Loan Market to instruct OCC to disregard a previously reported matched transaction that is pending settlement at DTC, after which OCC instructs DTC to cancel the previously issued delivery order. The current OCC Rule 2202A(a)(ii) also provides that, upon

<sup>32</sup> See Notice of Filing, 89 FR 73472. OCC previously contemplated fixing the collateralization rate at 100 percent, considering that its guaranty would replace the additional collateral needed to protect Lenders from counterparty default risk. However, in a survey of all Clearing Members who participate in OCC’s Stock Loan Programs (provided as confidential Exhibit 3B to File No. SR–OCC–2024–011), most were opposed to that idea and preferred that the rate be fixed at 102 percent because, in part, the loss of the additional two percent in collateral would materially reduce the income lenders earn by investing the cash collateral, which is one of the reasons lenders choose to lend their shares. *Id.*

<sup>33</sup> OCC indicated that rounding rates for Market Loans submitted through a Loan Market would not change. See Notice of Filing, 89 FR 73472.

<sup>34</sup> See *id.*

<sup>35</sup> *Id.*

confirmation that DTC has processed such cancellation instructions, the related matched transaction is deemed null and void and given no effect; but also clarifies that OCC has no obligation to any Market Loan Clearing Member in acting pursuant to a Loan Market's instruction to disregard a previously reported transaction. OCC would amend OCC Rule 2202A(a)(ii), which would be renumbered as proposed OCC Rule 2202A(a)(2), to permit a Market Loan Clearing Member to submit a cancellation instruction for a pending transaction directly to OCC for bilaterally negotiated transactions submitted under the Market Loan Program.

OCC would add a new OCC Rule 2215A (Cancellation of Pending Instructions) to address the cancellation of pending post-trade instructions, other than cancellation of loan initiation under current OCC Rule 2202A. Under current OCC Rule 2202A, Hedge Clearing Members are able to cancel return instructions or recall instructions pending with DTC, and Market Loan Clearing Members likewise may cancel pending transactions by issuing a cancellation instruction to the Loan Market, which may then instruct OCC to disregard a previously reported transaction. The newly proposed OCC Rule 2215A would allow members that submit bilaterally negotiated Market Loans to issue cancellation instructions directly to OCC, as they do now to DTC and the Loan Market, thus further aligning the Stock Loan Programs.<sup>36</sup>

*e. Transaction Affirmation.* Currently, Market Loan Program transactions are matched when a Loan Market sends them to OCC. To help assure that the same matched status applies to loans submitted directly to OCC, the Proposed Rule Change would establish a transaction affirmation process. Regarding new loans, counterparties would be required to affirm the transaction details prior to OCC submitting the new loan to DTC for settlement and OCC would reject new loans that are not affirmed by the time that it stops accepting instructions for the day. Proposed OCC Rule 2202A(a)(1) would describe this process in detail, providing that a Market Loan is initiated when (i) the Loan Market sends details of a stock loan transaction to OCC or (ii) a Lending Clearing Member and Borrowing Clearing Member send details to OCC of a stock loan transaction between them and such details are either matched by OCC or affirmed by the Clearing Members, as applicable.

The Proposed Rule Change would allow a Lending Clearing Member to have the opportunity to affirm or reject the initiation of a return by a cut-off time on the same business day, so long as the Borrowing Clearing Member initiated a return within OCC's timeframe for submitting such an instruction on a stock loan business day. Proposed OCC Rule 2216A(a)(2) would describe an auto-affirmation process in detail, providing that any such returns pending after the cut-off time would be deemed affirmed and submitted to DTC for processing. OCC indicated that this approach would help balance a Lending Clearing Member's desire to have the opportunity to affirm or reject return instructions, while simultaneously addressing a Borrowing Clearing Member's concern that a delay in affirmation or allowing the transaction to pend indefinitely could have regulatory consequences for the Borrowing Clearing Member.<sup>37</sup>

Unlike returns, recalls would not need to be affirmed under the Proposed Rule Change. Proposed OCC Rule 2216A(a)(3) would provide that, according to standard MSLA terms, a Borrowing Clearing Member will be deemed to have affirmed the initiation of a recall, provided that the Lending Clearing Member requested the return of the specific quantity of Loaned Stock no earlier than the standard settlement date that would apply to a purchase or sale of the Loaned Stock in the principal market of such Loaned Stock.

Proposed OCC Rule 2214A(a) would be amended to add a new affirmation requirement to contract modifications. Specifically, contract modifications to the rebate rate, interest rate benchmark, or loan term submitted by either a Borrowing Clearing Member or Lending Clearing Member would not become effective until affirmed by both parties.

Provisions in proposed OCC Rule 2216A, paragraphs (b)(2)(B) and (c)(2) would define the processes for buy-ins and sell-outs to alleviate some of the concerns surrounding termination of stock loans, as described in Section II.A.7., above. In particular, for Market Loans submitted directly to OCC, the Borrowing Clearing Member and Lending Clearing Member will be given the opportunity to affirm or reject a buy-in or sell-out, respectively, by a cut-off time specified by OCC on the stock loan business day the buy-in or sell-out transaction is received by OCC. If the Clearing Member does not affirm or reject the buy-in or sell-out by that time, OCC would deem the buy-in or sell-out to be complete if OCC determines that

the Buy-In or Sell-Out Costs for the Loaned Stock initiated is more than the lowest market price and less than the highest market price for the Loaned Stock on the stock loan business day the buy-in or sell-out is submitted to OCC. Otherwise, the buy-in or sell-out would be rejected. This approach would be aligned with the buy-in and sell-out process under the current Hedge Program, in which any objection that the counterparty has with respect to the timeliness of the buy-in or sell-out, or the reasonableness of the Buy-In or Sell-Out Costs are matters that must be resolved away from OCC, and between the Lending Clearing Member and the Borrowing Clearing Member.<sup>38</sup>

*f. Cash Distributions.* The Proposed Rule Change would allow OCC to calculate and effect cash entitlements, including dividends, distributions, and rebates, using its internal clearance and settlement system. Paragraphs (a)(ii) and (a)(iii) of current OCC Rule 2206A (Dividends and Distributions; Rebates) would be renumbered as proposed OCC Rule 2211A(b) and (c), and would provide that under OCC's proprietary clearance and settlement system, OCC shall assume responsibility for calculating the margin add-on collected with respect to dividend equivalent payments. As under the current OCC process, described in Section II.A.6., above, OCC would continue to effect dividend equivalent payments primarily through DTC's Dividend Service. However, as amended under the proposed OCC Rule 2211A(b), OCC would effect payments through its proprietary clearance and settlement system if (i) OCC determines that the dividend or distribution for a Market Loan is not tracked through DTC's dividend tracking service or (ii) if OCC has determined to remove a Market Loan from DTC's dividend tracking service. Consistent with current OCC Rules, OCC would continue to add non-cash dividends and distributions to the Loaned Stock if OCC determines that such dividends and distributions are

<sup>38</sup> OCC clarified that it would not alter or eliminate the authority to permit Clearing Members to submit standing instructions, which currently exists under OCC Rule 2201A (Instructions to the Corporation), the applicable provision of which would be renumbered OCC Rule 2207A(a)(2). See Notice of Filing, 89 FR 73473. OCC added that this existing authority would be facilitated by planned technology changes, which would support automatic affirmation based on system settings that could be selected by Clearing Members. When new loans are received, the system would check whether there is a standing instruction that applies to the new loan. If no instruction is found, then the new loan would be pending for affirmation. If a standing instruction applies, then OCC would follow that instruction as satisfaction of the affirmation requirement. *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> See Notice of Filing, 89 FR 73473.

legally transferable and the transfer can be effected through DTC. However, the proposed changes to proposed OCC Rule 2211A(c) would clarify that the determination to fix a cash value for non-cash dividends and distributions not added to the Loaned Stock would lie with OCC, rather than the Loan Market. OCC contends that this change would eliminate OCC's reliance on the Loan Market for its margin add-on process and settlement of dividend equivalent payments,<sup>39</sup> and, as such, OCC proposes to eliminate the limitations under current OCC Rule 2206A, including the provision that OCC's guaranty is limited by the amount of margin OCC collected in reliance of the Loan Market's calculation.<sup>40</sup>

A new paragraph (d) would be added to proposed OCC Rule 2211A, addressing the rights of a Lending Clearing Member with respect to optional dividends, meaning those that a shareholder can elect to receive in cash, stock, or some combination of the two. Proposed OCC Rule 2211A(d) would provide that the Lending Clearing Member will have the right to elect an option only if it recalls the Loaned Stock in time to make such election. Otherwise, if the Lending Clearing Member does not recall the Loaned Stock, the Lending Clearing Member would be entitled to receive the default option set by the issuer of the Loaned Stock. OCC indicated that by adding paragraph (d) to proposed OCC Rule 2211A, the proposed rule would match the Loan Market's current process for optional dividends and would help clarify OCC's approach to such optional dividends in the stock lending context in OCC Rules, which currently do not address the rights of a Lending Clearing Member with respect to optional dividends.<sup>41</sup>

OCC also proposes to amend current OCC Rule 2206A(b), which would be renumbered as OCC Rule 2211A(e), to facilitate the calculation, collection, and payment of rebates under its internal clearance and settlement system. Currently, OCC Rule 2206A(b) provides that OCC generally will collect and pay rebate payments on a monthly basis as instructed by the Loan Market, with the rationale being that the Loan Market currently is responsible for rebate payment calculation, as it is with the calculation of dividend equivalent

payments.<sup>42</sup> However, proposed OCC Rule 2211A(e) would provide that OCC would assume responsibility for calculating the rebate payments under its internal clearance and settlement system. Paragraph (e) of proposed OCC Rule 2211A would provide OCC the flexibility to calculate and effect collection and payment of rebate payments not just on a monthly basis, but also on each business day, with OCC indicating that this change would prepare it for if and when the stock loan industry transitions to daily, rather than monthly, collection of rebate payments.<sup>43</sup>

*g. Market Loan Modifications.* To support OCC's move to the industry standard practice of contract-level recordkeeping, the Proposed Rule Change would add a new rule, proposed OCC Rule 2214A, regarding Market Loan modifications. Permissible modifications would be limited to the rebate rate, interest rate benchmark, or loan term. Modifications agreed to by the Market Loan Clearing Members over the life of a Market Loan would be accepted by OCC and maintained in OCC's books and records at the contract level.

The channel through which modification requests would be processed would be determined by the manner in which the loan was initiated. For example, under proposed OCC Rule 2214A(b)(1), in the case of Anonymous Market Loans, modification requests must be submitted to the Loan Market through which the Market Loan was initiated, consistent with current practice. Proposed OCC Rule 2214A(b)(2)–(3) would extend this approach by providing that, in the case of Disclosed Market Loans initiated directly with OCC, modification requests must be submitted to OCC; or, in the case of Disclosed Market Loans initiated through a Loan Market, modification requests must be submitted either through the Loan Market or OCC. Proposed OCC Rule 2214A(c) would state that OCC shall update the relevant terms in its books and records if, as applicable, (i) the Loan Market notifies OCC that the parties agreed to the modification, or, (ii) with respect to Market Loans initiated directly through OCC, the parties provided OCC with matching or affirmed instructions. OCC would provide notice of the modified terms in the daily reports that OCC is required to make available to Market Loan Clearing Members under proposed OCC Rule 2210A.

*h. Buy-In Controls and Settlement Cycle.* As stated above, in Section II.A.7., neither of the present Stock Loan Programs enables OCC to administer buy-ins of the Loaned Stock. OCC proposes to amend current OCC Rule 2209A, which would be renumbered as proposed OCC Rule 2216A, to provide OCC with additional controls over the buy-in process for the recall of a Market Loan initiated by a Lending Clearing Member if the Borrowing Clearing Member fails to return the Loaned Stock in situations other than suspension of the Borrowing Clearing Member. Current OCC Rule 2209A provides that a Lending Clearing Member is entitled to initiate a buy-in if a recall transaction fails to settle by the Settlement Time on the first stock loan business day after submitting the recall. Also under OCC's current rules, the Borrowing Clearing Member may return the Loaned Stock up until the time that the Lending Clearing Member that initiated the return or recall provides written notice to the Loan Market that it has executed the buy-in or sell-out. OCC noted that such a process can lead to situations where the Borrowing Clearing Member is allowed to return the Loaned Stock during the period after the buy-in becomes permissible, but before the Lending Clearing Member executes the transaction and provides written notice.<sup>44</sup>

To address such situations, proposed OCC Rule 2216A(b) would be amended to provide that, upon timely notice from the Lending Clearing Member that it intends to execute a buy-in after a Borrowing Clearing Member fails to return the Loan Stock following a recall transaction, OCC would prevent the Borrowing Clearing Member from returning the Loaned Stock while the Lending Clearing Member executes the buy-in. OCC would recognize the Borrowing Clearing Member's return of the Loaned Stock until the Lending Clearing Member provides such notice. The stock loan and stock borrow positions would then remain open until the Lending Clearing Member provides notice that the buy-in is complete.

#### 4. Accommodating Canadian and Other Clearing Members

*a. Supporting Canadian Clearing Members.* The Proposed Rule Change would allow Canadian Clearing Members to expand their participation beyond OCC's Hedge Program, which they currently are permitted to use, and into the Market Loan Program, while preventing certain transactions that could trigger tax withholding

<sup>39</sup> See Notice of Filing, 89 FR 73473.

<sup>40</sup> OCC clarified that this change would not have any effect on OCC's margin methodology and that OCC would continue to collect a margin add-on for such cash distributions. See Notice of Filing, 89 FR 73473–74.

<sup>41</sup> See Notice of Filing, 89 FR 73474.

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> See Notice of Filing, 89 FR 73474.

obligations. To facilitate this expansion, OCC proposes to amend current Rules to recognize Canadian Clearing Members as potential participants in the Market Loan Program and address operational capabilities that will be required to support their participation. The proposal would revise paragraph (f) of OCC Rule 302 (Operational Capability) to include Canadian Clearing Members as members qualifying for participation in the Market Loan Program, including by providing these members the ability to settle transactions through a CDS sub-account at the Depository, which they do under the Hedge Program today, as described in Section II.A.8., above. This same provision also would consolidate operational requirements for participation in the Hedge Program and the Market Loan Program so that the historical division between the programs does not impede the planned eventual decommission of the Hedge Program. As a further example, OCC would revise OCC Rule 306A (Event-Based Reporting) to reflect that a Canadian Clearing Member's current obligation to provide OCC with prompt written notice if CDS has or likely will cease to act for that Canadian Clearing Member would extend to such members that participate in both Stock Loan Programs. OCC also proposes to replicate OCC Rule 2201(c), which concerns a Canadian Clearing Member's appointment of CDS for purposes of settling Hedge Loan delivery-versus-payment transactions, as proposed OCC Rule 2207A(c), to help ensure that the same requirements would apply to Canadian Clearing Members that participate in the Market Loan Program.

In expanding the Market Loan Program to Canadian Clearing Members, OCC stated that it considered its ability to offer an expanded guaranty without incurring tax or withholding obligations on the associated payments that would be incurred under the expanded Market Loan Program.<sup>45</sup> OCC stated that its current Rules, particularly OCC Rule 202, already provide the framework for the expanded guaranty under the Market Loan Program, while balancing the need to avoid tax imposition triggers. OCC Rule 202 currently imposes obligations on Canadian Clearing Members to allow OCC to clear listed options transactions free from tax withholding obligations on dividend

equivalent payments or deemed payments. OCC indicated that current OCC Rule 202 also would allow it to make substitute dividend payments to Canadian Clearing Members as Lending Clearing Members under the enhanced Market Loan Program without imposing tax or withholding obligations.<sup>46</sup> OCC would report substitute dividend payments to the IRS using information provided by the Canadian Clearing Members, as OCC currently does for dividend equivalent payments or deemed payments to Canadian Clearing Members in connection with listed options transactions. Additionally, under current OCC Rule 202(b), OCC has the authority to prohibit or limit specific transactions with respect to non-U.S. members that may give rise to tax or withholding obligations, and OCC expects to continue to use that authority to impose certain limitations on the Market Loan activity of Canadian Clearing Members to address specific situations in which tax withholding obligations might otherwise arise, including limitations on transactions involving (i) Canadian underlying securities, (ii) Positive Rebate, and (iii) Negative Rebate. OCC Rule 202(b)(5) also requires Canadian Clearing Members to indemnify OCC for any loss, liability or expense—including taxes and penalties—that it may sustain as a result of its failure to comply with requirements of OCC Rule 202(b).

As stated above, OCC is not proposing to change any part of OCC Rule 202, but OCC has indicated that it believes the current framework under OCC Rule 202 can be applied to the expansion of the Market Loan Program to Canadian Clearing Members, and could help OCC avoid tax or withholding obligations.<sup>47</sup> Pursuant to OCC Rule 202(b), OCC would preclude a Canadian Clearing Member from executing Market Loan transactions as a Borrowing Clearing Member, whether on behalf of a customer or for its own account, for which the Loaned Stock is issued by a Canadian issuer because of tax withholding obligations under Canadian law for substitute dividend payments that would be owed by the Canadian Clearing Member in its capacity as the lender.<sup>48</sup> In such a situation, the

Borrowing Clearing Member would be precluded from initiating a Market Loan in its capacity as a Borrowing Clearing Member because the Canadian Clearing Member could not fulfill its obligation under OCC's Rules to provide a substitute dividend payment free from tax and withholding obligations.<sup>49</sup>

With respect to positive and negative rebate payments, OCC also believes that current OCC Rule 202 would allow clearance and settlement of such payments to Canadian Clearing Members in connection with the expanded Market Loan Program without triggering tax withholding obligations. Although neither the Internal Revenue Code nor Internal Revenue Service ("IRS") regulations specifically provide for the treatment of rebate payments, OCC believes that such rebate payments to Canadian Clearing Members would not trigger tax withholding obligations, because, not only would these members be considered qualified intermediaries and therefore exempt under U.S. tax law, but they also are required to be Qualified Intermediaries as a condition of membership under OCC Rule 202.<sup>50</sup> OCC understands that rebate payments, whether positive or negative, to a Canadian Clearing Member in its capacity as a Qualified Intermediary, may be made by OCC free from withholding, consistent with treatment of dividend equivalent payments in connection with listed options

Income Tax Act (Canada), and the payment would be subject to Canadian withholding tax under subsection 212(2) of that act. See Notice of Filing, 89 FR 73475.

<sup>49</sup> OCC understands that no similar tax withholding obligation would exist for substitute dividend payments with respect to a Canadian underlying security made by OCC, in its capacity as the borrower, to a Canadian Clearing Member that was a Lending Clearing Member. See Notice of Filing, 89 FR 73475.

<sup>50</sup> OCC believes that Positive Rebate would be treated as interest for U.S. federal tax purposes because Positive Rebate compensates the Borrowing Clearing Member for the use of the cash collateral by the Lending Clearing Member, and would therefore constitute U.S.-source "fixed or determinable annual or periodic income," or "FDAPI," under section 1442 of the I.R.C. While U.S.-source FDAPI generally is subject to a 30% U.S. withholding tax when paid to a foreign corporation, exemptions from withholding apply to (i) payments to a Qualified Intermediary in its capacity as an intermediary that has accepted primary withholding responsibility, and (ii) interest paid to a Canadian Clearing Member that qualifies for an exemption from withholding on interest under Article XI of the Convention Between the United States of America and Canada with Respect to Taxes on Income, October 16, 1980, as amended by subsequent Protocols (the "Canada Treaty"). A Qualified Intermediary that has accepted primary withholding responsibility is exempt from U.S. federal withholding on payments from a withholding agent, including U.S.-source interest, received in its capacity as an intermediary. See Notice of Filing, 89 FR 73475-76.

<sup>46</sup> See Notice of Filing, 89 FR 73475.

<sup>47</sup> *Id.*

<sup>48</sup> OCC understands that under Canadian law, the loan of a security issued by a Canadian company would be treated as a loan of the underlying shares for Canadian tax purposes. The substitute dividend paid by the Canadian Clearing Member as the Borrowing Clearing Member to OCC, in its capacity as the lender, would be a payment made by the Canadian Clearing Member, as a corporation, to OCC of a dividend payable on the underlying securities under subparagraph 260(8)(a)(ii) of the

<sup>45</sup> See Notice of Filing, 89 FR 73475. Specifically, under the expanded Market Loan Program, OCC would clear and settle the types of cash distributions, such as substitute dividend and rebate payments, that OCC does not guarantee under the Hedge Program and must be resolved bilaterally by Hedge Clearing Members, away from OCC. *Id.*

transactions.<sup>51</sup> As with substitute dividends, OCC would add rebate payments for transactions in a Canadian Clearing Member's capacity as a Qualified Intermediary to the current reporting OCC submits to the IRS for dividend equivalent payments on listed options, based on information to be received from the Canadian Clearing Member pursuant to current OCC Rule 202(b)(3).

In the case of Positive Rebate payments on Market Loans initiated by a Canadian Clearing Member in its capacity as principal, OCC would require Canadian Clearing Members to demonstrate through annual certification and submission of underlying tax documents, pursuant to OCC Rule 202, that such payments are subject to exemption from U.S. withholding obligations under the Canada Treaty.<sup>52</sup>

OCC understands that, because there is a risk that no exemption from U.S. tax withholding would apply to the payment of Negative Rebate to a Canadian Clearing Member outside its capacity as a Qualified Intermediary, OCC would limit Canadian Clearing Members from initiating Market Loans with a Negative Rebate as a Lending Clearing Member other than in its capacity as a Qualified Intermediary, pursuant to OCC Rule 202(b), as further protection from potential tax liability.<sup>53</sup> In addition, OCC would limit Canadian Clearing Members' ability to modify the rebate on a Market Loan to a Negative Rebate as a Lending Clearing Member other than in its capacity as a Qualified Intermediary.<sup>54</sup>

*b. Provide for Appointed and Appointing Clearing Members.* Under current OCC Rule 302, all participants in the Market Loan Program are required to be members of DTC. As stated above, in Section II.B.4.a, OCC would allow Canadian Clearing Members to settle Market Loan transactions through a CDS sub-account maintained at DTC as a way to extend the Market Loan Program to Canadian Clearing Members. In a similar manner, OCC proposes to build a framework of Appointing Clearing Members and Appointed Clearing Members so that the Market Loan Program would be available to new

types of Clearing Members who are not necessarily members of DTC, given that OCC expanded its membership to different types of participants in 2023.<sup>55</sup>

To make this accommodation, OCC proposes to revise current OCC Rules 101 and 302, as well as proposed OCC Rules 2202A, 2207A, and 2216A. This accommodation would allow a Clearing Member participating in the Market Loan Program—the Appointing Clearing Member—to appoint an Appointed Clearing Member to make settlement of obligations arising from the initiation or termination of Market Loans. The approach would be similar to how current OCC Rule 901 allows for the operation of Appointed and Appointing Clearing Members with respect to delivery or receipt of underlying securities arising from the exercise of equity options and maturity of stock futures, or how current OCC Rule 2201 allows Canadian Clearing Members to appoint CDS as its agent for purposes of effective delivery orders for stock loan and stock borrow transactions. Under the Proposed Rule Change, Clearing Members wishing to participate in the Market Loan Program would be able to forego membership at DTC and instead establish a relationship with an Appointed Clearing Member. To support this process, OCC would revise the definitions in current OCC Rule 101 for “Appointed Clearing Member” and “Appointing Clearing Member” to reference the initiation and termination of Market Loans. These definitions would refer to proposed Rule 2207A (Instructions to the Corporation), which would contain a paragraph providing the mechanism for such appointments. Proposed OCC Rules 2202A (Initiation of Market Loans) and 2216A (Termination of Market Loans) would also provide for OCC to submit delivery orders to the Depository's account for the Appointed Clearing Member in connection with the initiation or termination of a Market Loan, respectively.

### 5. By-Laws and Rules Reorganization and Restatement

In consolidating the two stock loan programs, OCC proposes to move pertinent provisions out of its By-Laws and into its Rules to allow for a clearer and more transparent presentation of the details. OCC proposes to make clarifying, conforming, and organizational changes to OCC's By-Laws and Rules, and rule-filed policies that reference those By-Laws or Rules.

OCC would reorganize, restate, and consolidate provisions of OCC's By-Laws governing the Stock Loan Programs into Chapter XXII (Hedge Program) and Chapter XXIII (Market Loan Program) of OCC's Rules, as amended by this Proposed Rule Change. As part of these revisions, OCC would preserve the governance requirements concerning amendments to the stock loan-related By-Laws migrated to the Rules by amending Article XI, Section 2 of the OCC By-Laws.

### III. Discussion and Commission Findings

Section 19(b)(2)(C) of the Exchange Act directs the Commission to approve a proposed rule change of a self-regulatory organization if it finds that such proposed rule change is consistent with the requirements of the Exchange Act and the rules and regulations thereunder applicable to such organization.<sup>56</sup> Under the Commission's Rules of Practice, the “burden to demonstrate that a proposed rule change is consistent with the Exchange Act and the rules and regulations issued thereunder . . . is on the self-regulatory organization [‘SRO’] that proposed the rule change.”<sup>57</sup>

The description of a proposed rule change, its purpose and operation, its effect, and a legal analysis of its consistency with applicable requirements must all be sufficiently detailed and specific to support an affirmative Commission finding,<sup>58</sup> and any failure of an SRO to provide this information may result in the Commission not having a sufficient basis to make an affirmative finding that a proposed rule change is consistent with the Exchange Act and the applicable rules and regulations.<sup>59</sup> Moreover, “unquestioning reliance” on an SRO's representations in a proposed rule change is not sufficient to justify Commission approval of a proposed rule change.<sup>60</sup>

After carefully considering the Proposed Rule Change, the Commission finds that the proposal is consistent with the requirements of the Exchange Act and the rules and regulations thereunder applicable to OCC. More specifically, the Commission finds that the proposal is consistent with Section

<sup>51</sup> See Notice of Filing, 89 FR 73476.

<sup>52</sup> Article XI(1) of the Canada Treaty reduces the rate of withholding from 30% to zero for U.S.-source interest beneficially owned by a resident of Canada entitled to treaty benefits, provided that income is not attributable to a permanent establishment, within the meaning of the Canada Treaty, or effectively connected with a trade or business conducted in the United States. See Notice of Filing, 89 FR 73476.

<sup>53</sup> See Notice of Filing, 89 FR 73476.

<sup>54</sup> *Id.*

<sup>55</sup> See Exchange Act Release No. 97439 (May 5, 2023), 88 FR 30373, 30373 (May 11, 2023) (SR-OCC-2023-002).

<sup>56</sup> 15 U.S.C. 78s(b)(2)(C).

<sup>57</sup> Rule 700(b)(3), Commission Rules of Practice, 17 CFR 201.700(b)(3).

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> *Susquehanna Int'l Group, LLP v. Securities and Exchange Commission*, 866 F.3d 442, 447 (D.C. Cir. 2017) (“*Susquehanna*”).

17A(b)(3)(F) of the Exchange Act,<sup>61</sup> and Rules 17Ad–22(e)(21)(ii)<sup>62</sup> and 17Ad–22(e)(1)<sup>63</sup> thereunder, as described below.

*A. Consistency With Section 17A(b)(3)(F) of the Exchange Act*

Section 17A(b)(3)(F) of the Exchange Act requires, among other things, that a clearing agency's rules are designed to promote the prompt and accurate clearance and settlement of securities transactions and, to the extent applicable, derivative agreements, contracts, and transactions.<sup>64</sup> Based on a review of the record, and for the reasons described below, the changes described above are consistent with promoting the prompt and accurate clearance and settlement of securities transactions and, to the extent applicable, derivative agreements, contracts, and transactions.

As discussed above, OCC's current Stock Loan Programs are limited in several ways due to their historical development on two separate pathways. For example, OCC does not currently record stock loan transactions in its books and records on a contract-level basis but instead uses position aggregation, which is not aligned to the current industry standard. Additionally, Hedge Program participants, unlike Market Loan Program participants, currently must first negotiate terms bilaterally before sending them to DTC for settlement, as well as address certain post-trade transactions bilaterally with each of their counterparties, away from OCC. This creates operational burdens and costs when Clearing Members must reconcile their internal records with OCC's position-based records on a daily basis. Finally, the treatment of Canadian and other types of Clearing Members participating in the Stock Loan Programs potentially raises tax liability issues under the current stock loan framework.

The Proposed Rule Change would help address these concerns by, among other things, aligning the rules governing both of OCC's Stock Loan Programs with each other, thus streamlining the loan initiation, tracking, and termination processes for both programs. The Proposed Rule Change also would replace OCC's current practice of aggregating new stock loan positions and stock borrow positions for the same Clearing Member in the same Eligible Stock with contract-level accounting, consistent with

current industry-standard bookkeeping practices. The Proposed Rule Change also would allow for the submission of bilaterally negotiated transactions in the Market Loan Program. Likewise, the Proposed Rule Change would conform the terms of Market Loans cleared by OCC more closely to the provisions most commonly included in stock loan transactions executed under standard loan market documents; provide a uniform guaranty of terms across Market Loans, regardless of how those Market Loans are initiated under the enhanced program; and support transactions under both Stock Loan Programs. The proposed changes also would allow re-matching of Matched-Book Positions in suspension across both loan programs, thus helping to manage stock loan transactions in the event of a Clearing Member default. Also, OCC would use its current Rules to facilitate equal treatment of Canadian Clearing Members participating in the Stock Loan Programs, as well as to prevent certain transactions that could trigger tax withholding obligations. OCC would similarly amend its Rules to build a framework of Appointing Clearing Members and Appointed Clearing Members so that the Market Loan Program would be available to new types of Clearing Members who are not necessarily members of DTC.

Taken together, these proposed changes would aid in reducing existing frictions in the current stock loan program framework, both by ensuring the accuracy and consistency of information and contract terms that OCC receives rather than relying on a one-on-one reconciliation process with each participating Clearing Member, and by more precisely managing the rebates, dividends, and other information that OCC keeps on its books. The proposed changes would also broaden Canadian Clearing Member access, which would facilitate a transition away from the Hedge Program in the event that OCC proposes to decommission it in the future. By eliminating the current manual reconciliation process, the Proposed Rule Change also would help reduce participating Clearing Members' costs and operational burdens associated with that process. As a result, the Proposed Rule Change would aid in promoting the prompt and accurate clearance and settlement of securities transactions and, to the extent applicable, derivative agreements, contracts, and transactions.

Accordingly, the changes proposed to the Stock Loan Programs are consistent

with the requirements of Section 17A(b)(3)(F) of the Exchange Act.<sup>65</sup>

*B. Consistency With Rule 17Ad–22(e)(21)(ii) Under the Exchange Act*

Rule 17Ad–22(e)(21)(ii) under the Exchange Act requires, in part, that a covered clearing agency establish, implement, maintain, and enforce written policies and procedures reasonably designed to be efficient and effective in meeting the requirements of its participants and the markets it serves.<sup>66</sup> In adopting Rule 17Ad–22(e)(21), the Commission provided guidance that a covered clearing agency generally should consider in establishing and maintaining policies and procedures that address efficiency and effectiveness, including whether its design meets the needs of its participants and the market it serves.<sup>67</sup>

As described in Section II.A., the historical development of the Market Loan and Hedge Programs resulted in two programs designed to clear similar products in different ways. The current form of the programs presents certain inefficiencies, such as the costly reconciliation processes related to the Hedge Program and lack of visibility into additional contract terms due to OCC's aggregate portfolio-level bookkeeping. Such inefficiencies, in turn, have resulted in costs and burdens to Clearing Members, who have expressed interest in the enhancements such as having the rebate amounts calculated, settled, and guaranteed by OCC. The alignment of rules governing the Hedge and Market Loan Programs, along with improvements to both programs described above (e.g., contract-level recordkeeping, expanded guaranty encompassing additional contract terms), help to address such inefficiencies to meet the needs of OCC's Clearing Members that participate in the Stock Loan Programs, and would reduce manual processing and the potential for stock loan transactions to be delayed or to fail. For example, while OCC continue to operate both the Hedge and Market Loan Programs, OCC would provide the same, uniform guaranty and post-trade processing for all transactions. By allowing for automated submission of transactions to OCC prior to DTC settlement and by controlling the settlement process, the Stock Loan Programs would help reduce the burden and risks currently associated with

<sup>65</sup> *Id.*

<sup>66</sup> 17 CFR 240.17Ad–22(e)(21)(ii).

<sup>67</sup> Securities Exchange Act Release No. 78961 (Sept. 28, 2016), 81 FR 70786, 70841 (Oct. 13, 2016) (File No. S7–03–14) (“Standards for Covered Clearing Agencies”).

<sup>61</sup> 15 U.S.C. 78q–(b)(3)(F).

<sup>62</sup> 17 CFR 240.17Ad–22(e)(21)(ii).

<sup>63</sup> 17 CFR 240.17Ad–22(e)(1).

<sup>64</sup> 15 U.S.C. 78q–(b)(3)(F).



balancing and reconciliation. Additionally, by fixing the collateral for Market Loans at a single rate of 102 percent consistent with member feedback, as described in Section II.B.3.c., OCC would reduce the complexity in its risk management of stock loan positions by establishing a single rate across all Market Loans.

Accordingly, the changes proposed to the Stock Loan Programs are consistent with the requirements of Rule 17Ad-22(e)(21) under the Exchange Act.<sup>68</sup>

### C. Consistency With Rule 17Ad-22(e)(1) Under the Exchange Act

Rule 17Ad-22(e)(1) under the Exchange Act requires that a covered clearing agency establish, implement, maintain, and enforce written policies and procedures reasonably designed to provide for a well-founded, clear, transparent, and enforceable legal basis for each aspect of its activities in all relevant jurisdictions.<sup>69</sup> In adopting Rule 17Ad-22(e)(1), the Commission provided guidance that a covered clearing agency generally should consider in establishing and maintaining policies and procedures to address legal risk, including whether its rules, policies and procedures, and contracts are clear, understandable, and consistent with relevant laws and regulations.<sup>70</sup>

As described above, in Section II.B.5., the proposed changes consolidate and reorganize provisions concerning the Stock Loan Programs that are scattered across two documents—both OCC's By-Laws and Rules—into a single location: OCC's Rules. The streamlining and consolidation of these provisions into OCC's Rules enhances their clarity, transparency, and consistency for Clearing Members and stakeholders who choose to participate in the Stock Loan Programs. More specifically, the incorporation of current Interpretations and Policies into the body of the Rules would enhance clarity and readability of the provisions concerning the Stock Loan Programs. Additionally, the global and administrative changes would apply consistent terms and numbering conventions, improve consistency of the text between similar Hedge Program and Market Loan Program rules, and remove duplicative provisions, thus increasing clarity, understandability, and consistency.

Accordingly, the changes proposed to the Stock Loan Programs are consistent

with the requirements of Rule 17Ad-22(e)(1) under the Exchange Act.<sup>71</sup>

### IV. Conclusion

On the basis of the foregoing, the Commission finds that the Proposed Rule Change is consistent with the requirements of the Exchange Act, and in particular, the requirements of Section 17A of the Exchange Act<sup>72</sup> and the rules and regulations thereunder.

It is therefore ordered, pursuant to Section 19(b)(2) of the Exchange Act,<sup>73</sup> that the proposed rule change, as modified by Partial Amendment No. 1, (SR-OCC-2024-011) be, and hereby is, approved.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>74</sup>

**Sherry R. Haywood,**  
*Assistant Secretary.*

[FR Doc. 2024-28257 Filed 12-2-24; 8:45 am]

**BILLING CODE 8011-01-P**

### SMALL BUSINESS ADMINISTRATION

**[Disaster Declaration #20699 and #20700; FLORIDA Disaster Number FL-20012]**

#### Presidential Declaration Amendment of a Major Disaster for the State of Florida

**AGENCY:** U.S. Small Business Administration.

**ACTION:** Amendment 6.

**SUMMARY:** This is an amendment of the Presidential declaration of a major disaster for the State of Florida (FEMA-4828-DR), dated September 28, 2024.

*Incident:* Hurricane Helene.

**DATES:** Issued on November 22, 2024.

*Incident Period:* September 23, 2024 through October 7, 2024.

*Physical Loan Application Deadline Date:* January 7, 2025.

*Economic Injury (EIDL) Loan Application Deadline Date:* June 30, 2025.

**ADDRESSES:** Visit the MySBA Loan Portal at <https://lending.sba.gov> to apply for a disaster assistance loan.

**FOR FURTHER INFORMATION CONTACT:** Alan Escobar, Office of Disaster Recovery & Resilience, U.S. Small Business Administration, 409 3rd Street SW, Suite 6050, Washington, DC 20416, (202) 205-6734.

**SUPPLEMENTARY INFORMATION:** The notice of the President's major disaster

<sup>71</sup> 17 CFR 240.17Ad-22(e)(1).

<sup>72</sup> In approving this Proposed Rule Change, the Commission has considered the proposed rules' impact on efficiency, competition, and capital formation. See 15 U.S.C. 78c(f).

<sup>73</sup> 15 U.S.C. 78s(b)(2).

<sup>74</sup> 17 CFR 200.30-3(a)(12).

declaration for the State of Florida, dated September 28, 2024, is hereby amended to extend the deadline for filing applications for physical damages as a result of this disaster to January 7, 2025.

All other information in the original declaration remains unchanged.

(Catalog of Federal Domestic Assistance Number 59008)

**Alejandro Contreras,**

*Acting Deputy Associate Administrator, Office of Disaster Recovery & Resilience.*

[FR Doc. 2024-28279 Filed 12-2-24; 8:45 am]

**BILLING CODE 8026-09-P**

### SMALL BUSINESS ADMINISTRATION

**[Disaster Declaration #20608 and #20609; NEW YORK Disaster Number NY-20015]**

#### Administrative Declaration of a Disaster for the State of New York

**AGENCY:** U.S. Small Business Administration.

**ACTION:** Notice.

**SUMMARY:** This is a notice of an Administrative declaration of a disaster for the State of New York dated November 26, 2024.

*Incident:* Severe Storms and Flooding.

**DATES:** Issued on November 26, 2024.

*Incident Period:* August 18, 2024 through August 19, 2024.

*Physical Loan Application Deadline Date:* January 27, 2025.

*Economic Injury (EIDL) Loan Application Deadline Date:* August 26, 2025.

**ADDRESSES:** Visit the MySBA Loan Portal at <https://lending.sba.gov> to apply for a disaster assistance loan.

**FOR FURTHER INFORMATION CONTACT:** Alan Escobar, Office of Disaster Recovery & Resilience, U.S. Small Business Administration, 409 3rd Street SW, Suite 6050, Washington, DC 20416, (202) 205-6734.

**SUPPLEMENTARY INFORMATION:** Notice is hereby given that as a result of the Administrator's disaster declaration, applications for disaster loans may be submitted online using the MySBA Loan Portal <https://lending.sba.gov> or other locally announced locations. Please contact the SBA disaster assistance customer service center by email at [disastercustomerservice@sba.gov](mailto:disastercustomerservice@sba.gov) or by phone at 1-800-659-2955 for further assistance.

The following areas have been determined to be adversely affected by the disaster:

*Primary Counties:* Suffolk.

*Contiguous Counties:*

<sup>68</sup> 17 CFR 240.17Ad-22(e)(21)(ii).

<sup>69</sup> 17 CFR 240.17Ad-22(e)(1).

<sup>70</sup> Standards for Covered Clearing Agencies, 81 FR 70802.

New York: Nassau.  
The Interest Rates are:

	Percent
<i>For Physical Damage:</i>	
Homeowners with Credit Available Elsewhere .....	5.625
Homeowners without Credit Available Elsewhere .....	2.813
Businesses with Credit Available Elsewhere .....	8.000
Businesses without Credit Available Elsewhere .....	4.000
Non-Profit Organizations with Credit Available Elsewhere ...	3.250
Non-Profit Organizations without Credit Available Elsewhere .....	3.250
<i>For Economic Injury:</i>	
Business and Small Agricultural Cooperatives without Credit Available Elsewhere .....	4.000
Non-Profit Organizations without Credit Available Elsewhere .....	3.250

The number assigned to this disaster for physical damage is 206086 and for economic injury is 206090.

The State which received an EIDL Declaration is New York.

(Catalog of Federal Domestic Assistance Number 59008)

**Isabella Guzman,**  
*Administrator.*

[FR Doc. 2024-28273 Filed 12-2-24; 8:45 am]

**BILLING CODE 8026-09-P**

**SMALL BUSINESS ADMINISTRATION**

**[Disaster Declaration # 20776 and # 20777; NEW YORK Disaster Number NY-20019]**

**Administrative Disaster Declaration of a Rural Area for the State of New York**

**AGENCY:** U.S. Small Business Administration.

**ACTION:** Notice.

**SUMMARY:** This is a notice of an Administrative Rural disaster declaration of a rural area for the State of New York dated November 25, 2024.

*Incident:* Remnants of Tropical Storm Debby.

**DATES:** Issued on November 25, 2024.

*Incident Period:* August 8, 2024 through August 10, 2024.

*Physical Loan Application Deadline Date:* January 24, 2025.

*Economic Injury (EIDL) Loan Application Deadline Date:* August 25, 2025.

**ADDRESSES:** Visit the MySBA Loan Portal at <https://lending.sba.gov> to apply for a disaster assistance loan.

**FOR FURTHER INFORMATION CONTACT:** Alan Escobar, Office of Disaster

Recovery & Resilience, U.S. Small Business Administration, 409 3rd Street SW, Suite 6050, Washington, DC 20416, (202) 205-6734.

**SUPPLEMENTARY INFORMATION:** Notice is hereby given that as a result of the Administrator's disaster declaration of a rural area, applications for disaster loans may be submitted online using the MySBA Loan Portal <https://lending.sba.gov> or other locally announced locations. Please contact the SBA disaster assistance customer service center by email at [disastercustomerservice@sba.gov](mailto:disastercustomerservice@sba.gov) or by phone at 1-800-659-2955 for further assistance.

The following areas have been determined to be adversely affected by the disaster:

*Primary Counties:* Franklin, St. Lawrence.

The Interest Rates are:

	Percent
<i>For Physical Damage:</i>	
Homeowners with Credit Available Elsewhere .....	5.625
Homeowners without Credit Available Elsewhere .....	2.813
Businesses with Credit Available Elsewhere .....	8.000
Businesses without Credit Available Elsewhere .....	4.000
Non-Profit Organizations with Credit Available Elsewhere ...	3.250
Non-Profit Organizations without Credit Available Elsewhere .....	3.250
<i>For Economic Injury:</i>	
Business and Small Agricultural Cooperatives without Credit Available Elsewhere .....	4.000
Non-Profit Organizations without Credit Available Elsewhere .....	3.250

The number assigned to this disaster for physical damage is 207768 and for economic injury is 207770.

The States which received an EIDL Declaration are New York.

(Catalog of Federal Domestic Assistance Number 59008)

**Isabella Guzman,**  
*Administrator.*

[FR Doc. 2024-28240 Filed 12-2-24; 8:45 am]

**BILLING CODE 8026-09-P**

**SMALL BUSINESS ADMINISTRATION**

**[Disaster Declaration #20759 and #20760; FLORIDA Disaster Number FL-20015]**

**Presidential Declaration Amendment of a Major Disaster for the State of Florida**

**AGENCY:** U.S. Small Business Administration.

**ACTION:** Amendment 2.

**SUMMARY:** This is an amendment of the Presidential declaration of a major disaster for the State of Florida (FEMA-4834-DR), dated October 11, 2024.

*Incident:* Hurricane Milton.

**DATES:** Issued on November 22, 2024.

*Incident Period:* October 5, 2024 through November 2, 2024.

*Physical Loan Application Deadline Date:* January 7, 2025.

*Economic Injury (EIDL) Loan Application Deadline Date:* July 11, 2025.

**ADDRESSES:** Visit the MySBA Loan Portal at <https://lending.sba.gov> to apply for a disaster assistance loan.

**FOR FURTHER INFORMATION CONTACT:** Alan Escobar, Office of Disaster Recovery & Resilience, U.S. Small Business Administration, 409 3rd Street SW, Suite 6050, Washington, DC 20416, (202) 205-6734.

**SUPPLEMENTARY INFORMATION:** The notice of the President's major disaster declaration for the State of Florida, dated October 11, 2024, is hereby amended to extend the deadline for filing applications for physical damages as a result of this disaster to January 7, 2025.

All other information in the original declaration remains unchanged.

(Catalog of Federal Domestic Assistance Number 59008)

**Alejandro Contreras,**  
*Acting Deputy Associate Administrator, Office of Disaster Recovery & Resilience.*

[FR Doc. 2024-28281 Filed 12-2-24; 8:45 am]

**BILLING CODE 8026-09-P**

**SMALL BUSINESS ADMINISTRATION**

**[Disaster Declaration #20732 and #20733; FLORIDA Disaster Number FL-20014]**

**Presidential Declaration Amendment of a Major Disaster for Public Assistance Only for the State of Florida**

**AGENCY:** U.S. Small Business Administration.

**ACTION:** Amendment 5.

**SUMMARY:** This is an amendment of the Presidential declaration of a major disaster for Public Assistance Only for the State of Florida (FEMA-4828-DR), dated October 5, 2024.

*Incident:* Hurricane Helene.

**DATES:** Issued on November 22, 2024.

*Incident Period:* September 23, 2024 through October 7, 2024.

*Physical Loan Application Deadline Date:* December 4, 2024.

*Economic Injury (EIDL) Loan Application Deadline Date:* July 7, 2025.

**ADDRESSES:** Visit the MySBA Loan Portal at <https://lending.sba.gov> to apply for a disaster assistance loan.

**FOR FURTHER INFORMATION CONTACT:** Alan Escobar, Office of Disaster Recovery & Resilience, U.S. Small Business Administration, 409 3rd Street SW, Suite 6050, Washington, DC 20416, (202) 205-6734.

**SUPPLEMENTARY INFORMATION:** The notice of the President's major disaster declaration for Private Non-Profit organizations in the State of Florida, dated October 5, 2024, is hereby amended to include the following areas as adversely affected by the disaster.

*Primary Counties:* Clay, Hillsborough.

All other information in the original declaration remains unchanged.

(Catalog of Federal Domestic Assistance Number 59008)

**Alejandro Contreras,**

*Acting Deputy Associate Administrator, Office of Disaster Recovery & Resilience.*

[FR Doc. 2024-28282 Filed 12-2-24; 8:45 am]

**BILLING CODE 8026-09-P**

## SOCIAL SECURITY ADMINISTRATION

[Docket No. SSA-2024-0013]

### Privacy Act of 1974; Matching Program

**AGENCY:** Social Security Administration (SSA).

**ACTION:** Notice of a New Matching Program.

**SUMMARY:** In accordance with the provisions of the Privacy Act, as amended, this notice announces a new matching program with Center for Medicare & Medicaid Services (CMS).

**DATES:** Submit comments on the proposed matching program no later than January 2, 2025.

The matching program will be applicable on January 2, 2025, or once a minimum of 30 days after publication of this notice has elapsed, whichever is later. The matching program will be in effect for a period of 18 months.

**ADDRESSES:** You may submit comments by any one of three methods—internet, fax, or mail. Do not submit the same comments multiple times or by more than one method. Regardless of which method you choose, please state that your comments refer to Docket No. SSA-2024-0013 so that we may associate your comments with the correct regulation. **CAUTION:** You should be careful to include in your comments only information that you wish to make publicly available. We strongly urge you not to include in your

comments any personal information, such as Social Security numbers or medical information.

1. *Internet:* We strongly recommend that you submit your comments via the internet. Please visit the Federal eRulemaking portal at <https://www.regulations.gov>. Use the *Search* function to find docket number SSA-2024-0013 and then submit your comments. The system will issue you a tracking number to confirm your submission. You will not be able to view your comment immediately because we must post each submission manually. It may take up to a week for your comments to be viewable.

2. *Fax:* Fax comments to (833) 410-1613.

3. *Mail:* Matthew Ramsey, Executive Director, Office of Privacy and Disclosure, Office of the General Counsel, Social Security Administration, 6401 Security Boulevard, Baltimore, MD 21235-6401, or emailing [Matthew.Ramsey@ssa.gov](mailto:Matthew.Ramsey@ssa.gov). Comments are also available for public viewing on the Federal eRulemaking portal at <https://www.regulations.gov> or in person, during regular business hours, by arranging with the contact person identified below.

**FOR FURTHER INFORMATION CONTACT:**

Interested parties may submit general questions about the matching program to Cynthia Scott, Division Director, Office of Privacy and Disclosure, Office of the General Counsel, Social Security Administration, 6401 Security Boulevard, Baltimore, MD 21235-6401, at telephone: (410) 966-1943, or send an email to [Cynthia.Scott@ssa.gov](mailto:Cynthia.Scott@ssa.gov).

**SUPPLEMENTARY INFORMATION:**

**PARTICIPATING AGENCIES:**

SSA and CMS.

**AUTHORITY FOR CONDUCTING THE MATCHING PROGRAM:**

This matching agreement is between SSA and CMS. This agreement is executed in compliance with the Privacy Act of 1974 (Privacy Act) (5 U.S.C. 552a), as amended by the Computer Matching and Privacy Protection Act of 1988, as amended, and the regulations and guidance promulgated thereunder.

Sections 202 and 223 of the Social Security Act (Act) (42 U.S.C. 402 and 423) outline the requirements for eligibility to receive Old-Age, Survivors, and Disability Insurance Benefits under Title II of the Act. Section 205(c) of the Act (42 U.S.C. 405) directs the Commissioner of SSA to verify the eligibility of a beneficiary. Section 704(e) of the Act (42 U.S.C. 904(e)) provides that SSA and the Department

of Health and Human Services shall enter into agreements as may be necessary to provide information to each other to meet the programmatic needs of the requesting agency.

This matching program employs CMS systems containing Protected Health Information (PHI) as defined by Health and Human Services regulation “Standards for Privacy of Individually Identifiable Health Information” (45 CFR 160 and 164). PHI may only be disclosed by CMS without the written authorization of the individual, or the opportunity for the individual to agree or object, as permitted or required by the routine uses or “Standards” provided for in 45 CFR 164.512.

**PURPOSE(S):**

This agreement sets forth the terms and conditions under which CMS will disclose to SSA Medicare non-utilization information for Social Security Title II beneficiaries aged 90 and above.

CMS will identify Medicare enrollees whose records have been inactive for three or more years. SSA will use this data as an indicator to select and prioritize cases for review to determine continued eligibility for benefits under Title II of the Act. SSA will contact these individuals to verify ongoing eligibility. In addition, SSA will use this data for the purposes of fraud discovery and the analysis of fraud programs operations. This agreement allows for SSA to evaluate the data for the purposes of fraud detection. SSA will refer individual cases of suspected fraud, waste, or abuse to the Office of the Inspector General for investigation.

**CATEGORIES OF INDIVIDUALS:**

The individuals whose information is involved in this matching program are Social Security Title II beneficiaries aged 90 and above.

**CATEGORIES OF RECORDS:**

SSA will provide CMS with a finder file containing the following information for each individual: (a) Title II Claim Account Number (CAN); (b) Title II Beneficiary Identification Code (BIC); (c) First Name, (d) Last Name, and (e) Date of birth.

CMS will provide SSA with a response file containing the following information for each individual: (a) CMS File Number (identified as a Health Insurance Claim Number (HICN) or Medicare Beneficiary Identifier (MBI)); (b) Whether CMS matched Beneficiary or individual is a Medicare beneficiary; (c) Whether individual is a Medicaid recipient; (d) Whether Medicare was used in the last 3 years;

(e) Whether the beneficiary is a part of an Health Maintenance Organization; (f) Whether the beneficiary lives in a nursing home; (g) Whether the beneficiary has private health insurance; (h) Whether the beneficiary has veteran’s health insurance; or (i) Whether the beneficiary has Tricare insurance.

**SYSTEM(S) OF RECORDS:**

SSA will disclose to CMS information from the Master Beneficiary Record (MBR) (60–0090), last fully published January 11, 2006 (71 FR 1826), as amended on December 10, 2007 (72 FR 69723), July 5, 2013 (78 FR 40542), July 3, 2018 (83 FR 31250–31251), and November 1, 2018 (83 FR 54969) and 890 FR 825 (January 5, 2024).

SSA will retain data elements from the CMS response file in the Anti-Fraud Systems (60–0388), last fully published December 11, 2020 (85 FR 80211) for SSA fraud-related analytics or data that leads SSA to initiate a fraud investigation.

CMS will disclose to SSA information from the following Systems of Record (SORs): (a) National Claims History (NCH) (09–70–0558), published November 20, 2006 (71FR 67137); (b) Enrollment Data Base (EDB) (09–70–0502), published February 26, 2008 at 73FR 10249; and (c) The Long Term Care—Minimum Data Set (MDS) (90–70–0528), published March 19, 2007 at 72 FR 12801.

SSA’s and CMS’s SORs have routine uses permitting the disclosures needed to conduct this match.

**Matthew Ramsey,**

*Executive Director, Office of Privacy and Disclosure, Office of the General Counsel.*

[FR Doc. 2024–28313 Filed 12–2–24; 8:45 am]

**BILLING CODE 4191–02–P**

**SOCIAL SECURITY ADMINISTRATION**

[Docket No. SSA–2024–0035]

**Privacy Act of 1974; System of Records**

**AGENCY:** Social Security Administration (SSA).

**ACTION:** Notice of a modified system of records.

**SUMMARY:** In accordance with the Privacy Act of 1974, we are issuing public notice of our intent to modify our existing systems of records listed below under the System Name and Number section. This notice publishes details of the modified systems as set forth below under the caption, **SUPPLEMENTARY INFORMATION.**

**DATES:** The system of records notice (SORN) is applicable upon its publication in today’s **Federal Register**, with the exception of the new routine use, which is effective January 2, 2025.

We invite public comment on the addition of the routine use. In accordance with the Privacy Act of 1974, we are providing the public a 30-day period in which to submit comments. Therefore, please submit any comments by January 2, 2025.

**ADDRESSES:** The public, Office of Management and Budget (OMB), and Congress may comment on this publication by writing to the Executive Director, Office of Privacy and Disclosure, Office of the General Counsel, SSA, Room G–401 West High Rise, 6401 Security Boulevard, Baltimore, Maryland 21235–6401, or through the Federal e-Rulemaking Portal at <https://www.regulations.gov>. Please reference docket number SSA–2024–0035. All comments we receive will be available for public inspection at the

above address, and we will post them to <https://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:**

Tristin Dorsey, Government Information Specialist, Privacy Implementation Division, Office of Privacy and Disclosure, Office of the General Counsel, SSA, Room G–401 West High Rise, 6401 Security Boulevard, Baltimore, Maryland 21235–6401, telephone: (410) 966–5855, email: [OGC.OPD.SORN@ssa.gov](mailto:OGC.OPD.SORN@ssa.gov).

**SUPPLEMENTARY INFORMATION:**

Recognizing that, in certain limited circumstances, executors or entities may seek authorization for fees for the services performed by a representative, and individuals may seek authorization for fees for services provided even if they have not been appointed on a claim, we are modifying an existing routine use in the Attorney Fee File (60–0003) and in the Claims Folders System (60–0089) to reflect the following:

*To a representative (current or former), the executor of a deceased representative’s estate or individual recognized by the State as the representative of the estate, an individual who provided representational services, the entity with which the representative or individual is or was affiliated through registration, or an individual or entity to which the agency disbursed a fee payment, to the extent necessary to dispose of a fee petition or fee agreement or resolve other fee-related issues in claims-related matters, but not to include pre-decisional deliberative documents, such as analyses and recommendations prepared for the decision-maker.*

**SYSTEM NAME AND NUMBER:**

System number and name	Routine uses	Federal Register Citation No./publication date
60–0003—Attorney Fee File .....	No. 4 .....	71 FR 1803, 01/11/06. 72 FR 69723, 12/10/07. 83 FR 54969, 11/01/18. 89 FR 14553, 02/27/24.
60–0089—Claims Folders System .....	No. 39 .....	84 FR 58422, 10/31/19. 89 FR 14553, 02/27/24.

We are not republishing the system of records notices in their entirety. Instead, we are republishing only the identification number; the system of records name; the number of the modified or new routine use; and the issue of the **Federal Register** in which the system of records notice was last published in full, including the subsequent modification to the system

of records notice’s publication date and page number.

*Security Classification:* Unclassified.

*System Location:* SSA provides the address of the component and system manager responsible for each system in the **Federal Register** notices listed above.

*System Manager(s):* SSA provides the title, business address, and contact information of the agency official who is

responsible for the system in the **Federal Register** notices listed above.

*History:* SSA provides the citation to the last fully published **Federal Register** notices, as well as last subsequent modification notice to the system of records notices listed above.

In accordance with 5 U.S.C. 552a(r), we have provided a report to OMB and

Congress on this modified system of records.

**Matthew Ramsey,**

*Executive Director, Office of Privacy and Disclosure, Office of the General Counsel.*

[FR Doc. 2024–28312 Filed 12–2–24; 8:45 am]

**BILLING CODE 4191–02–P**

## DEPARTMENT OF TRANSPORTATION

### Federal Highway Administration

[Docket No. FHWA–2024–0077]

#### Agency Information Collection

#### Activities: Request for Comments for a New Information Collection

**AGENCY:** Federal Highway Administration (FHWA), DOT.

**ACTION:** Notice and request for comments.

**SUMMARY:** The FHWA invites public comments about our intention to request the Office of Management and Budget's (OMB) approval for a new information collection, which is summarized below under **SUPPLEMENTARY INFORMATION**. We are required to publish this notice in the **Federal Register** by the Paperwork Reduction Act of 1995.

**DATES:** Please submit comments by February 3, 2025.

**ADDRESSES:** You may submit comments identified by DOT Docket ID Number 0077 by any of the following methods:

*Website:* For access to the docket to read background documents or comments received go to the Federal eRulemaking Portal: Go to <http://www.regulations.gov>.

Follow the online instructions for submitting comments.

*Fax:* 1–202–493–2251.

*Mail:* Docket Management Facility, U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590–0001.

*Hand Delivery or Courier:* U.S. Department of Transportation, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:** Rebecca Lupes, (202) 366–7808, Office of Natural Environment, Federal Highway Administration, Department of Transportation, 1200 New Jersey Avenue SE, Washington, DC 20590. Office hours are from 7 a.m. to 4 p.m., Monday through Friday, except Federal holidays.

#### SUPPLEMENTARY INFORMATION:

*Title:* Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Discretionary Grant Program and Voluntary Resilience Improvement Plans.

*Background:* The Bipartisan Infrastructure Law (BIL) established the Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program to help make surface transportation more resilient to natural hazards, including climate change, sea level rise, flooding, extreme weather events, and other natural disasters. The PROTECT Discretionary Grant Program provides competitive grants to conduct resilience planning, to make surface transportation assets more resilient to current and future weather events and natural disasters, to strengthen and protect evacuation routes, and to protect, strengthen, or relocate coastal infrastructure that is at long-term risk to sea level rise. The program includes four separate grant categories: Planning, Resilience Improvement, Community Resilience and Evacuation Routes, and At-Risk Coastal Infrastructure.

Eligible applicants under the PROTECT Discretionary Grant Program include State Departments of Transportation (DOTs), Metropolitan Planning Organizations (MPOs), local governments, special purpose districts or public authorities with a transportation function, and Indian Tribes. Federal land management agencies are eligible entities if the agency applies jointly with a State or group of States. U.S. Territories are eligible under the At-Risk Coastal Infrastructure category.

#### Summary of Information Collection Activities

For this competitive grant program, the FHWA has issued multiple Notices of Funding Opportunity (NOFO) that describe the requirements of the PROTECT Discretionary Grant Program, including the criteria that will be used to evaluate applications. The NOFOs provide a description of the application requirements. Eligible applicants request PROTECT funds in the form of an electronic grant application. Additional information submissions are required for applicants who are selected for a grant (*i.e.*, the grantees) during the grant agreement, grant implementation and evaluation phases.

Additionally, State DOTs and MPOs may develop Resilience Improvement Plans under the PROTECT Program. A Resilience Improvement Plan is a voluntary, risk-based assessment of vulnerable transportation assets in

immediate and long-term transportation planning that demonstrates a systemic approach to surface transportation system resilience (23 U.S.C. 176(e)). A Resilience Improvement Plan can reduce Non-Federal match by up to 10% for both PROTECT Formula and Discretionary Grant projects (23 U.S.C. 176(e)(1)(B)).

FHWA's Office of Natural Environment will continue to support ad-hoc resilience & planning technical assistance for State DOTs and MPOs on a variety of topics during the PRA covered time frame. These activities may include voluntary virtual or in-person peer exchanges, in addition to general ad-hoc technical assistance when requested by DOTs and MPOs. Participants choosing to enroll in a peer exchange are asked to submit a pre-event questionnaire. There may be additional collection of information in support of FHWA's ad-hoc technical assistance activities.

Lastly, FHWA is required by 23 U.S.C. 176(f)(1) to establish effectiveness metrics and evaluation procedures for the PROTECT Discretionary Grant Program and select a representative sample of projects to evaluate based on the metrics and procedures. FHWA will select a representative sample of approximately 50 funded projects to evaluate their impact and effectiveness to fulfil this statutory requirement and support a PROTECT Discretionary Program Evaluation. Projects selected as part of this representative sample will have additional reporting requirements.

Burden estimates for each of these PROTECT program components are described below:

#### I. Grant Application, Agreement, Implementation and Evaluation Phase Activities

##### *Grant Application Phase*

Eligible entities that may apply for PROTECT Discretionary grants vary depending on the type of the competitive grant. Planning Grants, Resilience Improvement Grants, and Community Resilience and Evacuation Route Grants have the same statutory rules for eligible applicants. The At-Risk Coastal Infrastructure Grant category has different statutory rules for eligible applicants. During the application process applicants will provide a project narrative and budget information, Standard Form 424, and Disclosure of Lobbying Activities form (SF–LLL).

—*Respondents:* PROTECT Grant applicants.

—*Frequency:* One time per grant application.

- Estimated Average Burden per Response*: 157 hours for a Planning Grant application, 208 hours for a Resilience Improvement Grant application, 208 hours for a Community Resilience and Evacuation Routes Grant application, and 108 hours for an At-Risk Coastal Infrastructure Grant application.
- Estimated Total Annual Burden Hours*: It is expected that 945 respondents will complete approximately one application during the 3-year PRA period for an estimated total of 177,160 annual burden hours.

#### Grant Agreement Phase

All grant recipients must work with FHWA to develop and execute a grant agreement detailing terms and conditions for use of funds.

- Respondents*: All Grant Recipients.
- Frequency*: One time, unless a grant agreement amendment is necessary.
- Estimated burden*: Approximately 30 hours per respondent. Some capital projects may need to process amendments to the grant agreement which is expected to take an additional 10–15 hours per amendment.

#### Grant Implementation Phase

During the grant implementation phase, the grantee completes semi-annual progress and recertification reports to ensure the project budget and schedule are maintained to the maximum extent possible, that compliance with Federal regulations are met, and the project is completed to the highest degree of quality. Post-award reporting responsibilities include Semi-Annual Performance Progress Reports (FHWA–PPR), and a financial status report called the SF–425 (also known as the Federal Financial Report or SF–FFR). Semi-Annual Project Progress Reports are submitted as an attachment to the SF–425 form. Additionally, grant recipients requesting advance or reimbursement need to provide an SF 270 and an SF 271 form, respectively. After project close and no later than 120 days after the end of the period of performance, grant recipients shall submit a Final Project Progress Report and Recertification, including a final Federal Financial Report (SF–425).

- Respondents*: All Grant recipients.
- Frequency*: Semi-Annually During the period of performance; one Final Progress Report after project close.
- Estimated Burden Hours*: Grantees provide a Semi-Annual Project Progress Report (FHWA–PPR) as an attachment to their Federal Financial

Report (SF 425). Approximately 1 hours.

- Approximately 1 additional hours each time an SF 270 and an SF 271 are used for an advance or reimbursement.

#### Grant Evaluation Phase

During the evaluation phase, reporting is necessary to comply with 2 CFR 200.301, to assess program effectiveness for the Federal Government, and to provide information regarding how the project is achieving the outcomes that grantees have targeted. Grantees collect both baseline and project performance measure data unique to their project as outlined in their grant agreement, and report on their chosen performance measure(s) via an Annual Performance Report (see *Grant Agreement Schedule G—Performance Measurement*). Annual Performance Reports are submitted electronically to FHWA for three years post project completion for all project types, followed by a final performance report.

- Respondents*: All Grant Recipients.
- Frequency*: Annually during a 3-year period of performance.
- Estimated Burden*: Approximately 2 hours per year.

*Total burden hours for grant agreement, implementation, and evaluation phases (all recipients)*: Over the three-year PRA period, FHWA estimates that it will take approximately 40 hours to complete all the post-award activities outlined above for a Planning Grant, 63 hours for a Resilience Improvement Grant, 63 hours for a Community Resilience and Evacuation Route Grant, and 63 hours for an At-Risk Coastal Infrastructure Grant. FHWA estimates that 255 award recipients will perform these reporting activities during the 3-year PRA period, which will result in 16,455 total burden hours.

## II. Resilience Improvement Plans and Related Technical Assistance

Resilience Improvement Plans, Resilience Planning Peer Exchanges, and FHWA on-demand planning and resilience technical assistance are all voluntary activities completed by State DOTs and MPOs that occur on an ad-hoc frequency. Resilience Improvement Plans are estimated to require 250 hours to complete. Resilience Planning Peer Exchange pre-event questionnaires require approximately 1 hour. Information collections to support related FHWA resilience technical assistance activities will vary widely. Generally, these activities may include

electronic or in-person submission of project plans and designs, draft technical materials, and PowerPoint materials from a State DOT or MPO to FHWA and/or a peer group. FHWA may conduct informal interviews, focus groups or additional short electronic questionnaires to support these technical assistance activities and gauge interest in future trainings and assistance offerings.

- Respondents*: State Departments of Transportation and Metropolitan Planning Organizations.
- Frequency*: One time.
- Estimated Total Annual Burden Hours*: It is estimated that 25 State DOTs and 25 MPOs will complete Resilience Improvement Plans during the 3-year PRA period for an estimated total of 12,500 annual burden hours. FHWA estimates that approximately 350 participants will complete a peer exchange pre-event questionnaire for an FHWA peer exchange event, resulting in an estimated total of 350 burden hours.

## III. PROTECT Metrics and Program Evaluation Activities

A smaller number of grantees selected for further monitoring to support an FHWA Evidence Act Program Evaluation and fulfill FHWA's obligations under 23 U.S.C. 176(f)(1)(B) will need to coordinate with FHWA to provide baseline data in the pre-construction phase. These grantees will also assist FHWA in gathering annual project performance data for 3–5 years post construction. Participants may be asked to attend interviews and focus groups to verify desktop, primary source, or field measurement data collected by FHWA. A small amount of additional data collection may be required of all ~200 PROTECT Grantees and/or their supporting FHWA Division (State) Offices to gauge interest and capacity to participate in the program evaluation and identify the range of typical outcomes and challenges for grantees. It is anticipated that any information collection from this wider group would be done via an electronic form submittal and be a one-time collection of approximately 2 hours.

- Respondents*: A representative sample of approximately 50 selected grantees are expected to participate in the PROTECT Discretionary Resilience Metrics and Program Evaluation data collection.
- Frequency*: One-time baseline data collection followed by annual data collection/coordination with FHWA during study period.
- Estimated Average Burden per Response*: FHWA estimates 60 hours

of burden annually per selected project for data collection and coordination with FHWA. An additional 15 hours of burden in the first year for notification, initial coordination with FHWA and baseline data collection.

—**Estimated Total Annual Burden**

**Hours:** It is expected that 50 grantees will be selected for this evaluation for an estimated total of 9,850 annual burden hours during the PRA period.

**Public Comments Invited:** You are asked to comment on any aspect of this information collection, including: (1) Whether the proposed collection is necessary for the FHWA's performance; (2) the accuracy of the estimated burdens; (3) ways for the FHWA to enhance the quality, usefulness, and clarity of the collected information; and (4) ways that the burden could be minimized, including the use of electronic technology, without reducing the quality of the collected information. The agency will summarize and/or include your comments in the request for OMB's clearance of this information collection.

**Authority:** The Paperwork Reduction Act of 1995; 44 U.S.C. chapter 35, as amended; and 49 CFR 1.48.

Issued on: November 27, 2024.

**Jazmyne Lewis,**

*Information Collection Officer.*

[FR Doc. 2024-28339 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-22-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Highway Administration

[Docket No. FHWA-2024-0079]

#### Agency Information Collection Activities: Notice of Request for Reinstatement of a Previously Approved Information Collection

**AGENCY:** Federal Highway Administration (FHWA), DOT.

**ACTION:** Notice of request for reinstatement of a previously approved information collection.

**SUMMARY:** The FHWA invites public comments about our intention to request the Office of Management and Budget's (OMB) approval for reinstatement of an existing information collection that is summarized below under

**SUPPLEMENTARY INFORMATION.** We are required to publish this notice in the **Federal Register** by the Paperwork Reduction Act of 1995.

**DATES:** Please submit comments by February 3, 2025.

**ADDRESSES:** You may submit comments identified by DOT Docket ID Number 0079 by any of the following methods:

**Website:** For access to the docket to read background documents or comments received go to the Federal eRulemaking Portal: Go to <http://www.regulations.gov>.

Follow the online instructions for submitting comments.

**Fax:** 1-202-493-2251.

**Mail:** Docket Management Facility, U.S. Department of Transportation, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.

**Hand Delivery or Courier:** U.S. Department of Transportation, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal holidays.

**FOR FURTHER INFORMATION CONTACT:**

Tiara McCray, (202) 366-9793, or Arnold Feldman, (202) 366-2028, Office of Real Estate Services, Federal Highway Administration, Department of Transportation, 1200 New Jersey Avenue SE, Washington, DC 20590. Office hours are from 8 a.m. to 5 p.m., Monday through Friday, except Federal holidays.

**SUPPLEMENTARY INFORMATION:**

**Title:** Annual State Right-of-Way Acquisition Data.

**OMB Control:** 2125-0661.

**Background:** Moving Ahead for Progress in the 21st Century Act (MAP-21) section 1521(d) amends the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, section 213(b), codified in 42 U.S.C. 4633(b)(4) to require, "that each Federal agency that has programs or projects requiring the acquisition of real property or causing a displacement from real property subject to the provisions of this chapter shall provide to the lead agency an annual summary report that describes the activities conducted by the Federal agency."

**Respondents:** There are 56 respondents, including 50 State Transportation Departments, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, the Virgin Islands and American Samoa. Each respondent will be asked to send an annual report to FHWA Office of Real Estate Services which outlines state or territory specific acquisition data.

**Frequency:** Annually. Every October FHWA Office of Real Estate Services will request this data.

**Estimated Average Burden per Response:** Approximately 5 hours per response.

**Estimated Total Annual Burden Hours:** Approximately 280 total hours for all 56 respondents.

**Public Comments Invited:** You are asked to comment on any aspect of this information collection, including: (1) Whether the proposed collection is necessary for the FHWA's performance; (2) the accuracy of the estimated burdens; (3) ways for the FHWA to enhance the quality, usefulness, and clarity of the collected information; and (4) ways that the burden could be minimized, including the use of electronic technology, without reducing the quality of the collected information. The agency will summarize and/or include your comments in the request for OMB's clearance of this information collection.

**Authority:** The Paperwork Reduction Act of 1995; 44 U.S.C. chapter 35, as amended; and 49 CFR 1.48.

Issued on: November 27, 2024.

**Jazmyne Lewis,**

*Information Collection Officer.*

[FR Doc. 2024-28303 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-22-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Motor Carrier Safety Administration

[Docket No. FMCSA-2006-26367]

#### Motor Carrier Safety Advisory Committee (MCSAC); Notice of Public Meeting

**AGENCY:** Federal Motor Carrier Safety Administration (FMCSA), Department of Transportation (DOT).

**ACTION:** Notice of public meeting.

**SUMMARY:** This notice announces a virtual meeting of the MCSAC, which will take place via videoconference.

**DATES:** The meeting will be held on Tuesday, December 17 and Wednesday, December 18, 2024, from 10 a.m.-4 p.m. ET each day. Requests for accommodations for a disability must be received by Friday, December 6. Requests to submit written materials for consideration during the meeting must be received no later than Friday, December 6.

**ADDRESSES:** The meeting will be in a virtual format for its entirety. Please register in advance of the meeting at [www.fmcsa.dot.gov/mcsac](http://www.fmcsa.dot.gov/mcsac). A copy of the agenda will be made available at [www.fmcsa.dot.gov/mcsac](http://www.fmcsa.dot.gov/mcsac) 1 week in advance of the meeting. Once approved, copies of the meeting minutes will be available at the website following the meeting. You may visit the MCSAC



website at [www.fmcsa.dot.gov/mcsac](http://www.fmcsa.dot.gov/mcsac) for further information on the committee and its activities.

**FOR FURTHER INFORMATION CONTACT:** Ms. Shannon L. Watson, Deputy Designated Federal Officer, MCSAC, FMCSA, 1200 New Jersey Avenue SE, Washington, DC 20590, (202) 360-2925, [mcsac@dot.gov](mailto:mcsac@dot.gov). Any committee-related request should be sent to the person listed in this section.

#### SUPPLEMENTARY INFORMATION:

### I. Background

#### *Purpose of the Committee*

MCSAC was established to provide FMCSA with advice and recommendations on motor carrier safety programs and motor carrier safety regulations. MCSAC is composed of 20 voting representatives from the motor carrier safety advocacy, safety enforcement, labor, and industry sectors. The diversity of MCSAC ensures the requisite range of views and expertise necessary to discharge its responsibilities. MCSAC operates as a statutory committee under the authority of the U.S. Department of Transportation (DOT), established in accordance with the provisions of the Federal Advisory Committee Act (FACA), as amended (5 U.S.C. ch. 10).

#### *Meeting Agenda*

*Agenda topics for the meeting will include:*

- *Ethics Briefing*—An attorney from FMCSA's Office of Chief Counsel will conduct MCSAC's annual ethics training;
- *Truck Parking*—FMCSA will provide a presentation of Federal and State efforts to increase truck parking, and task the MCSAC to provide recommendations concerning additional government and private sector actions that should be considered to increase parking; and
- *CMV Crash Data Trends and Seat Belt Usage*—FMCSA will present a review of truck crash data and, truck occupant fatality/injury data and the percentage of these drivers that were not wearing their seat belts. The Agency will engage the MCSAC to identify opportunities to promote greater levels of seat belt usage among CMV drivers.

### II. Meeting Participation

Advance registration is required. Please register at [www.fmcsa.dot.gov/mcsac](http://www.fmcsa.dot.gov/mcsac) by the deadline referenced in the **DATES** section. The meeting will be open to the public for its entirety. The U.S. Department of Transportation is committed to providing equal access to this meeting for all participants. If you

need alternative formats or services because of a disability, such as sign language, interpretation, or other ancillary aids, please contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

Oral comments from the public will be heard during a public comment period at the discretion of the MCSAC chair and Designated Federal Officer. FMCSA asks individuals to limit their comments to two minutes on the issues under consideration only. Members of the public may submit written comments to the person listed in the **FOR FURTHER INFORMATION CONTACT** section on the topics to be considered during the meeting by the deadline referenced in the **DATES** section.

**Larry W. Minor,**

*Associate Administrator for Policy.*

[FR Doc. 2024-28236 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-EX-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Motor Carrier Safety Administration

**[Docket No. FMCSA-2013-0124; FMCSA-2014-0104; FMCSA-2015-0326; FMCSA-2015-0329; FMCSA-2017-0058; FMCSA-2017-0059; FMCSA-2017-0060; FMCSA-2018-0135; FMCSA-2020-0027; FMCSA-2022-0035; FMCSA-2022-0036]**

#### Qualification of Drivers; Exemption Applications; Hearing

**AGENCY:** Federal Motor Carrier Safety Administration (FMCSA), Department of Transportation (DOT).

**ACTION:** Notice of final disposition.

**SUMMARY:** FMCSA announces its decision to renew exemptions for 15 individuals from the hearing requirement in the Federal Motor Carrier Safety Regulations (FMCSRs) for interstate commercial motor vehicle (CMV) drivers. The exemptions enable these hard of hearing and deaf individuals to continue to operate CMVs in interstate commerce.

**DATES:** Each group of renewed exemptions were applicable on the dates stated in the discussions below and will expire on the dates provided below.

**FOR FURTHER INFORMATION CONTACT:** Ms. Christine A. Hydock, Chief, Medical Programs Division, FMCSA, DOT, 1200 New Jersey Avenue SE, Room W64-224, Washington, DC 20590-0001, (202) 366-4001, [fmcsamedical@dot.gov](mailto:fmcsamedical@dot.gov). Office hours are 8:30 a.m. to 5 p.m. ET Monday through Friday, except Federal holidays. If you have questions regarding viewing

or submitting material to the docket, contact Dockets Operations, (202) 366-9826.

#### SUPPLEMENTARY INFORMATION:

### I. Public Participation

#### *A. Viewing Comments*

To view comments go to [www.regulations.gov](http://www.regulations.gov). Insert the docket number (FMCSA-2013-0124, FMCSA-2014-0104, FMCSA-2015-0326, FMCSA-2015-0329, FMCSA-2017-0058, FMCSA-2017-0059, FMCSA-2017-0060, FMCSA-2018-0135, FMCSA-2020-0027, FMCSA-2022-0035, or FMCSA-2022-0036) in the keyword box and click "Search." Next, sort the results by "Posted (Newer-Older)," choose the first notice listed, and click "Browse Comments." If you do not have access to the internet, you may view the docket online by visiting Dockets Operations on the ground floor of the DOT West Building, 1200 New Jersey Avenue SE, Washington, DC 20590-0001, between 9 a.m. and 5 p.m. ET Monday through Friday, except Federal holidays. To be sure someone is there to help you, please call (202) 366-9317 or (202) 366-9826 before visiting Dockets Operations.

#### *B. Privacy Act*

In accordance with 49 U.S.C. 31315(b)(6), DOT solicits comments from the public on the exemption requests. DOT posts these comments, without edit, including any personal information the commenter provides, to [www.regulations.gov](http://www.regulations.gov). As described in the system of records notice DOT/ALL 14 (Federal Docket Management System), which can be reviewed at <https://www.transportation.gov/individuals/privacy/privacy-act-system-records-notices>, the comments are searchable by the name of the submitter.

### II. Background

On October 25, 2024, FMCSA published a notice announcing its decision to renew exemptions for 15 individuals from the hearing standard in 49 CFR 391.41(b)(11) to operate a CMV in interstate commerce and requested comments from the public (89 FR 85287). The public comment period ended on November 25, 2024, and no comments were received.

FMCSA has evaluated the eligibility of these applicants and determined that renewing these exemptions would likely achieve a level of safety that is equivalent to, or greater than, the level that would be achieved by complying with § 391.41(b)(11).

The physical qualification standard for drivers regarding hearing found in

§ 391.41(b)(11) states that a person is physically qualified to drive a CMV if that person first perceives a forced whispered voice in the better ear at not less than 5 feet with or without the use of a hearing aid or, if tested by use of an audiometric device, does not have an average hearing loss in the better ear greater than 40 decibels at 500 Hz, 1,000 Hz, and 2,000 Hz with or without a hearing aid when the audiometric device is calibrated to American National Standard (formerly ASA Standard) Z24.5—1951.

This standard was adopted in 1970 and was revised in 1971 to allow drivers to be qualified under this standard while wearing a hearing aid (35 FR 6458, 6463 (Apr. 22, 1970) and 36 FR 12857 (July 8, 1971), respectively).

### III. Discussion of Comments

FMCSA received no comments in this proceeding.

### IV. Conclusion

Based upon its evaluation of the 15 renewal exemption applications and comments received, FMCSA announces its decision to exempt the following drivers from the hearing requirement in § 391.41 (b)(11).

As of November 25, 2024, and in accordance with 49 U.S.C. 31136(e) and 31315(b), the following nine individuals have satisfied the renewal conditions for obtaining an exemption from the hearing requirement in the FMCSRs for interstate CMV drivers (89 FR 85287):

Stephen Arellano (CO)  
Jimmy Benavides (TX)  
Robert Burnett (AZ)  
Leslie Crump (MI)  
Clark Dobson (CA)  
Tonnette Garza (FL)  
Paul Mansfield (KS)  
Michael Murrah (GA)  
Joseph Woodle (KY)

The drivers were included in docket number FMCSA–2013–0124, FMCSA–2015–0326, FMCSA–2015–0329, FMCSA–2017–0058, FMCSA–2017–0059, FMCSA–2020–0027, FMCSA–2022–0035, or FMCSA–2022–0036. Their exemptions were applicable as of November 25, 2024 and will expire on November 25, 2026.

As of November 30, 2024, and in accordance with 49 U.S.C. 31136(e) and 31315(b), the following six individuals have satisfied the renewal conditions for obtaining an exemption from the hearing requirement in the FMCSRs for interstate CMV drivers (89 FR 85287):

Deontae Blanks (TX)  
Alan Bridgeford (AZ)  
Michael Dohanish (OH)  
Bruce Dunn (LA)

Teela Gilmore (GA)  
Adalberto Rodriguez (NY)

The drivers were included in docket number FMCSA–2014–0104, FMCSA–2017–0058, FMCSA–2017–0060, or FMCSA–2018–0135. Their exemptions were applicable as of November 30, 2024 and will expire on November 30, 2026.

In accordance with 49 U.S.C. 31315(b), each exemption will be valid for 2 years from the effective date unless revoked earlier by FMCSA. The exemption will be revoked if the following occurs: (1) the person fails to comply with the terms and conditions of the exemption; (2) the exemption has resulted in a lower level of safety than was maintained prior to being granted; or (3) continuation of the exemption would not be consistent with the goals and objectives of 49 U.S.C. 31136, 49 U.S.C. chapter 313, or the FMCSRs.

Larry W. Minor,

*Associate Administrator for Policy.*

[FR Doc. 2024–28241 Filed 12–2–24; 8:45 am]

BILLING CODE 4910–EX–P

## DEPARTMENT OF TRANSPORTATION

### Federal Motor Carrier Safety Administration

[Docket No. FMCSA–2013–0444; FMCSA–2015–0323; FMCSA–2018–0052; FMCSA–2018–0054; FMCSA–2020–0050; FMCSA–2022–0045]

#### Qualification of Drivers; Exemption Applications; Epilepsy and Seizure Disorders

**AGENCY:** Federal Motor Carrier Safety Administration (FMCSA), Department of Transportation (DOT).

**ACTION:** Notice of renewal of exemptions; request for comments.

**SUMMARY:** FMCSA announces its decision to renew exemptions for eight individuals from the requirement in the Federal Motor Carrier Safety Regulations (FMCSRs) that interstate commercial motor vehicle (CMV) drivers have “no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause loss of consciousness or any loss of ability to control a CMV.” The exemptions enable these individuals who have had one or more seizures and are taking anti-seizure medication to continue to operate CMVs in interstate commerce.

**DATES:** Each group of renewed exemptions are applicable on the dates stated in the discussions below and will expire on the dates stated in the

discussions below. Comments must be received on or before January 2, 2025.

**ADDRESSES:** You may submit comments identified by the Federal Docket Management System Docket No. FMCSA–2013–0444, Docket No. FMCSA–2015–0323, Docket No. FMCSA–2018–0052, Docket No. FMCSA–2018–0054, Docket No. FMCSA–2020–0050, or Docket No. FMCSA–2022–0045 using any of the following methods:

- *Federal eRulemaking Portal:* Go to [www.regulations.gov/](http://www.regulations.gov/), insert the docket number (FMCSA–2013–0444, FMCSA–2015–0323, FMCSA–2018–0052, FMCSA–2018–0054, FMCSA–2020–0050, or FMCSA–2022–0045) in the keyword box and click “Search.” Next, sort the results by “Posted (Newer-Older),” choose the first notice listed, and click on the “Comment” button. Follow the online instructions for submitting comments.

- *Mail:* Dockets Operations; U.S. Department of Transportation, 1200 New Jersey Avenue SE, West Building Ground Floor, Washington, DC 20590–0001.

- *Hand Delivery:* West Building Ground Floor, 1200 New Jersey Avenue SE, Washington, DC 20590–0001 between 9 a.m. and 5 p.m. ET Monday through Friday, except Federal holidays.

- *Fax:* (202) 493–2251.

To avoid duplication, please use only one of these four methods. See the “Public Participation” portion of the **SUPPLEMENTARY INFORMATION** section for instructions on submitting comments. **FOR FURTHER INFORMATION CONTACT:** Ms. Christine A. Hydock, Chief, Medical Programs Division, FMCSA, DOT, 1200 New Jersey Avenue SE, Washington, DC 20590–0001, (202) 366–4001, [fmcsamedical@dot.gov](mailto:fmcsamedical@dot.gov). Office hours are from 8:30 a.m. to 5 p.m. ET Monday through Friday, except Federal holidays. If you have questions regarding viewing or submitting material to the docket, contact Dockets Operations, (202) 366–9826.

#### SUPPLEMENTARY INFORMATION:

##### I. Public Participation

###### A. Submitting Comments

If you submit a comment, please include the docket number for this notice (Docket No. FMCSA–2013–0444, Docket No. FMCSA–2015–0323, Docket No. FMCSA–2018–0052, Docket No. FMCSA–2018–0054, Docket No. FMCSA–2020–0050, or Docket No. FMCSA–2022–0045), indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation. You may submit your

comments and material online or by fax, mail, or hand delivery, but please use only one of these means. FMCSA recommends that you include your name and a mailing address, an email address, or a phone number in the body of your document so that FMCSA can contact you if there are questions regarding your submission.

To submit your comment online, go to [www.regulations.gov/](http://www.regulations.gov/), insert the docket number (FMCSA–2013–0444, FMCSA–2015–0323, FMCSA–2018–0052, FMCSA–2018–0054, FMCSA–2020–0050, or FMCSA–2022–0045) in the keyword box and click “Search.” Next, sort the results by “Posted (Newer-Older),” choose the first notice listed, click the “Comment” button, and type your comment into the text box on the following screen. Choose whether you are submitting your comment as an individual or on behalf of a third party and then submit.

If you submit your comments by mail or hand delivery, submit them in an unbound format, no larger than 8½ by 11 inches, suitable for copying and electronic filing. FMCSA will consider all comments and material received during the comment period.

#### B. Viewing Comments

To view comments go to [www.regulations.gov](http://www.regulations.gov). Insert the docket number (FMCSA–2013–0444, FMCSA–2015–0323, FMCSA–2018–0052, FMCSA–2018–0054, FMCSA–2020–0050, or FMCSA–2022–0045) in the keyword box and click “Search.” Next, sort the results by “Posted (Newer-Older),” choose the first notice listed, and click “Browse Comments.” If you do not have access to the internet, you may view the docket online by visiting Dockets Operations on the ground floor of the DOT West Building, 1200 New Jersey Avenue SE, Washington, DC 20590–0001, between 9 a.m. and 5 p.m. ET Monday through Friday, except Federal holidays. To be sure someone is there to help you, please call (202) 366–9317 or (202) 366–9826 before visiting Dockets Operations.

#### C. Privacy Act

In accordance with 49 U.S.C. 31315(b)(6), DOT solicits comments from the public on the exemption request. DOT posts these comments, without edit, including any personal information the commenter provides, to [www.regulations.gov](http://www.regulations.gov). As described in the system of records notice DOT/ALL 14 (Federal Docket Management System), which can be reviewed at <https://www.transportation.gov/individuals/privacy/privacy-act-system->

[records-notices](https://www.transportation.gov/individuals/privacy/privacy-act-system-records-notices), the comments are searchable by the name of the submitter.

#### II. Background

Under 49 U.S.C. 31136(e) and 31315(b), FMCSA may grant an exemption from the FMCSRs for no longer than a 5-year period if it finds such exemption would likely achieve a level of safety that is equivalent to, or greater than, the level that would be achieved absent such exemption. The statutes also allow the Agency to renew exemptions at the end of the 5-year period. However, FMCSA grants medical exemptions from the FMCSRs for a 2-year period to align with the maximum duration of a driver’s medical certification.

The physical qualification standard for drivers regarding epilepsy found in 49 CFR 391.41(b)(8) states that a person is physically qualified to drive a CMV if that person has no established medical history or clinical diagnosis of epilepsy or any other condition which is likely to cause the loss of consciousness or any loss of ability to control a CMV.

In addition to the regulations, FMCSA has published advisory criteria<sup>1</sup> to assist Medical Examiners in determining whether drivers with certain medical conditions are qualified to operate a CMV in interstate commerce.

The eight individuals listed in this notice have requested renewal of their exemptions from the epilepsy and seizure disorders prohibition in § 391.41(b)(8), in accordance with FMCSA procedures. Accordingly, FMCSA has evaluated these applications for renewal on their merits and decided to extend each exemption for a renewable 2-year period.

#### III. Request for Comments

Interested parties or organizations possessing information that would otherwise show that any, or all, of these drivers are not currently achieving the statutory level of safety should immediately notify FMCSA. The Agency will evaluate any adverse evidence submitted and, if safety is being compromised or if continuation of the exemption would not be consistent with the goals and objectives of 49 U.S.C. 31136(e) and 31315(b), FMCSA will take immediate steps to revoke the exemption of a driver.

<sup>1</sup> These criteria may be found in APPENDIX A TO PART 391—MEDICAL ADVISORY CRITERIA, section H. *Epilepsy*: § 391.41(b)(8), paragraphs 3, 4, and 5, which is available on the internet at <https://www.gpo.gov/fdsys/pkg/CFR-2015-title49-vol5/pdf/CFR-2015-title49-vol5-part391-appA.pdf>.

#### IV. Basis for Renewing Exemptions

In accordance with 49 U.S.C. 31136(e) and 31315(b), each of the eight applicants has satisfied the renewal conditions for obtaining an exemption from the epilepsy and seizure disorders prohibition. The eight drivers in this notice remain in good standing with the Agency, have maintained their medical monitoring and have not exhibited any medical issues that would compromise their ability to safely operate a CMV during the previous 2-year exemption period. In addition, the Agency has reviewed each applicant’s certified driving record from their State Driver’s Licensing Agency (SDLA). The information obtained from each applicant’s driving record provides the Agency with details regarding any moving violations or reported crash data, which demonstrates whether the driver has a safe driving history and is an indicator of future driving performance. If the driving record revealed a crash, FMCSA requested and reviewed the related police reports and other relevant documents, such as the citation and conviction information. These factors provide an adequate basis for predicting each driver’s ability to continue to safely operate a CMV in interstate commerce. Therefore, FMCSA concludes that extending the exemption for each renewal applicant for a period of 2 years is likely to achieve a level of safety equal to that existing without the exemption.

In accordance with 49 U.S.C. 31136(e) and 31315(b), the following groups of drivers received renewed exemptions in the month of December and are discussed below. As of December 12, 2024, and in accordance with 49 U.S.C. 31136(e) and 31315(b), the following seven individuals have satisfied the renewal conditions for obtaining an exemption from the epilepsy and seizure disorders prohibition in the FMCSRs for interstate CMV drivers:

- Jesse Hansen (MN)
- Domenick Panfile (NJ)
- Carsten Thode (WA)
- Thomas Kline (PA)
- Andrew Rieschick (NE)
- Jose Lara-Ramirez (NV)
- Stephen St. Marthe (NC)

The drivers were included in docket number FMCSA–2013–0444, FMCSA–2018–0052, FMCSA–2018–0054, FMCSA–2020–0050, or FMCSA–2022–0045. Their exemptions are applicable as of December 12, 2024, and will expire on December 12, 2026.

As of December 16, 2024, and in accordance with 49 U.S.C. 31136(e) and 31315(b), Kyle Loney (WA) has satisfied the renewal conditions for obtaining an

exemption from the epilepsy and seizure disorders prohibition in the FMCSRs for interstate CMV drivers.

This driver was included in docket number FMCSA–2015–0323. The exemption is applicable as of December 16, 2024, and will expire on December 16, 2026.

## V. Terms and Conditions

The exemptions are extended subject to the following conditions: each driver must (1) remain seizure-free, maintain a stable treatment, and report to FMCSA within 24 hours if they experience a seizure during the 2-year exemption period; (2) submit to FMCSA annual reports from their treating physicians attesting to the stability of treatment and that the driver has remained seizure-free; (3) undergo an annual medical examination by a certified medical examiner, as defined by § 390.5T; (4) provide a copy of the annual medical certification to the employer for retention in the driver's qualification file, or keep a copy of their driver's qualification file if they are self-employed; (5) report to FMCSA the date, time, and location of any crashes, as defined in § 390.5T, within 7 days of the crash; (6) report to FMCSA any citations and convictions for disqualifying offenses under 49 CFR parts 383 and 391 to FMCSA within 7 days of the citation and conviction; and (7) submit to FMCSA annual certified driving records from their SDLA. The driver must also have a copy of the exemption when driving, for presentation to a duly authorized Federal, State, or local enforcement official. In addition, the driver must meet all the applicable commercial driver's license testing requirements. Each exemption will be valid for 2 years unless rescinded earlier by FMCSA. The exemption will be rescinded if: (1) the person fails to comply with the terms and conditions of the exemption; (2) the exemption has resulted in a lower level of safety than was maintained before it was granted; or (3) continuation of the exemption would not be consistent with the goals and objectives of 49 U.S.C. 31136(e) and 31315(b).

## VI. Preemption

During the period the exemption is in effect, no State shall enforce any law or regulation that conflicts with this exemption with respect to a person operating under the exemption.

## VII. Conclusion

Based on its evaluation of the eight exemption applications, FMCSA renews the exemptions of the aforementioned drivers from the epilepsy and seizure

disorders prohibition in § 391.41(b)(8). In accordance with 49 U.S.C. 31136(e) and 31315(b), each exemption will be valid for 2 years unless revoked earlier by FMCSA.

Larry W. Minor,

Associate Administrator for Policy.

[FR Doc. 2024–28347 Filed 12–2–24; 8:45 am]

BILLING CODE 4910–EX–P

## DEPARTMENT OF TRANSPORTATION

### Federal Railroad Administration

[Docket Number FRA–2010–0029]

#### The National Railroad Passenger Corporation's Request To Amend Its Positive Train Control Safety Plan and Positive Train Control System

**AGENCY:** Federal Railroad Administration (FRA), Department of Transportation (DOT).

**ACTION:** Notice of availability and request for comments.

**SUMMARY:** This document provides the public with notice that, on November 21, 2024, the National Railroad Passenger Corporation (Amtrak) submitted a request for amendment (RFA) to its FRA-approved Positive Train Control Safety Plan (PTCSP) to provide supplemental information to its initial RFA, submitted October 16, 2024, which requested FRA's approval for an increase to the system maximum operational speed from 150 miles per hour (MPH) to 160 MPH. As this RFA may involve a request for FRA's approval of proposed material modifications to an FRA-certified positive train control (PTC) system, FRA is publishing this notice and inviting public comment on Amtrak's RFA to its PTCSP.

**DATES:** FRA will consider comments received by December 23, 2024. FRA may consider comments received after that date to the extent practicable and without delaying implementation of valuable or necessary modifications to a PTC system.

**ADDRESSES:**

*Comments:* Comments may be submitted by going to <https://www.regulations.gov> and following the online instructions for submitting comments.

*Instructions:* All submissions must include the agency name and the applicable docket number. The relevant PTC docket number for this host railroad is Docket No. FRA–2010–0029. For convenience, all active PTC dockets are hyperlinked on FRA's website at [\[development/program-areas/train-control/ptc/railroads-ptc-dockets\]\(https://www.regulations.gov\). All comments received will be posted without change to <https://www.regulations.gov>; this includes any personal information.](https://railroads.dot.gov/research-</a></p>
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**FOR FURTHER INFORMATION CONTACT:**

Gabe Neal, Staff Director, Signal, Train Control, and Crossings Division, telephone: 816–516–7168, email: [Gabe.Neal@dot.gov](mailto:Gabe.Neal@dot.gov).

**SUPPLEMENTARY INFORMATION:** In general, title 49 United States Code (U.S.C.) section 20157(h) requires FRA to certify that a host railroad's PTC system complies with title 49 Code of Federal Regulations (CFR) part 236, subpart I, before the technology may be operated in revenue service. Before making certain changes to an FRA-certified PTC system or the associated FRA-approved PTCSP, a host railroad must submit, and obtain FRA's approval of, an RFA to its PTCSP under 49 CFR 236.1021.

Under 49 CFR 236.1021(e), FRA's regulations provide that FRA will publish a notice in the **Federal Register** and invite public comment in accordance with 49 CFR part 211, if an RFA includes a request for approval of a material modification of a signal or train control system. Accordingly, this notice informs the public that, on November 21, 2024, Amtrak submitted an RFA to its PTCSP for its Advanced Civil Speed Enforcement System II (ACSES II), which seeks FRA's approval for an increase to the system maximum operational speed from 150 MPH to 160 MPH. That RFA is available in Docket No. FRA–2010–0029.

Interested parties are invited to comment on Amtrak's RFA to its PTCSP by submitting written comments or data. During FRA's review of Amtrak's RFA, FRA will consider any comments or data submitted within the timeline specified in this notice and to the extent practicable, without delaying implementation of valuable or necessary modifications to a PTC system. *See* 49 CFR 236.1021; *see also* 49 CFR 236.1011(e). Under 49 CFR 236.1021, FRA maintains the authority to approve, approve with conditions, or deny a railroad's RFA to its PTCSP at FRA's sole discretion.

## Privacy Act Notice

In accordance with 49 CFR 211.3, FRA solicits comments from the public to better inform its decisions. DOT posts these comments, without edit, including any personal information the commenter provides, to <https://www.regulations.gov>, as described in the system of records notice (DOT/ALL–14 FDMS), which can be reviewed at

<https://www.transportation.gov/privacy>. See <https://www.regulations.gov/privacy-notice> for the privacy notice of [regulations.gov](https://www.regulations.gov). To facilitate comment tracking, we encourage commenters to provide their name, or the name of their organization; however, submission of names is completely optional. If you wish to provide comments containing proprietary or confidential information, please contact FRA for alternate submission instructions.

Issued in Washington, DC.

**Carolyn R. Hayward-Williams,**

*Director, Office of Railroad Systems and Technology.*

[FR Doc. 2024-28284 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-06-P**

**DEPARTMENT OF TRANSPORTATION**

**Federal Transit Administration**

**Fiscal Year 2024 Competitive Funding Opportunity: Technology Transfer (T2) Program**

**AGENCY:** Federal Transit Administration (FTA), Department of Transportation (DOT).

**ACTION:** Notice of funding opportunity (NOFO).

**SUMMARY:** The Federal Transit Administration (FTA) announces the opportunity to apply for a total of \$5,000,000 from Fiscal Years (FY) 2022, 2023, and 2024 in Public Transportation Innovation Program funds for a competitive cooperative agreement to develop and manage a new FTA Technology Transfer (T2) Program.

**DATES:** Complete applications must be submitted electronically through the [grants.gov](https://www.grants.gov) "APPLY" function by 11:59 p.m. eastern time on February 11, 2025.

Prospective applicants should initiate the process by registering on the [grants.gov](https://www.grants.gov) website promptly to ensure completion of the application process before the submission deadline. Instructions for applying can be found on FTA's website at <https://www.transit.dot.gov/howtoapply> and in the "FIND" module of [grants.gov](https://www.grants.gov). The funding opportunity ID is FTA-2025-002-TRI. Mail, fax, and email submissions will not be accepted.

**FOR FURTHER INFORMATION CONTACT:** Shapell Randolph, FTA Office of Research, Demonstration, and Innovation, phone: 202-366-1086, or email [shapell.randolph@dot.gov](mailto:shapell.randolph@dot.gov). In addition, up to the application deadline, the U.S. Department of Transportation (Department) will post answers to common questions and requests for clarifications on the Department's website at <https://www.transit.dot.gov/grant-programs/technology-transfer-t2-program>.

**SUMMARY OVERVIEW OF KEY INFORMATION—FTA TECHNOLOGY TRANSFER (T2) PROGRAM COMPETITIVE FUNDING OPPORTUNITY**

Issuing Agency .....	Federal Transit Administration, U.S. Department of Transportation.
Program Overview .....	To establish a Technology Transfer (T2) Program under 49 U.S.C. 5312(e)(2) to promote the early deployment and demonstration of innovation in public transportation that has broad applicability to public transportation.
Eligible Applicants .....	Departments, agencies, and instrumentalities of the Government, including Federal laboratories; State and local governmental entities; providers of public transportation; private or non-profit organizations; institutions of higher education; and technical and community colleges.
Eligible Project .....	Activities may include: All activities that promote the early deployment and demonstration of innovative research, advance promising technologies, practices and strategies including, but not limited to planning, acquiring essential services, and program implementation. Activities that seek to commercialize technologies developed through FTA funding.
Funding Amount .....	\$5,000,000. Additional funds made available prior to project selection may be allocated to eligible projects.
Deadline .....	February 11, 2025 at 11:59 p.m. eastern time.
Cost share .....	The maximum Federal share of project costs under this program is 100 percent.

**SUPPLEMENTARY INFORMATION:**

**Table of Contents**

- A. Program Description
- B. Federal Award Information
- C. Eligibility Information
- D. Application and Submission Information
- E. Application Review Information
- F. Federal Award Administration Information
- G. Federal Awarding Agency Contacts
- H. Other Information

**A. Program Description**

*Background*

The Federal Transit Administration (FTA) Public Transportation Innovation Program (49 U.S.C. 5312) funds research, development, demonstration, and deployment projects, and evaluation of research and technology of national significance to public transportation that will improve public transportation. On average, on a yearly

basis, FTA manages a research investment portfolio of over \$200 million in active projects. When these projects identify and finalize useful, promising solutions and practices, it is essential that FTA has a way to quickly facilitate the deployment of these findings to transit agencies for their use.

This notice (Federal Assistance Listing: 20.531) announces a new Technology Transfer (T2) Program under 49 U.S.C. 5312(e)(2) to promote the early deployment and demonstration of innovation in public transportation that has broad applicability to public transportation. The T2 program will seek to build on successful research, innovation, and development efforts to facilitate the deployment of research and technology development resulting from federally funded efforts and the implementation of research and technology development

to advance the interests of public transportation. A quarterly planning process between the FTA Research Office and the recipient of this award will facilitate the selection of which programs and projects to deploy. T2 will also support ensuring that FTA's Innovative Research activities meet Executive Order 14104, Federal Research and Development in Support of Domestic Manufacturing and United States Jobs (88 FR 51203). This Executive Order calls for the enhancement of U.S. manufacturing while encouraging technology transfer and commercialization and allowing small businesses and nonprofit organizations to retain ownership of and commercialize their federally funded products or inventions. As appropriate, T2 will also provide an opportunity for recipients of FTA innovative research funding to not only broadly share their

research or inventions but to potentially commercialize them.

For this notice of funding opportunity (NOFO), FTA is defining “technology transfer” as the exchange of information to enable the deployment, adoption, and potentially the commercialization of FTA-funded research findings.

Currently, FTA tracks and assesses the impact of technology adoption in two ways. First, FTA tracks technology research projects along the lifecycle of the projects and notes whether the recipient conducting the research chooses to adopt the new technology or process. Secondly, FTA analyzes data from the internal database of all FTA-funded programs using natural language search techniques to assess the level of deployment of FTA researched solutions. By further investing in the process of technology adoption through T2, FTA can reach a wider audience in the transit industry and more effectively track the use of FTA research findings.

In many instances, transit agencies and other stakeholders may not have the proper resources to access information that could potentially be beneficial to their organization. They may also be reluctant to participate in the exchange of information or hesitant to adopt new technology. The T2 program will address these deployment barriers and explore solutions to facilitate change management in the use of promising FTA innovative research adoption.

#### *Program Goals*

FTA is soliciting applications to develop and implement a new T2 program to facilitate the deployment of promising innovative research solutions resulting from FTA’s research investments. A strategic aim for this work includes strengthening U.S. manufacturing by encouraging technology transfer and, as appropriate, supporting small businesses and nonprofit organizations’ retention of intellectual property and helping commercialize their federally funded innovations.

The goals of the T2 program are to:

(1) Develop processes, systems, and resources to support the deployment and adoption of FTA’s innovative research results in the public transportation industry.

(2) Support the commercialization and production of technologies developed in the U.S., in part through FTA-funded research and development.

(3) Overcome barriers and challenges affecting the adoption of research products in transit agencies.

#### *Management and Coordination*

The awardee will be responsible for overall program management, coordination, and adherence to established project timelines in accordance with available funding. This includes all aspects of resource management, compliance, and reporting, including oversight of sub-recipients, if any. Eligible activities include data collection, deployment specialists for planning, outreach, and knowledge transfer.

#### *Development of Lessons Learned*

Research conducted under this notice will advance the strategic goals of the U.S. Department of Transportation (USDOT) as outlined in its active Strategic Plan FY 2022–2026 and the Department’s Innovation Principles, which can be found at <https://www.transportation.gov/priorities/transformation/us-dot-innovation-principles>.

#### **B. Federal Award Information**

This notice announces the availability of \$5,000,000 to award one competitively selected application to develop and manage FTA’s T2 program with an expected period of performance spanning at least 48 months. Funding is available under FTA’s Public Transportation Innovation Program (49 U.S.C. 5312). FTA may, at its discretion, provide additional funding made under this notice, subject to the availability of funds.

An applicant whose application is selected for funding will receive a cooperative agreement with FTA. FTA will have substantial involvement in the administration of the cooperative agreement. FTA’s role includes the right to participate in decisions to redirect and reprioritize project activities, goals, and deliverables. FTA expects to provide the recipient with substantive input and direction at each stage of the project. Applicants are encouraged to assemble and secure partnerships necessary to conduct the Program in accordance with the requirements outlined in this notice.

Projects under this notice will be for research efforts and, as such, FTA Circular 6100.1E, “Research, Technical Assistance, and Training Program Guidance” (available at <https://www.fta.dot.gov/regulations-and-guidance/fta-circulars/research-technical-assistance-and-training-program>), will apply in administering the program.

#### **C. Eligibility Information**

##### *1. Eligible Applicants*

Eligible applicants under this notice are departments, agencies, and instrumentalities of the Federal government, including Federal laboratories; State, local, and Tribal governmental entities; providers of public transportation; private or non-profit organizations; institutions of higher education; and technical and community colleges.

Eligibility is limited to United States entities. Applicants must demonstrate experience supporting the deployment of research findings, developing useful resources to facilitate technology transfer/deployment, digital repository development/management, and national-level program management expertise.

##### *2. Cost Sharing or Matching*

Per 49 U.S.C. 5312(g), the maximum Federal share is 100 percent of net project cost. Applicants are encouraged to consider some level of match. The non-Federal share of the net project cost may be provided in cash or in kind, and the applicant must document in its application the source of the non-Federal match. Eligible sources of non-Federal match are detailed in FTA Circular 6100.1E.

##### *3. Conflicts of Interest*

It is FTA’s intent that the T2 program benefits public transportation agencies. Therefore, the principal staff and any sub-recipients staff engaged in this project cannot have a financial interest in the commercialization of a product.

#### **D. Application and Submission Information**

##### *1. Address To Request Application*

Applications must be made using the Standard Form 424 (SF–424), which can be downloaded from <https://www.transit.dot.gov/grant-programs/technology-transfer-t2-program>.

##### *2. Content and Form of Application Submission*

###### *a. Application Submission*

A T2 application must include the following: SF–424, Budget Information for Non-Construction Programs (SF–424A), Assurances for Non-Construction Programs (SF–424B), Project Narrative, and Summary Budget Narrative.

Additionally, applicants must submit a Negotiated Indirect Cost Rate Agreement (NICRA) and a Data Management Plan (DMP) if applicable.

i. A complete application must consist of the SF–424, which provides

basic information about the applicant and the project, including details such as the applicant's name, unique entity identifier (UEI), key contact information, and a summary of the project. The SF-424A form is used to present a detailed budget for the project, ensuring that all financial aspects are accounted for and justified. The SF-424B form outlines the assurance that the applicant agrees to comply with the terms and conditions set forth by the Federal government.

ii. In addition to these forms, the application must include a supplemental form, a project narrative, and a summary budget narrative. The supplemental form and project overview should be prepared in Microsoft Word, PDF, or another compatible file format and must address all required elements outlined in the Notice of Funding Opportunity (NOFO). These documents should be attached to the "Attachments" section of the SF-424 form.

iii. For the budget, applicants must provide a summary and a high-level overview of estimated activity costs, organized major cost elements. The budget should clearly differentiate between the Federal funding share and non-Federal share funds, including the value of in-kind contributions. The budget form must not include previously incurred expenses or costs incurred before the award time. All budget information must be presented using SF-424A form. General submission instructions and specific form requirements can be found on [grants.gov](https://www.grants.gov).

The applicant must respond to all sections of the SF-424 and the requirements of this notice. The information in the narrative application will be used to determine applicant and project eligibility for the program and to evaluate the application against the selection criteria described in this notice. Applicants should carefully review the criteria noted in Section E and ensure their proposal addresses the factors listed.

Failure to submit the information as requested can delay review or disqualify the application.

#### b. Application Preparation and Content

i. Consolidated Budget Form: The Consolidated Budget Form must align with the dollar amount specified in the SF-424 and meet the eligible use requirements outlined in the notice of funding opportunity (NOFO). It includes a budget narrative and a detailed budget spreadsheet, with costs consistent with project scope and allowable under relevant regulations. If

indirect costs are included, documentation such as a negotiated indirect cost rate agreement is required.

ii. Allowable costs are determined in accordance with the cost principles identified in 2 CFR part 200, including subpart E, and in 48 CFR part 31 for commercial organizations. The detailed budget spreadsheet must reflect the cost categories that appear on the SF-424A and include itemized calculations for each cost placed under those categories. If indirect costs are included in the proposed budget, the applicant must provide a copy of the approved negotiated indirect cost rate agreement if this rate was negotiated with a cognizant Federal agency or otherwise document those indirect costs consistent with 2 CFR 200.414.

iii. Required Standard Federal Financial Assistance Forms and Documentation: Applicants must submit the SF-424, SF-424A, and SF-424B forms, along with any Negotiated Indirect Cost Rate Agreement and Data Management Plan.

iv. The SF-424 and supplemental form prompt applicants for essential information such as applicant details, project description, and budget breakdown. This includes a detailed project budget specifying Federal and local shares, funding sources, and matching funds. Additionally, it covers descriptions of project benefits, implementation strategy, scalability, and a detailed project timeline.

v. The project overview, submitted as a one-page document, should include a header with project title and lead applicant, along with brief description of innovation, benefits, team and partners, and approach. The format aligns with templates available on [grants.gov](https://www.grants.gov).

vi. Budget Narrative: The budget narrative provides detailed explanations of proposed costs, aligning with the detailed budget spreadsheet and only including allowable expenses within the project scope. It should describe each cost item and its basis, including the Federal share, non-Federal share, and any in-kind contributions. Any indirect costs must be accompanied by relevant documentation. The narrative also explains leveraged resources and ensures consistency with SF-424 and SF-424A forms.

Applicants must submit one electronic file for applications in a Microsoft Word, PDF, or compatible file format, double-spaced using Times New Roman, 12-point font. The application must contain the following components and adhere to the specified maximum lengths:

1. *Cover Sheet* (not to exceed 1 page): The Cover Sheet must include the entity submitting the application, the principal's name, title, and contact information (e.g., address, office and mobile phone, and email). The cover sheet must also include name and contact information for the entity's point of contact for all cooperative agreement administrative activities (if different from principal).

2. *Abstract* (not to exceed 1 page): The Abstract must include background, purpose, methodology, intended outputs, outcomes, impacts, and plan for accomplishing the goals and objectives as outlined in this notice.

3. *Table of Contents* (not to exceed 1 page): The Table of Contents shall list each section of the application (including Appendices) by title and page number.

4. *Project Budget* (not to exceed five pages): The Project Budget should show how different funding sources will share in each activity and present those data in dollars and percentages. The budget should identify other Federal funds the applicant is applying for or has been awarded, if any, that the applicant intends to use. The proposed project budget must account for multiple years and outline the total cost of all services and products, including salaries and fringe benefits, supplies, travel, equipment, and proposed contractual arrangements (e.g., subcontracts, consultant services) and how these estimated costs are connected to the project scope.

5. *Project Work Plan* (not to exceed ten pages total): The proposed Project Work Plan must include the following information:

a. *Methodology*—Provide a methodology for addressing the goals described above and under Section A of this notice.

b. *Statement of Work*—Provide proposed work tasks for the project and how the goals will be accomplished with a detailed set of objectives and activities. Include the tasks for proposed activities, resources, and milestones, with a timeline that also notes critical path milestones. Note in the application how risk management related to barriers to deployment will be addressed. Please also note a sustainability strategy for how this work will be maintained in the future.

i. *Staffing Plan*—Describe the approach for managing the project team, including the distribution of responsibilities among project partners and what activities each project team member will perform.

ii. *Coordination with FTA*—Identify the plan for coordinating the project



team's activities and deliverables with the FTA's Research office including suggesting a methodology for a regular review of research results and a process to select research ready for deployment.

iii. Research and Data Collection—Identify activities and the plan for electronic collection, maintenance, storage, and dissemination of data for use by the project team, stakeholders, FTA, and other customers.

iv. Communication Plan—Provide a plan for communication of project results. The plan should identify innovative communication strategies including, but not limited to, the following: webinars, in-person presentations at industry events, social media (e.g., Facebook, Twitter, YouTube), text alerts, email, website publication, and toll-free telephone numbers.

v. Performance Measures—Identify multiple performance measures that FTA should use to assess the Program's overall effectiveness.

vi. Deliverables—Provide a list of proposed deliverables (e.g., guides, plans, reports, services, etc.). Include quarterly reports, financial forms, guidance documents, and final reports to be submitted to FTA.

6. *Staff Qualifications* (not to exceed 5 pages total):

a. Organizational Capacity—Provide a narrative that briefly describes the structure of the applicant, including its history and experience in technology transfer and the national deployment of research findings, preferably in the transportation sector. Include a narrative of the applicant's understanding of the activities in this solicitation and its responsibility for the data collection and results deployment called for in this notice. Include the applicant's organization chart.

b. Project Team Structure—Provide a narrative that briefly describes the structure and makeup of the project team. Provide resumes or biographies of key staff to highlight the relevant skills and experience of the proposed team. Eligible applicants are encouraged to identify in their application one or more project partners with a substantial interest and involvement in the project activities or objectives.

Applications submitted in response to this notice become FTA records and as such, may be subject to Freedom of Information Act requests. Please segregate and clearly mark any portions of the application containing confidential or privileged trade secrets or commercial or financial information.

### 3. *Unique Entity Identifier and System for Award Management (SAM.GOV)*

Each applicant is required to: (1) be registered in *SAM.GOV* before applying; (2) provide a valid unique entity identifier in its application; and (3) maintain an active *SAM.GOV* registration with current information at all times during which the applicant has an active Federal award or an application or plan under consideration by FTA. FTA may not make an award until the applicant has complied with all applicable unique entity identifier and *SAM.GOV* requirements. If an applicant has yet to fully comply with the requirements by the time FTA is ready to make an award, FTA may determine that the applicant is not qualified to receive an award and use that determination as a basis for making a Federal award to another applicant. These requirements do not apply if the applicant has an exception approved by FTA or the U.S. Office of Management and Budget under 2 CFR 25.110(c) or (d).

*SAM.GOV* registration takes approximately 3–5 business days, but FTA recommends allowing ample time, up to several weeks, to complete all steps. For additional information on obtaining a unique entity identifier, please visit <https://www.sam.gov>.

### 4. *Submission Dates and Times*

Project applications must be submitted electronically through *grants.gov* by 11:59 p.m. eastern time on February 11, 2025. Proposals submitted after the deadline will only be considered under extraordinary circumstances, not under the applicant's control. Mail, fax, and email submissions will not be accepted.

FTA urges applicants to submit applications at least 72 hours prior to the due date to allow time to correct any problems that may have caused either *grants.gov* or FTA systems to reject the submission. *Grants.gov* attaches a time stamp to each application at the time of submission. Applications submitted after the deadline will be considered only if lateness was due to extraordinary circumstances not under the applicant's control. *Grants.gov* scheduled maintenance and outage times are announced in advance on the *grants.gov* website. Deadlines will not be extended due to scheduled website maintenance.

Within 48 hours after submitting an electronic application, the applicant should receive an email message from *grants.gov* with confirmation of successful transmission to *grants.gov*. If a notice of failed validation or incomplete materials is received, the

applicant must address the reason for the failed validation, as described in the email notice, and resubmit before the submission deadline. If making a resubmission for any reason, include all original attachments regardless of which attachments were updated, and check the box on the supplemental form indicating this is a resubmission.

Applicants are encouraged to begin the registration process on the *grants.gov* site well in advance of the submission deadline. Registration is a multi-step process, which may take several weeks to complete before an application can be submitted. Registered applicants may still be required to take steps to keep their registration up to date before submissions can be made successfully: (1) registration in *sam.gov* is renewed annually, and (2) persons making submissions on behalf of the Authorized Organization Representative (AOR) must be authorized in *grants.gov* by the AOR to make submissions.

### 5. *Funding Restrictions*

Refer to Section C.3., Eligible Projects, for information on allowable activities. Allowable direct and indirect expenses must be consistent with the Government-Wide Uniform Administrative Requirements and Cost Principles (2 CFR part 200) and FTA Circular 5010.1F.

Funds available under this notice cannot be used to reimburse applicants for otherwise eligible expenses incurred prior to FTA issuing pre-award authority for selected projects.

## E. Application Review Information

### 1. *Evaluation Criteria*

Projects will be evaluated solely on the materials provided in the application document. FTA will evaluate applications based on the following criteria:

#### a. Organizational Capacity and Key Personnel Experience

Applicants should note the structure of the lead organization, including its history and experience in performing complex research and deployment activities. Applicants should include a narrative of the applicant's understanding of the activities called for in this funding opportunity. Applicants should describe the structure and makeup of the project team to clearly demonstrate the applicant's technical abilities to meet the requirements called for in this funding opportunity. Applicants should note key project team personnel who will be involved in the project and how the applicant will ensure they have enough time to devote

to the project. Additionally, applicants should discuss successful completion of similar or relevant real-world projects—case studies, journal articles, references, etc.

**b. Applicant and Applicant Team Technical Expertise**

Applicants should clearly detail the technical capacity of the lead organization and what activities each team member will perform. In addition to their qualifications in conducting nationally significant research and deployment, applicants should demonstrate project team knowledge in public transportation, technology transfer and stakeholder coordination and engagement, including engaging stakeholders in a targeted manner with proven and impactful methods.

**c. Familiarity With the Public Transportation Industry**

Applicants should be familiar with the work conducted by FTA's Public Transportation Innovation Program (49 U.S.C. 5312). This would include familiarity with public transportation associations, University Transportation Centers, metropolitan planning organizations, different types of transit agencies (*i.e.*, rural, small, and large urban, bus, rail, Tribal, community-based organizations that provide shared rides, and other entities that focus on public transportation.

**d. Applicants Must Be Able To Demonstrate Previous Work and a Thorough Understanding of Technology Transfer and Research Results Deployment**

FTA is looking for innovative ways to facilitate the deployment of promising research findings including the use of online resources and repositories. Any repositories suggested must not duplicate the USDOT's Research Hub (a web-based, searchable database of USDOT-sponsored research, development, and technology project records) and the Transportation Research Board (TRB) Transport Research International Documentation TRID database (an integrated database that combines the records from TRB's Transportation Research Information Services (TRIS) Database and the Organization for Economic Co-operation and Development (OECD's) Joint Transport Research Centre's International Transport Research Documentation (ITRD) Database).

**e. Project Approach and Work Plan**

Applicants will be evaluated on the proposed methodology and overall project approach pursuant to the

inclusion of a multi-year work plan (*i.e.*, \$5,000,000 over a minimum of 48 months) that demonstrates the applicant's understanding of all activities, responsibilities, and costs required to develop, implement, and measure a robust T2 program. In assessing whether the proposed implementation plans are reasonable and complete, FTA will review the proposed project work plan, including all necessary project milestones and the overall project timeline, as well as ensure the project team's viability in subsequent years.

**f. Technical, Legal, and Financial Capacity**

Applicants must demonstrate the financial and organizational capacity and managerial experience to oversee and implement this project successfully. FTA may review relevant assessments and public records to determine whether any outstanding legal, technical, or financial issues with the applicant would affect the outcome of the proposed project.

For applications that include named project partners, FTA will also consider the proposed partners' technical, legal, and financial capacity.

**2. Review and Selection Process**

An FTA technical evaluation committee will evaluate applications based on the published evaluation criteria. Members of the technical evaluation committee may request additional information from applicants if necessary. After considering the review of the technical evaluation committee, the FTA Administrator will determine the final selection for program funding.

**3. Integrity and Performance Review**

Prior to making an award, FTA is required to review and consider any information about the applicant that is in the Federal Awardee Performance and Integrity Information Systems (FAPIIS), the designated integrity and performance system accessible through [sam.gov](http://sam.gov). An applicant may review and comment on any information about itself that a Federal awarding agency previously entered. FTA will consider any comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under Federal awards when completing the review of risk posed by applicants as described in the Office of Management and Budget's Uniform Requirements for Federal Awards (2 CFR 200.206).

**F. Federal Award Administration Information**

**1. Federal Award Notices**

FTA will notify the successful applicant and may announce the selection on its website, <https://www.transit.dot.gov>. Following notification, the successful applicant will be required to submit their application through the FTA Transit Award Management System (TrAMS).

**2. Administrative and National Policy Requirements**

**a. Pre-Award Authority**

At the time the project selection is announced, FTA may extend pre-award authority for the successful applicant. There is no blanket pre-award authority for the project before announcement. FTA will issue specific guidance to the selected recipient regarding pre-award authority at the time of selection. FTA does not provide pre-award authority for these competitive funds until projects are selected, and even then, Federal requirements must be met before costs are incurred. For more information about FTA's policy on pre-award authority, please see the most recent Apportionments, Allocations, and Program Information Notice at 89 FR 47211.

**b. Cooperative Agreement Requirements**

The successful applicant will apply for a cooperative agreement through TrAMS and adhere to the customary FTA grant requirements of 49 U.S.C. 5312, Public Transportation Innovation, including those of FTA C 6100.1E, where applicable. FTA will award and manage a cooperative agreement through TrAMS. Discretionary grants and cooperative agreements greater than \$500,000 will go through the Congressional notification and release process. Assistance regarding these requirements is available from FTA.

**c. Data Management Plan**

FTA seeks to improve public transportation for America's communities by sharing digital data or source code collected or developed through its research with the public. This allows research organizations, public transportation agencies, State DOTs, and other stakeholders to learn from and expand upon the insights developed from FTA-funded research.

An award made pursuant to this notice will be subject to the latest version of FTA's Master Agreement (available at <https://www.transit.dot.gov/funding/granteeresources/sample-fta-agreements/fta-grant-agreements>),

including Section 17 Patent Rights and Section 18 Rights in Data and Copyrights. All work conducted under this award must follow the Department data policies outlined in the USDOT Public Access Plan at: <https://ntl.bts.gov/public-access/how-comply>. Recipients are required to include these obligations in any sub-awards or other related funding agreements.

Public Data Access requirements include developing a Data Management Plan (DMP) and submitting the DMP for FTA review. A DMP is a document that describes how recipients plan to handle digital datasets, software, or code generated over the course of a research project pursuant to Federal and Departmental requirements. A DMP must be provided as a condition of receiving FTA funds under the Section 5312 Research Program and should adequately identify: (1) The data to be collected, (2) how the data will further the goals of this effort, (3) how the data will be made accessible, and (4) how the data will be stored. DMPs can be updated over time if the scope of the project or the type of data that will be collected changes. FTA staff is available to assist recipients with complying with public data access requirements.

FTA expects recipients to remove confidential business information (CBI) and Personally Identifiable Information (PII) before providing public access to project data. Recipients must ensure the appropriate data are accessible to FTA or the public for a minimum of five years after the award's performance period expires.

Recipients must make available to the Department copies of all work developed in performance of a project funded under this notice, including but not limited to software and data. Data rights shall be in accordance with 2 CFR 200.315, Intangible Property.

#### d. Disadvantaged Business Enterprises/ Civil Rights and Title VI

All FTA recipients must comply with the Department of Transportation Disadvantaged Business Enterprise (DBE) program regulation (49 CFR part 26). A recipient has different obligations depending on the amount and type of FTA funds it awards in a year. A recipient that awards up to \$670,000 in FTA funds in prime contracts in a fiscal year must adhere to certain recordkeeping and reporting requirements and take steps to foster the participation of small businesses but need not develop a DBE participation goal. A recipient that awards more than \$670,000 of FTA funds in prime contracts in a fiscal year must have a full DBE program, including setting a

DBE goal. Applicants should expect to include any funds awarded, excluding those used for vehicle procurements, in setting their overall DBE goal.

As a condition of a grant award, grant recipients should demonstrate that the recipient has a plan for compliance with civil rights obligations and nondiscrimination laws, including Title VI of the Civil Rights Act of 1964 (49 CFR part 21), the Americans with Disabilities Act of 1990 (ADA) (49 CFR parts 37, 38, and 39), section 504 of the Rehabilitation Act, other civil rights requirements, and all implementing regulations. This should include a current Title VI plan, completed Community Participation Plan (alternatively called a Public Participation Plan and often part of the overall Title VI program plan), if applicable. DOT's and the applicable Operating Administrations' Office of Civil Rights may work with awarded grant recipients to ensure full compliance with Federal civil rights requirements.

#### e. Standard Assurances

If an applicant receives an award, the applicant must assure that it will comply with all applicable Federal statutes, regulations, executive orders, directives, FTA circulars, and other Federal administrative requirements in carrying out any project supported by the FTA award. The applicant acknowledges that it will be under a continuing obligation to comply with the terms and conditions of the agreement issued for its project with FTA. The applicant understands that Federal laws, regulations, policies, and administrative practices might be modified from time to time and may affect the implementation of the project. The most recent Federal requirements will apply to the project unless FTA issues a written determination otherwise. The applicant must submit the most recent FTA Certifications and Assurances before receiving an award if it does not have current certifications on file.

#### f. External Communications

The successful applicant must communicate with the FTA project manager prior to engaging in any external communications regarding the Program. This includes any work developing news or magazine stories with media organizations, including print, video, online, or otherwise. Additionally, the FTA project manager must be notified if project information, including results and metrics, will be shared during a webinar or other presentation open to the public,

produced either by the recipient itself or another organization. The successful applicant must consult with the FTA project manager at the beginning of their agreement to discuss and plan any external communications about their project.

#### g. Software Provisions

Any standards, guidance, tools, or software developed as a part of this solicitation will be subject to provisions of FTA's Master Agreement and evaluated for the potential to be shared for FTA purposes.

*Critical Infrastructure Security, Cybersecurity and Resilience:* It is the policy of the United States to strengthen the security and resilience of its critical infrastructure against all hazards, including physical and cyber risks, consistent with Presidential Policy Directive 21—Critical Infrastructure Security and Resilience, and the National Security Memorandum on Improving Cybersecurity for Critical Infrastructure Control Systems. The applicant selected for funding under this program must demonstrate, prior to the signing of the grant agreement, effort to consider and address physical and cyber security risks relevant to the transportation mode and type and scale of the project. Projects that have not appropriately considered and addressed physical and cyber security and resilience in their planning, design, and project oversight, as determined by the Department and the Department of Homeland Security, will be required to do so before receiving funds.

#### 3. Reporting and Payment

Post-award reporting requirements include the electronic submission of Federal Financial Reports and Milestone Progress Reports in TrAMS quarterly. Documentation is required for payment. Additional reporting may be required specific to the program prescribed in this notice, and the recipient may be expected to participate in events or peer networks related to the goals and objectives of the program. The Federal Financial Accountability and Transparency Act (FFATA) requires data entry at the FFATA Sub Award Reporting System (<https://www.FSRS.gov>) for all sub-awards and sub-contracts issued for \$30,000 or more, as well as addressing executive compensation for both award recipients and sub-award organizations. The selected recipient will be required to disburse via Delphi and E-invoicing.

The successful applicant should include any goals, targets, and indicators referenced in its application

in the Executive Summary of the TrAMS application.

As part of completing the annual certifications and assurances required of FTA grant recipients, a successful applicant must report on the suspension or debarment status of itself and its principals.

If the award recipient's active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceed \$10,000,000 for any period during the period of performance of an award made pursuant to this notice, the recipient must comply with the Recipient Integrity and Performance Matters reporting requirements described in appendix XII to 2 CFR part 200.

#### 4. Termination for Failure To Make Progress on an Award

After providing written notice to the recipient of a project selected for funding, FTA may withdraw its support for the selected project (if a cooperative agreement has not yet been awarded) or suspend or terminate all or any part of the Federal assistance for the award if the recipient has failed to make reasonable progress implementing the project. FTA may withdraw its support for a project or terminate an award agreement if, among other reasons:

1. A recipient has not completed its application for funding in TrAMS within 60 days of the date FTA announces project selection.

2. A recipient has not begun its demonstration project within one year after funding was awarded in TrAMS.

3. A recipient has not delivered a project evaluation to FTA within one year of completing its demonstration project.

4. FTA may also withdraw support from a project or terminate an award agreement if the proposed activities are no longer needed or if the recipient has violated the terms of FTA's Annual Agreement.

#### G. Federal Awarding Agency Contacts

For further information concerning this notice, please contact the T2 Program Manager, FTA Office of Research, Demonstration, and Innovation, by email at [shapell.randolph@dot.gov](mailto:shapell.randolph@dot.gov). A TDD is available for individuals who are deaf or hard of hearing at 800-877-8339. In addition, FTA will post answers to questions and requests for clarifications on FTA's website at: <https://www.transit.dot.gov/research-innovation>.

To ensure applicants receive accurate eligibility information, applicants are encouraged to contact FTA directly,

rather than through intermediaries or third parties, with questions. FTA staff may also conduct briefings on the FY 2024 competitive grants selection and award process upon request.

For issues with [grants.gov](https://www.grants.gov), please contact [grants.gov](https://www.grants.gov) by phone at 1-800-518-4726 or by email at [support@grants.gov](mailto:support@grants.gov).

#### H. Other Information

This program is not subject to Executive Order 12372, "Intergovernmental Review of Federal Programs." There are resources available that may help in responding to this notice, as listed below. The FTA website has information about FTA, application forms, statutory and administrative requirements, etc. Applicants are encouraged to use the FTA link provided and other information, as listed, as much as is needed.

**Veronica Vanterpool,**

*Deputy Administrator.*

[FR Doc. 2024-28271 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-57-P**

## DEPARTMENT OF TRANSPORTATION

### Office of the Secretary

[DOT-OST-2024-0133]

#### Request for Information on US DOT's Transportation Community Explorer (TC Explorer) Tool and Index Methodology

**AGENCY:** Office of the Secretary (OST), Department of Transportation (DOT).

**ACTION:** Request for information.

**SUMMARY:** The Department of Transportation is issuing this request for information (RFI) to solicit feedback on DOT's updated Transportation Community Explorer (TC Explorer) Tool and Index methodology developed to assist communities in their project selection process and grant development.

**DATES:** Responses to this RFI should be received by December 16, 2024.

**ADDRESSES:** Comments should refer to the docket number above and submitted by one of the following methods:

- *Federal Rulemaking Portal:* <https://www.regulations.gov>. Follow the online instructions for submitting comments.

- *Mail:* Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE, West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

- *Hand Delivery:* 1200 New Jersey Avenue SE, West Building Ground

Floor, Room W12-140, Washington, DC, between 9 a.m. and 5 p.m. ET, Monday through Friday, except Federal Holidays.

*Instructions:* For detailed instructions on submitting comments, see the Public Participation heading of the **SUPPLEMENTARY INFORMATION** section of this document. Note that all comments received will be posted without change to <https://www.regulations.gov>, including any personal information provided.

*Privacy Act:* Except as provided below, all comments received into the docket will be made public in their entirety. The comments will be searchable by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You should not include information in your comment that you do not want to be made public. For information on DOT's compliance with the Privacy Act, please visit <https://www.transportation.gov/privacy>.

*Docket:* For access to the docket to read background documents or comments received, go to <https://www.regulations.gov> or the street address listed above. Follow the online instructions for accessing the dockets.

**FOR FURTHER INFORMATION CONTACT:** For further information, please contact Kristin Wood, 774-293-2726.

#### SUPPLEMENTARY INFORMATION:

##### I. Background

The TC Explorer is data driven tool that allows communities to better identify transportation investments that can benefit communities, including rural and Tribal communities, across a variety of factors. When done right, transportation policy can transform economies, connect people to opportunities, and empower underserved communities to build generational wealth for the future.

In January 2022, DOT developed its first tool to measure how communities were experiencing transportation related disadvantage; then, in April 2023, the Department launched an updated version of the tool titled the DOT Equitable Transportation Community Explorer (ETC Explorer v1.1), which included an updated format and methodology. The Department is currently seeking to make updates that improve the usefulness and accuracy of the tool, particularly for rural and tribal communities, and rename the tool as the Transportation Community (TC) Explorer.

Over the last year and a half, DOT received feedback on the TC Explorer

through various RFIs, public meetings and other venues. All comments and recommendations were considered in the proposed update of the tool (TC Explorer). The proposed updates fall into six categories:

1. Updated Methodologies:
  - a. DOT consolidated the current tool's five components of disadvantage into three:
    - i. Transportation Insecurity—When people are unable to get to where they need to go to meet the needs of their daily life regularly, reliably, affordably, and safely. Sub-components comprising Transportation Insecurity are cost burden, vehicle access vulnerability, destination access vulnerability and traffic fatality burden.
    - ii. Place-Based Burden—The disadvantage inherent in a location and experienced by all residents of the location. Sub-components comprising Place-Based Burden are extreme weather hazard, proximity to infrastructure, air pollution, and surface pollution.
    - iii. Population-Based Vulnerability—The disadvantage experienced by a population due to demographic and socioeconomic traits that make them particularly vulnerable. Sub-components comprising Population-Based Vulnerability are communication, employment, income, housing, and health vulnerabilities.
  - b. DOT modified the normalization method used to process raw indicator data for inclusion in disadvantage scores to better account for the effects of outliers in the data.
  - c. DOT has made significant updates to the transportation insecurity methodology. These updates are reflected in both the TC Explorer National and States results, as well as in the Transportation Insecurity Analysis Tool (TIAT).
  - d. DOT has updated its Climate methodology using the Climate and Transportation Vulnerabilities Methodology from the Fifth National Climate Assessment.
2. Updated Data:
  - a. The tool has been updated with the most recent data available. (\* note: When the updated tool is formally released this winter, it will contain the 2019–2023 American Community Survey 5-year estimate data, if available.)
  - b. Roads data has been divided into two categories, for freeways and expressways and for high-traffic roads as reported by the Federal Highway Administration (FHWA) Highway Performance Management System.
  - c. Data sets that contain data for all 50 states have been used.

- d. Some data sets have been replaced to better represent/measure how a community is experiencing transportation disadvantage. Some examples of those are—
    - i. Income Inequality.
    - ii. Housing Condition.
    - iii. Access Burden.
    - iv. Climate.
  3. Updated Display: DOT seeks to improve the interface display to increase the user interface with the new version of the TC Explorer. Updates to the display include:
    - a. State and County Selectors are provided.
    - b. Statistics related to residents and tracts appears at the top right of the tool.
    - c. Tabs appear at the bottom right of the tool include: Overall Disadvantage, Transportation Insecurity, Place-Based Burden, Population-Based Insecurity and Raw Data.
    - d. Instead of bar charts, scores for each component and sub-component are provided on a dial. The scores still represent a project area's disadvantage rating in relation to all other census tracts.
    - e. The Raw Data tab replaces the current version's pop-up databoxes. It displays the salient raw indicator data for the selected project area.
  4. Updated Display Layers: DOT seeks to improve the organization of layers to improve usability by consolidating multiple layers of a similar theme into one layer. For example, in the current tool users click on seven layers to see the intercity bus network. In the proposed updates, users will only need to click on one layer titled “intercity bus”.
    5. Removing the “Add Your Data” Tab: DOT found through the comments and interface with users that this feature was not used and further caused confusion for non-GIS users. The data is available for download and can be integrated on a user's platform to integrate with localized data if needed.
    6. Updated Transportation Insecurity Analysis Tool (TIAT): Comprehensive updates have been made to the tool's functionality and display. As mentioned earlier, DOT's transportation insecurity methodology has been updated, which is reflected in the TIAT.
- The TC Explorer and TIAT mapping tools, index methodologies, and datasets are available at <https://experience.arcgis.com/experience/836cf87c91344bb991a1b149873f27af>.

## II. Key Questions for Input

Through this request for information, DOT seeks input, information, and individual recommendations on DOT's proposed updates to the TC Explorer

from a broad array of stakeholders in the public sector, including state, Tribal, and local governments, and territorial areas, and in the private sector, including advocacy, businesses, not-for-profit, academic, and philanthropic organizations, as well as from any other interested parties. DOT will use responses to this RFI to consider both the current proposed and additional updates to the TC Explorer. After DOT has updated the tool with any appropriate modifications, the tool will supersede the current version of the TC Explorer tool. Respondents to this RFI do not need to address every question, but DOT welcomes input in the following areas:

1. Methodology: Please refer to DOT's website for more information regarding the tool's updated methodology available at <https://experience.arcgis.com/experience/836cf87c91344bb991a1b149873f27af/page/Data-and-Methodology-Download/>. Please provide comments and specific recommendations for improving the methodology.

2. Datasets: Data in this version of the tool provides measures in the areas of Transportation Insecurity, Place-Based Burden, and Population-Based Vulnerability available at <https://experience.arcgis.com/experience/836cf87c91344bb991a1b149873f27af>.

- A. What recommendations for additional datasets would enhance and improve upon the set of indicators currently used? In any comments submitted, please include—

- i. Why and how the data recommendations would improve upon the current set of data and/or indicators used in the tool.

- ii. Full information regarding data sources (including URL, and source government agency and/or organization);

- iii. Intended measure—what does the dataset and/or indicator measure (for example, pollution exposure or emissions, health conditions, transportation access, etc.)?

- B. Scope—does the recommended data and/or indicator include data from all 50 states and territories? If not, please provide comments as to how to address the issue.

- C. A summary of the quality (*i.e.*, completeness, accuracy, consistency, and reliability) of the data for use in the tool; and

- D. Geographic resolution of the data (*i.e.*, census block, census block group, census tract, zip code, county, etc.).

- E. Is this data set publicly available?

3. Map Usability and Accessibility. The US DOT Transportation Community Explorer map available at

<https://experience.arcgis.com/experience/836cf87c91344bb991a1b149873f27af> provides an online geospatial platform that gives the user the capability to identify the communities identified as disadvantaged. DOT is soliciting information regarding usability and accessibility of the updated geospatial platform as follows:

i. What modifications can improve the usability, accessibility, or design of the mapping functions that display the data and results?

ii. Are there specific features or functions that will enhance the usability of the interactive map by community members and organizations, government staff, and other stakeholders?

iii. Are there additional resources DOT should consider developing to help users understand the data included in the tool and how to use it in project selection decisions and grant applications?

#### 4. Additional Feedback:

i. Does the tool's name reflect its purpose?

ii. DOT seeks any additional feedback on the updated TC Explorer tool.

*Please note: This version of the Transportation Community Explorer map has been developed for illustrative purposes to demonstrate the proposed index methodology. It is subject to change following the public comment period.*

### III. Public Participation

*How do I prepare and submit comments?*

To ensure that your comments are filed correctly, please include the docket number provided in (xx) in your comments. Please submit one copy (two copies if submitting by mail or hand delivery) of your comments, including any attachments, to the docket following the instructions given above under **ADDRESSES**. Please note, if you are submitting comments electronically as a PDF (Adobe) file, we ask that the documents submitted be scanned using an Optical Character Recognition (OCR) process, thus allowing the Agency to search and copy certain portions of your submissions.

*How do I submit confidential business information?*

Any submissions containing Confidential Information must be delivered to DOT in the following manner:

- Submitted in a sealed envelope marked "confidential treatment requested;"
- Document(s) or information that the submitter would like withheld from the

public docket should be marked "PROPIN" for "proprietary information;"

- Accompanied by an index listing the document(s) or information that the submitter would like the Departments to withhold. The index should include information such as numbers used to identify the relevant document(s) or information, document title and description, and relevant page numbers and/or section numbers within a document; and

- Submitted with a statement explaining the submitter's grounds for objecting to disclosing the information to the public.

DOT will treat such marked submissions as confidential consistent with the Freedom of Information Act (FOIA) and not include them in the public docket. DOT also requests that submitters of Confidential Information include a non-confidential version (either redacted or summarized) of those confidential submissions in the public docket. If the submitter cannot provide a non-confidential version of its submission, DOT requests that the submitter post a notice in the docket stating that it has provided DOT with Confidential Information. Should a submitter fail to docket either a nonconfidential version of its submission or to post a notice that Confidential Information has been provided, we will note the receipt of the submission on the docket, with the submitter's organization or name (to the degree permitted by law) and the date of submission.

*Will the Agency consider late comments?*

DOT will consider all comments received before the close of business on the comment closing date indicated above under **DATES**. To the extent practicable, DOT will also consider comments received after that date.

*How can I read the comments submitted by other people?*

You may read the comments received by contacting the Dockets office at the address provided in the **ADDRESSES** section. The hours of the Docket office are indicated in the **ADDRESSES** section. You may also see the comments on the internet, identified by the docket number at the heading of this notice, at <http://www.regulations.gov>.

Please note, this RFI is a planning document and will serve as such. The RFI should not be construed as policy, a solicitation for applications, or an obligation on the part of the government.

Signed in Washington, DC, on November 26, 2024.

**Christopher Coes,**

*Assistant Secretary for Transportation Policy, Department of Transportation.*

[FR Doc. 2024-28280 Filed 12-2-24; 8:45 am]

**BILLING CODE 4910-9X-P**

## DEPARTMENT OF THE TREASURY

### Bureau of the Fiscal Service

#### Application and Renewal Fees Imposed on Surety Companies and Reinsuring Companies; Increase in Fees Imposed

**AGENCY:** Bureau of the Fiscal Service, Treasury.

**ACTION:** Notice of fees imposed on surety companies and reinsuring companies.

**SUMMARY:** The Department of the Treasury, Bureau of the Fiscal Service, is adding renewal fees for Complementary and Alien Reinsurers as well as Admitted Reinsurer—Reinsurance Market companies and increasing the existing fees it imposes on and collects from surety companies and reinsuring companies, effective January 1, 2025.

**FOR FURTHER INFORMATION CONTACT:** Melvin Saunders, at (304) 480-5108 or [melvin.saunders@fiscal.treasury.gov](mailto:melvin.saunders@fiscal.treasury.gov); or Bobbi McDonald, at (304) 480-7098 or [bobbi.mcdonald@fiscal.treasury.gov](mailto:bobbi.mcdonald@fiscal.treasury.gov).

**SUPPLEMENTARY INFORMATION:** The Independent Offices Appropriations Act of 1952 (IOAA), codified at 31 U.S.C. 9701, authorizes Federal agencies to establish fees for a service or thing of value provided by the agency to members of the public. Office of Management and Budget Circular A-25 allows agencies to impose user fees for services that confer a special benefit to identifiable recipients beyond those accruing to the general public. Pursuant to 31 CFR 223.22, Treasury imposes fees on surety companies and reinsuring companies seeking to obtain or renew certification or recognition from Treasury. The fees imposed and collected cover the costs incurred by the Government for services performed reviewing, analyzing, and evaluating the companies' applications, financial statements, and other information. Treasury determines the amount of fees in accordance with the IOAA and the Office of Management and Budget Circular A-25, as amended. The change in fees is the result of a thorough analysis of costs associated with the corporate Federal surety bond program.

The new fee rate schedule is as follows:

(1) Examination of a company's application for a Certificate of Authority as an acceptable surety or as an acceptable reinsuring company on Federal bonds: \$1313,600.

(2) Determination of a company's continued qualification for annual renewal of its Certificate of Authority: \$8,800.

(3) Examination of a company's application for recognition as an Admitted Reinsurer: \$55,000.

(4) Determination of a company's continued qualification for annual renewal of its authority as an Admitted Reinsurer: \$3,500.

(5) Determination of a company's continued qualification for annual renewal of its authority as an Admitted Reinsurer—Reinsurance Market: \$17,500.

(6) Examination of a company's application for recognition as an Alien Reinsurer: \$55,000.

(7) Determination of a company's continued qualification for annual renewal of its authority as an Alien Reinsurer: \$3,500.

(8) Examination of a company's application for recognition as a Complementary Reinsurer: \$55,000.

(9) Determination of a company's continued qualification for annual renewal of its authority as a Complementary Reinsurer: \$3,500.

Questions concerning this notice should be directed to the Surety Bond Branch, Special Assets and Liabilities Division, Bureau of the Fiscal Service, Surety Bonds (A-1G), 257 Bosley Industrial Drive, Parkersburg, WV 26106, Telephone (304) 480-6635.

**Timothy E. Gribben,**

*Commissioner, Bureau of the Fiscal Service.*  
[FR Doc. 2024-28231 Filed 12-2-24; 8:45 am]

**BILLING CODE 4810-AS-P**

## DEPARTMENT OF THE TREASURY

### Office of Foreign Assets Control

#### Notice of OFAC Sanctions Action

**AGENCY:** Office of Foreign Assets Control, Treasury.

**ACTION:** Notice.

**SUMMARY:** The U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC) is publishing the names of one or more persons that have been placed on OFAC's Specially Designated Nationals and Blocked Persons List (SDN List) based on OFAC's determination that one or more applicable legal criteria were satisfied. All property and interests in property subject to U.S. jurisdiction of these

persons are blocked, and U.S. persons are generally prohibited from engaging in transactions with them.

**DATES:** This action was issued on November 27, 2024. See **SUPPLEMENTARY INFORMATION** for relevant dates.

**FOR FURTHER INFORMATION CONTACT:** OFAC: Associate Director for Global Targeting, 202-622-2420; Assistant Director for Sanctions Compliance, 202-622-2490 or <https://ofac.treasury.gov/contact-ofac>.

#### **SUPPLEMENTARY INFORMATION:**

##### **Electronic Availability**

The SDN List and additional information concerning OFAC sanctions programs are available on OFAC's website: <https://ofac.treasury.gov>.

##### **Notice of OFAC Action**

On November 27, 2024, OFAC determined that the property and interests in property subject to U.S. jurisdiction of the following persons are blocked under the relevant sanctions authorities listed below.

##### **Individuals**

1. RODRIGUEZ DIAZ, Dilio Guillermo, Venezuela; DOB 25 Jun 1968; POB Venezuela; nationality Venezuela; Gender Male; Cedula No. V9600712 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of Executive Order 13692 of March 8, 2015, "Blocking Property and Suspending Entry of Certain Persons Contributing to the Situation in Venezuela," 80 FR 12747, 3 CFR, 2015 Comp., p. 276 (March 11, 2015) (E.O. 13692), as amended by Executive Order 13857 of January 25, 2019, "Taking Additional Steps To Address the National Emergency With Respect to Venezuela," 84 FR 509, 3 CFR, 2019 Comp., p. 251 (January 30, 2019) (E.O. 13857), for being a current or former official of the Government of Venezuela.

2. HERRERA DUARTE, Jose Yuniur, Venezuela; DOB 11 Nov 1972; POB Acarigua, Venezuela; nationality Venezuela; Gender Male; Cedula No. V11078860 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

3. AIGSTER VILLAMIZAR, Carlos Eduardo, Venezuela; DOB 07 Jan 1972; POB Caracas, Venezuela; nationality Venezuela; Gender Male; Cedula No. V11983476 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

4. VILLAMIZAR GOMEZ, Jesus Rafael, Caracas, Venezuela; DOB 21 Dec 1971; POB Caracas, Venezuela; nationality Venezuela; Gender Male; Cedula No. V10794553 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for

being a current or former official of the Government of Venezuela.

5. ROMERO BOLIVAR, Orlando Ramon, Venezuela; DOB 18 Sep 1969; POB Venezuela; nationality Venezuela; Gender Male; Cedula No. V8777449 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

6. BALESTRINI JARAMILLO, Angel Daniel, Venezuela; DOB 13 Sep 1974; POB Caracas, Venezuela; nationality Venezuela; Gender Male; Cedula No. V12085833 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

7. LIZANO COLMENTER, Pablo Ernesto, Venezuela; DOB 15 Sep 1973; POB Maracaibo, Venezuela; nationality Venezuela; Gender Male; Cedula No. V12059932 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

8. REYES RIVERO, Luis Gerardo, Venezuela; DOB 16 Feb 1973; POB Venezuela; nationality Venezuela; Gender Male; Cedula No. V11879256 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

9. RIVERA BASTARDO, Jose Alfredo, Venezuela; DOB 16 Feb 1970; POB Caracas, Venezuela; nationality Venezuela; Gender Male; Cedula No. V11025190 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

10. MATHEUS MELENDEZ, Alberto Alexander, Venezuela; DOB 20 Nov 1970; POB Venezuela; nationality Venezuela; Gender Male; Cedula No. V10597658 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

11. FERNANDEZ ALAYON, Jesus Ramon, Venezuela; DOB 03 Feb 1971; POB Caracas, Venezuela; nationality Venezuela; Gender Male; Cedula No. V10504917 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

12. CORONADO MILLAN, Anibal Eduardo, Venezuela; DOB 15 Oct 1974; POB Cumana, Venezuela; nationality Venezuela; Gender Male; Cedula No. V11832584 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

13. CASTILLO BOLLE, William Alfredo (a.k.a. CASTILLO BOLLE, William Alfredo),



Caracas, Venezuela; DOB 18 Dec 1961; POB Caracas, Venezuela; nationality Venezuela; Gender Male; Cedula No. V5973031 (Venezuela); Diplomatic Passport 045793721 (Venezuela) expires 13 Jul 2027 (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

14. MENENDEZ PRIETO, Ricardo Jose, Caracas, Venezuela; DOB 07 Dec 1969; POB Caracas, Venezuela; nationality Venezuela; Gender Male; Cedula No. V10333821 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

15. NAZARET NANEZ CONTRERAS, Freddy Alfred (a.k.a. NAZARETH NANEZ CONTRERAS, Freddy Alfred; a.k.a. "Chucho"), Venezuela; DOB 15 Apr 1976; POB Petare, Miranda, Venezuela; nationality Venezuela; Gender Male; Cedula No. V13113260 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

16. CABELLO CONTRERAS, Daniella Desiree, Venezuela; DOB 11 Apr 1996; POB Caracas, Venezuela; nationality Venezuela; Gender Female; Cedula No. V23434318 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

17. SANTIAGO SERVIGNA, Ruben, Venezuela; DOB 23 Dec 1972; POB Venezuela; nationality Venezuela; Gender Male; Cedula No. V12221568 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

18. GARCIA ZERPA, Julio Jose, Venezuela; DOB 18 Dec 1986; POB Distrito Capital, Venezuela; citizen Venezuela; Gender Male; Cedula No. V17646721 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

19. PEREZ DAVILA, America Valentina, Venezuela; DOB 27 Nov 1993; POB Venezuela; citizen Venezuela; Gender Female; Cedula No. V20901866 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

20. RODRIGUEZ CABELLO, Alexis Jose, Venezuela; DOB 01 Oct 1965; POB Venezuela; nationality Venezuela; Gender Male; Cedula No. V8959785 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

21. MARCANO TABATA, Javier Jose, Venezuela; DOB 10 Mar 1969; POB San Antonio, Venezuela; nationality Venezuela; Gender Male; Cedula No. V10306352 (Venezuela) (individual) [VENEZUELA].

Designated pursuant to section 1(a)(ii)(C) of E.O. 13692, as amended by E.O. 13857, for being a current or former official of the Government of Venezuela.

**Lisa M. Palluconi,**

*Acting Director, Office of Foreign Assets Control.*

[FR Doc. 2024-28304 Filed 12-2-24; 8:45 am]

**BILLING CODE 4810-AL-P**

## UNIFIED CARRIER REGISTRATION PLAN

### Sunshine Act Meetings

**TIME AND DATE:** December 5, 2024, 11:00 a.m. to 3:00 p.m., Eastern Time.

**PLACE:** The meeting will take place at the Drayton Hotel, 7 Drayton Street, Savannah, GA 31401. The meeting will also be accessible via conference call and via Zoom Meeting and Screenshot. Any interested person may call (i) 1-929-205-6099 (U.S. Toll) or 1-669-900-6833 (U.S. Toll), Meeting ID: 963 5921 6055, to listen and participate in this meeting. The website to participate via Zoom Meeting and Screenshot is <https://kellen.zoom.us/meeting/register/tJluczCqrz0qH9EDakrRpzCkyzS8FYCUhR6x>.

**STATUS:** This meeting will be open to the public.

**MATTERS TO BE CONSIDERED:** The Unified Carrier Registration Plan Board of Directors (the "Board") will continue its work in developing and implementing the Unified Carrier Registration Plan and Agreement. The subject matter of this meeting will include:

### Proposed Agenda

#### I. Welcome and Call to Order—UCR Board Chair

The UCR Board Chair will welcome attendees, call the meeting to order, call roll for the Board, confirm the presence of a quorum, and facilitate self-introductions.

#### II. Verification of Publication of Meeting Notice—UCR Executive Director

The UCR Executive Director will verify publication of the meeting notice on the UCR website and distribution to the UCR contact list via email, followed by subsequent publication of the notice in the **Federal Register**.

### III. Review and Approval of Board Agenda—UCR Board Chair

*For Discussion and Possible Board Action*

The proposed Agenda will be reviewed. The Board will consider action to adopt.

Ground Rules

➤ Board actions taken only in designated areas on the agenda.

### IV. Approval of Minutes of the October 24, 2024, UCR Board Meeting—UCR Board Chair

*For Discussion and Possible Board Action*

Draft Minutes from the October 24, 2024, UCR Board meeting will be reviewed. The Board will consider action to approve.

### V. Report of FMCSA—FMCSA Representative

The Federal Motor Carrier Safety Administration (FMCSA) will provide a report on any relevant agency activity.

### VI. Subcommittee Reports

*Audit Subcommittee—UCR Audit Subcommittee Chair*

A. Update on State Performance Standards—UCR Audit Subcommittee Chair, UCR Audit Subcommittee Vice-Chair, DSL Transportation Representative, SeikoSoft Representative

The UCR Audit Subcommittee Chair, the UCR Audit Subcommittee Vice-Chair, a DSL Transportation representative, and a SeikoSoft representative will lead a discussion on the status of the State Performance Standards as of November 1, 2024. The discussion will also include current and potential future options to assist states with their performance initiatives.

B. Update on the Recent Question and Answer Session for State Auditors—UCR Audit Subcommittee Chair, UCR Audit Subcommittee Vice-Chair, and Executive Director

The UCR Audit Subcommittee Chair, the UCR Audit Subcommittee Vice-Chair, and the Executive Director will lead a discussion on the topics, value, and continuation of a series of 60-minute virtual question and answer sessions for state auditors.

*Dispute Resolution Subcommittee—  
UCR Dispute Resolution Subcommittee  
Chair No Report*

*Education and Training  
Subcommittee—UCR Education and  
Training Subcommittee Chair*

The UCR Education and Training Subcommittee Chair will discuss the development of key projects. The projects that will be discussed include the development of the educational audit certificate program, the optimization and redesign of the website, and the creation of a video explaining the purpose and value of the UCR Plan and the National Registration System it operates.

*Enforcement Subcommittee—UCR  
Enforcement Subcommittee Chair*

The UCR Enforcement Subcommittee Chair will provide an update on current and planned initiatives, including efforts to enhance UCR enforcement efficiency, recognition of states and inspectors, and forthcoming awareness initiatives.

*Finance Subcommittee—UCR Finance  
Subcommittee Chair and UCR  
Depository Manager*

**A. UCR Administrative Fund Update—  
UCR Finance Subcommittee Chair and  
UCR Depository Manager**

The UCR Finance Subcommittee Chair and UCR Depository Manager will provide an update on the financial status of the administrative fund for the 10 months ended October 31, 2024.

**B. Discussion and Possible Approval of  
2025 UCR Plan Administrative Budget—  
UCR Finance Subcommittee Chair and  
UCR Depository Manager**

**For Discussion and Possible Board  
Action**

The UCR Finance Subcommittee Chair and UCR Depository Manager will discuss the 2025 proposed administrative fund budget as approved by the Finance Subcommittee on 10/3/2024. The Board may take action to approve the 2025 administrative fund budget. Additionally, the creation of a legal reserve fund for 2025 and beyond will be discussed. The Board may take action to approve creating a legal reserve fund.

*Industry Advisory Subcommittee—UCR  
Industry Advisory Subcommittee Chair*

The UCR Industry Advisory Subcommittee Chair will provide an update on current and planned initiatives, to include the development of a video intended to increase participation in the UCR focused on brokers, motor carriers, and bus operators.

**VII. Contractor Reports—UCR Board  
Chair**

*UCR Executive Director Report*

The UCR Executive Director will provide a report covering his recent activity for the UCR Plan including any changes in the dates of UCR meetings in 2025.

*UCR Administrator Report (Kellen)*

The UCR Chief of Staff will provide a management update covering recent activity for the Depository, Operations, and Communications.

*DSL Transportation Services, Inc.*

DSL Transportation Services, Inc. will report on the latest data from the FARs program, Tier 5 and 6 unregistered motor carriers, and other matters.

*Seikosoft*

Seikosoft will provide an update on its recent/new activity related to the UCR's National Registration System.

**VIII. Other Business—UCR Board Chair**

The UCR Board Chair will call for any other business, old or new, from the floor.

**IV. Adjournment—UCR Board Chair**

The UCR Board Chair will adjourn the meeting.

The agenda will be available no later than 5:00 p.m. Eastern time, November 26, 2024, at: <https://plan.ucr.gov>.

**CONTACT PERSON FOR MORE INFORMATION:**

Elizabeth Leaman, Chair, Unified Carrier Registration Plan Board of Directors, (617) 305-3783, [eleaman@board.ucr.gov](mailto:eleaman@board.ucr.gov).

**Alex B. Leath,**

*Chief Legal Officer, Unified Carrier  
Registration Plan.*

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Part II

## Department of Transportation

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National Highway Traffic Safety Administration  
New Car Assessment Program Final Decision Notice—Advanced Driver  
Assistance Systems and Roadmap; Notice

**DEPARTMENT OF TRANSPORTATION****National Highway Traffic Safety Administration**

[Docket No. NHTSA–2024–0077]

**New Car Assessment Program Final Decision Notice—Advanced Driver Assistance Systems and Roadmap**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA or the Agency), Department of Transportation (DOT).

**ACTION:** Final decision notice.

**SUMMARY:** This final decision notice adds four new advanced driver assistance systems (ADAS) technologies—blind spot warning (BSW), blind spot intervention (BSI), lane keeping assist (LKA), and pedestrian automatic emergency braking (PAEB)—to the New Car Assessment Program (NCAP) and enhances the performance evaluation of ADAS technologies currently in NCAP. The notice also finalizes a 10-year roadmap for updating NCAP through multiple phases for the period 2024 through 2033. This notice responds in part to the provisions in section 24213 of the Infrastructure, Investment, and Jobs Act.

**DATES:** Decisions on planned changes to the New Car Assessment Program are effective for the 2026 model year.

**FOR FURTHER INFORMATION CONTACT:** For technical issues, you may contact Ms. Taryn E. Rockwell, New Car Assessment Program, Office of Crashworthiness Standards (Telephone: (202) 366–1810). For legal issues, you may contact Ms. Sara R. Bennett, or Ms. Natasha D. Reed, Office of Chief Counsel (Telephone: (202) 366–2992). You may send mail to these officials at the National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, West Building, Washington, DC 20590–0001.

**SUPPLEMENTARY INFORMATION:****Table of Contents**

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**I. Executive Summary**

Since its launch in 1978, NHTSA’s New Car Assessment Program (NCAP)

has supported NHTSA’s mission to reduce the number of fatalities and injuries that occur on U.S. roadways. NCAP, like many other NHTSA programs, has contributed to significant reductions in motor vehicle related crashes, fatalities, and injuries, with passenger vehicle occupant fatalities decreasing from 32,043 to 26,325 from 2001 to 2021.<sup>1</sup> Unfortunately, this reduction was not universal, with pedestrian fatalities increasing by 51 percent during the same timeframe, from 4,901 to 7,388.<sup>2</sup> Despite improvements in automotive safety since NCAP’s implementation, far more work must be done to reduce the continued high toll to human life on our nation’s roads. In response to this need, on March 9, 2022, NHTSA published a Request for Comments (RFC) notice outlining proposed NCAP updates.<sup>3</sup>

After careful consideration of all comments received and applicable regulatory considerations, this notice announces the Agency’s decision to update NCAP with the enhanced evaluation of advanced driver assistance systems (ADAS) technologies currently in NCAP<sup>4</sup> and to add four new ADAS technologies to NCAP: blind spot warning (BSW), blind spot intervention (BSI), lane keeping assist (LKA),<sup>5</sup> and pedestrian automatic emergency braking (PAEB). This notice also establishes a 10-year roadmap for updating NCAP through a multi-phased approach, with RFC notices planned over the next several years. NHTSA will address comments received on program elements outside the scope of the March 2022 RFC notice in subsequent final decision notices as part of the multi-phase efforts to update NCAP over the next several years.

**A. Legal and Policy Considerations**

In finalizing its decisions for this notice, in addition to comments received, the Agency sought to address

<sup>1</sup> Traffic Safety Facts 2021 “A Compilation of Motor Vehicle Crash Data.” U.S. Department of Transportation. National Highway Traffic Safety Administration. NHTSA acknowledges a recent increase in passenger vehicle occupant fatalities occurring during the COVID–19 pandemic. In 2019, 22,372 passenger vehicle occupants were killed in traffic crashes.

<sup>2</sup> Traffic Safety Facts 2021 “A Compilation of Motor Vehicle Crash Data.” U.S. Department of Transportation. National Highway Traffic Safety Administration.

<sup>3</sup> Docket No. NHTSA–2021–0002. 87 FR 13452 (March 9, 2022).

<sup>4</sup> The ADAS technologies currently evaluated in NCAP are forward collision warning (FCW), lane departure warning (LDW), dynamic brake support (DBS), and crash imminent braking (CIB).

<sup>5</sup> “LKS” was used for this technology in the March 2022 RFC. However, in this final decision notice, “LKA” is used instead to maintain consistency with other agency initiatives.

requirements from the 2015 Fixing America’s Surface Transportation (FAST) Act,<sup>6</sup> the 2021 Bipartisan Infrastructure Law (BIL), enacted as the Infrastructure Investment and Jobs Act,<sup>7</sup> and the U.S. Department of Transportation’s National Roadway Safety Strategy. The Agency also took into consideration its May 9, 2024, final rule for FMVSS No. 127, “Automatic Emergency Braking for Light Vehicles.”<sup>8</sup> These considerations are described below.

**1. 2015 Fixing America’s Surface Transportation Act**

This final decision notice serves as NHTSA’s initial step in fulfilling section 24322 of the FAST Act, which directs the Agency to promulgate a rule ensuring the display of crash avoidance information next to crashworthiness information on window stickers that manufacturers place on motor vehicles.<sup>9</sup> The Agency is currently working to develop a crash avoidance rating system based on comments received in response to several rating system concepts discussed in the March 2022 RFC, and this notice finalizes additional crash avoidance technologies that will be included in the future crash avoidance rating system.

**2. 2021 Bipartisan Infrastructure Law**

This notice also fulfills in part several mandates in section 24213 of the BIL, enacted on November 15, 2021 as the Infrastructure Investment and Jobs Act.<sup>10</sup> First, section 24213(a) requires NHTSA to “finalize the proceeding for which comments were requested” on December 16, 2015.<sup>11</sup> This final decision notice does so by adopting four new ADAS technologies discussed in the Agency’s December 16, 2015 RFC notice,<sup>12</sup> thus finalizing that proceeding and notice.<sup>13</sup>

Second, this notice addresses the Advanced Crash-Avoidance Technologies portion of section 24213(b) of the BIL, which directs the Secretary of the Department of

<sup>6</sup> Public Law 114–94.

<sup>7</sup> Public Law 117–58.

<sup>8</sup> Docket No. NHTSA–2023–0021. 89 FR 39686 (May. 9, 2024).

<sup>9</sup> Section 24322 of the FAST Act, otherwise known as the “Safety Through Informed Consumers Act of 2015.”

<sup>10</sup> Public Law 117–58.

<sup>11</sup> *Id.* at Section 24213(a); the notice referred to in the Bipartisan Infrastructure Law is 80 FR 78522 (Dec. 16, 2015).

<sup>12</sup> Docket No. NHTSA–2015–0119. 80 FR 78591 (Dec. 16, 2015).

<sup>13</sup> As communicated in the March 2022 RFC, while NHTSA is adopting a roadmap that includes aspects of the 2015 RFC, this notice is not an extension of the December 2015 notice.

Transportation to “publish a notice, for the purposes of public comment, to establish a means for providing consumer information relating to advanced crash-avoidance technologies” within one year of enactment that includes an appropriate methodology for: (1) determining which advanced crash avoidance technologies should be included in the information, (2) developing performance test criteria for use by manufacturers in evaluating those technologies, (3) determining a distinct rating system involving each crash avoidance technology, and (4) updating overall vehicle ratings to incorporate the advanced crash avoidance technology ratings. This notice satisfies two of these four requirements by (1) adopting established criteria for determining which advanced crash avoidance technology<sup>14</sup> should be included as referenced and discussed in the March 9, 2022 RFC notice, and (2) finalizing test procedures and criteria to evaluate performance for each of these advanced crash avoidance technologies. Although the Agency is not yet implementing a rating system for individual crash avoidance technologies, it has sought comments in this regard and has detailed plans in its roadmap to finalize such ratings, along with an updated overall (*i.e.*, crashworthiness and crash avoidance) rating, in the near future.

Third, this notice addresses the Vulnerable Road User Safety portion of section 24213(b), which directs the Secretary to publish a notice meeting similar requirements to those mandated for advanced crash avoidance technologies “to establish a means for providing to consumers information relating to pedestrian, bicyclist, or other vulnerable road user safety technologies” within one year of enactment. By applying the established inclusion criteria in the adoption of PAEB technology and the applicable test procedures and evaluation criteria included in this notice, two of the four requirements for the Vulnerable Road User Safety portion of section 24213(b) will be met. NHTSA will fulfill the remaining requirements when it proposes and finalizes a new rating system for the crash avoidance technologies in NCAP.

Fourth, this final decision notice fulfills the requirements in section 24213(c) of the BIL. This section states that, within one year of the law’s enactment, the Secretary of the Department of Transportation shall establish a roadmap, vetted through the

public comment process, identifying and prioritizing safety opportunities and technologies that could be used in future roadmaps, establishing a plan for implementation of NCAP changes, and considering the benefits of consistency with other U.S. and international rating systems. Section 24213(c) further specifies that the roadmap shall span a term of ten years, with five-year mid-term and five-year long-term components. Further, it requires updates to the roadmap at least once every four years to reflect new Agency interests and diverse stakeholder input (gathered annually), and in consideration of opportunities to benefit from collaboration and/or harmonization with third-party safety rating programs. As will be discussed herein, the Agency is taking steps to harmonize with existing consumer information rating programs, where possible and when appropriate, both for this NCAP update and future initiatives included in the program’s roadmap. The Agency’s proposed roadmap includes phased updates, as mandated, and was made available for public comment as part of the March 2022 RFC notice. As all relevant comments received have been considered prior to this notice’s finalization, the Agency has fulfilled the requirements of section 24213(c). Additional details for the mid-term and long-term five-year spans are available in the NCAP Roadmap section of this notice.

### 3. 2022 U.S. Department of Transportation National Roadway Safety Strategy (NRSS)

The U.S. Department of Transportation published the National Roadway Safety Strategy (NRSS) in January 2022.<sup>15</sup> The NRSS announced key planned departmental actions aimed at significantly reducing serious roadway injuries and deaths to reach the Department’s long-term zero roadway fatalities goal. At the core of the NRSS is the Department-wide adoption of the Safe Systems Approach,<sup>16</sup> which focuses on building layers of protection to both prevent crashes from happening and minimize harm when crashes do occur.

With respect to NCAP, the NRSS supports program updates emphasizing safety features that protect people both inside and outside the vehicle. These safety features may incorporate

consideration of pedestrian protection systems, better understanding of impacts to pedestrians (*e.g.*, specific considerations for children), and may include automatic emergency braking and lane keeping assistance to benefit bicyclists and pedestrians. The NCAP program also works to identify the most promising vehicle technologies to help achieve NRSS’s safety goals, such as alcohol detection systems and driver distraction mitigation systems. In addition, the NRSS includes a 10-year roadmap for the program and lists as a key departmental action the initiation of rulemaking to update the vehicle Monroney label. As part of that process, the Agency may also consider including information on features that mitigate safety risks for people outside of the vehicle.

This final decision notice presents NHTSA’s initial actions towards the implementation of this broad, multi-faceted safety strategy for NCAP that includes improved road safety for both motor vehicle occupants and people outside of the vehicle, including pedestrians and other vulnerable road users. Additionally, the 10-year roadmap for the program presents a plan for the incorporation of future safety technologies and provides a projected timeline for updating the Monroney label to include crash avoidance information.

Relatedly, NRSS lists the initiation of a new rulemaking to require automatic emergency braking and pedestrian automatic emergency braking on passenger vehicles as a key departmental action. In response to this action, NHTSA published a final rule on May 9, 2024, establishing a new Federal motor vehicle safety standard, FMVSS No. 127, “Automatic Emergency Braking for Light Vehicles.” Similar to the changes adopted by NCAP in this notice, this final rule aims to reduce the frequency and associated injury and fatalities of rear-end and pedestrian crashes. Manufacturers must comply with the final rule by September 1, 2029.<sup>17</sup> This final decision notice will upgrade NCAP to provide consumers with additional vehicle safety information on AEB and PAEB technologies to help them make more informed purchasing decisions. NHTSA will identify vehicles that are equipped with these recommended technologies and pass NHTSA’s performance criteria by way of check marks on the NHTSA website starting with model year 2026

<sup>17</sup> Vehicles produced by small-volume manufacturers, final-stage manufacturers, and alterers must be equipped with a compliant AEB system by September 1, 2030.

<sup>14</sup> This notice refers to advanced crash avoidance technology as ADAS technology.

<sup>15</sup> U.S. Department of Transportation. (2020). “National Roadway Safety Strategy, Version 1.1.” <https://www.transportation.gov/sites/dot.gov/files/2022-02/USDOT-National-Roadway-Safety-Strategy.pdf>.

<sup>16</sup> <https://www.transportation.gov/NRSS/SafeSystem>.

vehicles, as discussed in the following sections. Although the final rule and this decision on NCAP rely on the agency’s separate authorities, NHTSA has sought to ensure that the revised test procedures for NCAP and the AEB final rule are compatible with one another, such that a manufacturer would be able to design a system that both received NCAP credit and would meet the requirements contained in the final rule.<sup>18</sup> NHTSA believes these collective efforts will lead to more rapid and complete market penetration of AEB and PAEB technologies.

**II. Summary of Updates to NCAP and Roadmap for Future Updates**

A brief summary of the updates to NCAP included in this final decision notice is provided below, along with the finalized 10-year roadmap for future updates to NCAP.

*Updates To Crash Imminent Braking (CIB), Dynamic Brake Support (DBS), and Forward Collision Warning (FCW) Evaluations*

This notice modifies the existing test conditions, evaluation procedure, and performance criteria for crash imminent braking (CIB) and dynamic brake support (DBS) systems, subject to the same test scenarios currently used in NCAP.<sup>19</sup> An overview of the amended test scenarios (Lead Vehicle Stopped (LVS), Lead Vehicle Moving (LVM), and Lead Vehicle Decelerating (LVD)) and test conditions (subject vehicle (SV) speed, principal other vehicle (POV) speed, POV headway, and POV

deceleration) required to receive passing credit for AEB systems (*i.e.*, CIB and DBS collectively) in NCAP is shown in Tables 1 and 2. NHTSA will test vehicles starting with the lowest test speed for a test scenario and incrementally increase test speed according to the test matrix in Tables 1 and 2, with only one trial<sup>20</sup> conducted per test condition. The passing criterion for a test trial is no contact between the subject vehicle and principal other vehicle. If the subject vehicle contacts the principal other vehicle during a test trial, the vehicle fails the assessed test condition and the AEB test overall, whether CIB or DBS. In the event of subject vehicle-to-principal other vehicle contact, testing will cease for the test condition, respective test scenario, the AEB test being performed (*i.e.*, CIB or DBS), and the AEB assessment overall.<sup>21</sup> NHTSA will also continue to conduct the false positive<sup>22</sup> test scenario currently used in NCAP, but has modified the test conditions and requirements for passing performance. This test scenario evaluates the propensity of a vehicle’s DBS system to activate inappropriately in a non-critical driving scenario that would not present a safety risk to the vehicle’s occupants. A vehicle must pass each of the 19 required CIB test conditions to obtain credit for CIB and must also separately pass each of the 17 required DBS test conditions to obtain credit for DBS.

NHTSA is consolidating forward collision warning (FCW) testing to assess and evaluate FCW functionality during CIB and DBS testing in all test

scenarios except NHTSA’s false positive tests. For evaluations during CIB and DBS testing, the test vehicle must issue an FCW prior to the onset of automatic braking (as defined by the instant the subject vehicle deceleration reaches at least 0.15g) for the vehicle to pass each test trial run conducted as part of NCAP’s CIB and DBS testing. If the required FCW is not issued prior to the onset of automatic braking imparted by CIB, the vehicle will fail the test trial and CIB/DBS assessment overall. NHTSA will conduct the AEB evaluation by (1) fully releasing the subject vehicle’s accelerator pedal (at any rate) within 500 milliseconds (ms) after an FCW is issued (during CIB and DBS evaluations, and whether before or after automatic braking has begun), and (2) initiating manual (robotic) brake application at a time that corresponds to 1.0 ± 0.1 seconds after issuance of the required FCW signals (during DBS evaluations). A FCW must be presented to the vehicle operator via a minimum of two sensory modalities to receive credit in each of NCAP’s CIB and DBS tests (except for the false positive test). A vehicle must present, at a minimum, an FCW comprised of visual and auditory signals. Finally, Revision G of the AB Dynamics (ABD) Global Vehicle Target (GVT) will be used as the principal other vehicle in NCAP testing instead of the currently used Strikable Surrogate Vehicle (SSV) test device. Other details of the test conditions and response to comments on updating CIB, DBS, and FCW evaluations are provided in relevant sections in this notice.

TABLE 1—ADOPTED CIB TEST SCENARIOS AND CONDITIONS

Test no.	Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
1 .....	LVS	40 (24.9)	0	n/a	n/a	No SV-to-POV contact during any test trial.
2 .....		50 (31.1)	0	n/a	n/a	
3 .....		60 (37.3)	0	n/a	n/a	
4 .....		70 (43.5)	0	n/a	n/a	
5 .....		80 (49.7)	0	n/a	n/a	
6 .....	LVM	40 (24.9)	20 (12.4)	n/a	n/a	
7 .....		50 (31.1)	20 (12.4)	n/a	n/a	
8 .....		60 (37.3)	20 (12.4)	n/a	n/a	
9 .....		70 (43.5)	20 (12.4)	n/a	n/a	
10 .....		80 (49.7)	20 (12.4)	n/a	n/a	
11 .....	LVD	50 (31.1)	50 (31.1)	40 (131.2)	0.3	
12 .....		50 (31.1)	50 (31.1)	12 (39.4)	0.3	
13 .....		80 (49.7)	80 (49.7)	40 (131.2)	0.3	
14 .....		80 (49.7)	80 (49.7)	12 (39.4)	0.3	
15 .....		50 (31.1)	50 (31.1)	40 (131.2)	0.5	
16 .....		50 (31.1)	50 (31.1)	12 (39.4)	0.5	
17 .....		80 (49.7)	80 (49.7)	40 (131.2)	0.5	

<sup>18</sup> See Appendix.

<sup>19</sup> CIB and DBS systems are collectively known as automatic emergency braking (AEB).

<sup>20</sup> Trial or test trial is a test among a set of tests conducted under the same test conditions

(including test speed) with the same subject vehicle.

<sup>21</sup> In essence, because the Agency will provide an overall assessment for AEB performance, if a vehicle fails a trial run in the DBS test, testing will cease for the DBS assessment, and CIB assessments

will not be conducted because the vehicle will have failed the AEB assessment overall.

<sup>22</sup> For purposes of this document, NHTSA uses “false positive” and “false activation” interchangeably, and the Agency intends for them to refer to the same situations.

TABLE 1—ADOPTED CIB TEST SCENARIOS AND CONDITIONS—Continued

Test no.	Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
18 .....	False Positive (STP)	80 (49.7)	80 (49.7)	12 (39.4)	0.5	SV peak deceleration <0.25g
19 .....		80 (49.7)	n/a	n/a	n/a	

TABLE 2—ADOPTED DBS TEST SCENARIOS AND CONDITIONS

Test no.	Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
1 .....	LVS	70 (43.5)	0	n/a	n/a	No SV-to-POV contact during any test trial.
2 .....		80 (49.7)	0	n/a	n/a	
3 .....		90 (55.9)	0	n/a	n/a	
4 .....		100 (62.1)	0	n/a	n/a	
5 .....	LVM	70 (43.5)	20 (12.4)	n/a	n/a	
6 .....		80 (49.7)	20 (12.4)	n/a	n/a	
7 .....		90 (55.9)	20 (12.4)	n/a	n/a	
8 .....	LVD	100 (62.1)	20 (12.4)	n/a	n/a	
9 .....		50 (31.1)	50 (31.1)	40 (131.2)	0.3	
10 .....		50 (31.1)	50 (31.1)	12 (39.4)	0.3	
11 .....		80 (49.7)	80 (49.7)	40 (131.2)	0.3	
12 .....		80 (49.7)	80 (49.7)	12 (39.4)	0.3	
13 .....		50 (31.1)	50 (31.1)	40 (131.2)	0.5	
14 .....		50 (31.1)	50 (31.1)	12 (39.4)	0.5	
15 .....		80 (49.7)	80 (49.7)	40 (131.2)	0.5	
16 .....		80 (49.7)	80 (49.7)	12 (39.4)	0.5	
17 .....		80 (49.7)	80 (49.7)	12 (39.4)	0.5	
	False Positive (STP)	80 (49.7)	n/a	n/a	n/a	SV peak deceleration <0.25g over the base-line peak imparted by manual braking.

*Adding Pedestrian Automatic Emergency Braking Evaluation*

NHTSA is adding the evaluation of pedestrian automatic emergency braking (PAEB) to NCAP using four crossing test scenarios and two in-path test scenarios to evaluate PAEB in daylight and darkness lighting conditions with no overhead lights. For the crossing scenarios (S1), a walking adult or running child pedestrian mannequin crosses perpendicular to the vehicle’s line of travel from either the driver’s left or right side. For the in-path scenarios (S4), an adult pedestrian mannequin is slightly overlapped with the front of the vehicle and is either facing away while standing in front of the vehicle, or walking away from the vehicle, parallel to the flow of traffic.

The subject vehicle’s lower beam headlamps will be used during all NCAP PAEB testing in dark lighting conditions, and the upper beam headlamps will not be engaged either

manually or automatically by way of an advanced lighting system, such as adaptive driving beams, unless such a system cannot be deactivated. This requirement will apply even to those systems that are active by default when low beam headlamps are first engaged. The performance criterion for NCAP’s PAEB tests will be no contact with the pedestrian mannequin. The 4activePA Adult and 4activePA Child pedestrian test mannequins (articulating mannequins) will be used for NCAP’s PAEB evaluation.

NHTSA will test for each of the adopted PAEB test conditions at a minimum subject vehicle speed threshold of 10 kph (6.2 mph), increasing the subject vehicle speed in 10 kph (6.2 mph) increments until the maximum speed threshold is reached, so long as the test vehicle does not contact the pedestrian mannequin during each progressive speed tested. For test conditions S1a, S1b, S1e, S4a, and S4c, the Agency is adopting a

maximum subject vehicle speed threshold of 60 kph (37.3 mph) for both daylight and darkness testing. For test condition S1d, NHTSA is adopting a maximum subject vehicle speed threshold of 60 kph (37.3 mph) for daylight testing and 40 kph (24.9 mph) for darkness testing. Should the subject vehicle contact the pedestrian mannequin during the initial run for any test speed, testing will cease for the test condition, respective test scenario, and PAEB testing overall for the particular lighting condition. Only one trial will be conducted per test condition and vehicles must pass all required tests (*i.e.*, no contact with pedestrian mannequin) to receive PAEB credit for the relevant lighting condition.

An overview of test scenarios and test parameters (pedestrian size, test speed, pedestrian motion, overlap, and obstruction) is provided in Tables 3 and 4.

TABLE 3—ADOPTED NCAP PAEB DAYLIGHT TEST CONDITIONS AND VARIANTS

Test condition	Size	Movement classification	Path origin	Overlap (%)	Obstruction	Test no.	Test speeds (kph (mph))	
							SV	Pedestrian
S4c .....	Adult (Facing Away).	Walk .....	Right .....	25 .....	No .....	1	10 (6.2)	5 (3.1)



TABLE 3—ADOPTED NCAP PAEB DAYLIGHT TEST CONDITIONS AND VARIANTS—Continued

Test condition	Size	Movement classification	Path origin	Overlap (%)	Obstruction	Test no.	Test speeds (kph (mph))	
							SV	Pedestrian
S4a .....	Adult (Facing Away).	Stationary ...	Right .....	25 .....	No .....	2	20 (12.4)	5 (3.1)
						3	30 (18.6)	5 (3.1)
						4	40 (24.9)	5 (3.1)
						5	50 (31.1)	5 (3.1)
						6	60 (37.3)	5 (3.1)
						7	10 (6.2)	0
						8	20 (12.4)	0
S1b .....	Adult .....	Walk .....	Right .....	50 .....	No .....	9	30 (18.6)	0
						10	40 (24.9)	0
						11	50 (31.1)	0
						12	60 (37.3)	0
						13	10 (6.2)	5 (3.1)
						14	20 (12.4)	5 (3.1)
S1a .....	Adult .....	Walk .....	Right .....	25 .....	No .....	15	30 (18.6)	5 (3.1)
						16	40 (24.9)	5 (3.1)
						17	50 (31.1)	5 (3.1)
						18	60 (37.3)	5 (3.1)
						19	10 (6.2)	5 (3.1)
						20	20 (12.4)	5 (3.1)
						21	30 (18.6)	5 (3.1)
S1e .....	Adult .....	Run .....	Left .....	50 .....	No .....	22	40 (24.9)	5 (3.1)
						23	50 (31.1)	5 (3.1)
						24	60 (37.3)	5 (3.1)
						25	10 (6.2)	8 (5.0)
						26	20 (12.4)	8 (5.0)
						27	30 (18.6)	8 (5.0)
						28	40 (24.9)	8 (5.0)
S1d .....	Child .....	Run .....	Right .....	50 .....	Yes .....	29	50 (31.1)	8 (5.0)
						30	60 (37.3)	8 (5.0)
						31	10 (6.2)	5 (3.1)
						32	20 (12.4)	5 (3.1)
						33	30 (18.6)	5 (3.1)
						34	40 (24.9)	5 (3.1)
						35	50 (31.1)	5 (3.1)
						36	60 (37.3)	5 (3.1)

TABLE 4—ADOPTED NCAP PAEB DARKNESS TEST CONDITIONS AND VARIANTS

Test condition	Size	Movement classification	Path origin	Overlap (%)	Obstruction	Test no.	Test speeds (kph (mph))	
							SV	Pedestrian
S4c .....	Adult (Facing Away).	Walk .....	Right .....	25 .....	No .....	1	10 (6.2)	5 (3.1)
						2	20 (12.4)	5 (3.1)
						3	30 (18.6)	5 (3.1)
						4	40 (24.9)	5 (3.1)
						5	50 (31.1)	5 (3.1)
						6	60 (37.3)	5 (3.1)
S4a .....	Adult (Facing Away).	Stationary ...	Right .....	25 .....	No .....	7	10 (6.2)	0
						8	20 (12.4)	0
						9	30 (18.6)	0
						10	40 (24.9)	0
						11	50 (31.1)	0
						12	60 (37.3)	0
						S1b .....	Adult .....	Walk .....
14	20 (12.4)	5 (3.1)						
15	30 (18.6)	5 (3.1)						
16	40 (24.9)	5 (3.1)						
17	50 (31.1)	5 (3.1)						
18	60 (37.3)	5 (3.1)						
S1a .....	Adult .....	Walk .....	Right .....	25 .....	No .....	19	10 (6.2)	5 (3.1)
						20	20 (12.4)	5 (3.1)
						21	30 (18.6)	5 (3.1)
						22	40 (24.9)	5 (3.1)
						23	50 (31.1)	5 (3.1)
						24	60 (37.3)	5 (3.1)

TABLE 4—ADOPTED NCAP PAEB DARKNESS TEST CONDITIONS AND VARIANTS—Continued

Test condition	Size	Movement classification	Path origin	Overlap (%)	Obstruction	Test no.	Test speeds (kph (mph))	
							SV	Pedestrian
S1e .....	Adult .....	Run .....	Left .....	50 .....	No .....	25	10 (6.2)	8 (5.0)
						26	20 (12.4)	8 (5.0)
						27	30 (18.6)	8 (5.0)
						28	40 (24.9)	8 (5.0)
						29	50 (31.1)	8 (5.0)
						30	60 (37.3)	8 (5.0)
S1d .....	Child .....	Run .....	Right .....	50 .....	Yes .....	31	10 (6.2)	5 (3.1)
						32	20 (12.4)	5 (3.1)
						33	30 (18.6)	5 (3.1)
						34	40 (24.9)	5 (3.1)

\* All darkness testing to occur without the use of overhead artificial lighting.

*Adding Blind Spot Warning (BSW) and Blind Spot Intervention (BSI) Evaluation*

This notice adds assessments for two blind spot technologies, BSW and BSI, to NCAP’s crash avoidance program. Blind spot warning (BSW) and blind spot intervention (BSI) will be evaluated separately in individual tests conducted in daylight with the principal other vehicle on the left and right side of the subject vehicle, with the subject vehicle turn signal indicator activated and not activated. BSW will be evaluated using tests representing the Straight Lane Converge and Diverge and Straight Lane Pass-by scenarios,<sup>23</sup> using an actual vehicle (representing a high production mid-size passenger car) as the principal other vehicle. For tests where the turn signal is not activated, a visual warning

signal in the side mirror or the A-pillar must be issued within a specified time as detailed in the BSW test procedure. For tests where the turn signal is activated, an additional warning modality (i.e., a dual-modality warning) or an escalating visual warning signal (e.g., switches from steady-burning to flashing) is required within the time specified in the BSW test procedure.

For the BSW Straight Lane Converge and Diverge scenario, the test speed for both the subject vehicle and principal other vehicle will be 72.4 kph (45.0 mph). For the BSW Straight Lane Pass-by scenario, NHTSA will conduct the lowest speed differential condition (subject vehicle/principal other vehicle speeds of 72.4/80.5 kph (45.0/50.0 mph)) first. If the subject vehicle issues a passing BSW during the run, the

principal other vehicle speed will be incrementally increased by 8.0 kph (5.0 mph) and testing will continue with one run conducted per speed differential condition until a principal other vehicle speed of 104.6 kph (65.0 mph) is reached. Testing will then be repeated following a similar methodology for principal other vehicle movement on the opposite side of the subject vehicle. If, for any speed differential condition, the subject vehicle does not issue a passing BSW, NHTSA will discontinue BSW testing for that vehicle model. Only one trial per BSW test condition will be conducted. An overview of the test scenarios and test parameters for the BSW tests is presented in Table 5. To obtain credit for BSW, the vehicle must pass all 20 tests for BSW.

TABLE 5—BLIND SPOT WARNING (BSW) ADOPTED TEST CONDITIONS

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV direction of approach	Turn signal	
Straight Lane Converge and Diverge .....	72.4 (45)	72.4 (45)	Right .....	Enabled	
			Left .....	Disabled	
Straight Lane Pass-by .....	72.4 (45)	80.5 (50)	Right .....	Enabled	
			Left .....	Disabled	
			88.5 (55)	Right .....	Enabled
				Left .....	Disabled
		96.6 (60)	Right .....	Enabled	
			Left .....	Disabled	
			104.6 (65)	Right .....	Enabled
				Left .....	Disabled

<sup>23</sup>The two scenarios for assessing BSW were proposed in the March 2022 RFC notice and are described in a later section of this notice.

BSI will be evaluated using tests representing two lane change scenarios (Subject Vehicle Lane Change with Constant Headway and Subject Vehicle Lane Change with Closing Headway) and one false positive scenario (Subject Vehicle Lane Change with Constant Headway False Positive Assessment),<sup>24</sup> using Revision G of the ABD GVT as the principal other vehicle. All BSI evaluations will be conducted with adaptive cruise control (ACC), lane centering assistance (LCA), and/or lane keeping assist (LKA) technologies (if equipped and if the systems can be disengaged) turned off.

For the BSI Subject Vehicle Lane Change with Constant Headway and the False Positive tests, the test speed for both the subject vehicle and principal

other vehicle will be 72.4 kph (45.0 mph). For the BSI Subject Vehicle Lane Change with Closing Headway tests, the subject vehicle test speed will be 72.4 kph (45.0 mph) and the principal other vehicle speed will be 80.5 kph (50 mph). In these tests, after a short period of steady-state driving, the subject vehicle driver (*i.e.*, robot) initiates a lane change and follows an 800 m (2,625 ft.) radius curved path towards the principal other vehicles' travel lane. The subject vehicle driver then releases the steering wheel upon the subject vehicle exiting the curve so as to achieve a steady state lateral velocity of  $0.7 \pm 0.1$  m/s ( $2.3 \pm 0.3$  ft./s) relative to the line separating the subject vehicle and principal other vehicle travel lanes. Each test scenario is conducted with

turn signal enabled and disabled and for both left and right lane change directions.

To pass the Subject Vehicle Lane Change with Constant Headway and the Subject Vehicle Lane Change with Closing Headway tests, the BSI system must prevent any contact between the subject vehicle and the principal other vehicle. The subject vehicle BSI intervention must not cause a secondary departure on the opposite side of the lane. To pass a false positive test, the BSI system must not intervene. Only one trial per BSI test condition will be conducted. An overview of the test scenarios and test parameters for the BSI tests is presented in Table 6. To obtain credit for BSI, the vehicle must pass all 12 tests.

TABLE 6—BLIND SPOT INTERVENTION (BSI) ADOPTED TEST CONDITIONS

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	Lane change direction	Turn signal
SV Lane Change with Constant Headway .....	72.4 (45)	72.4 (45)	Left	Enabled. Disabled.
			Right	Enabled. Disabled.
SV Lane Change with Closing Headway .....	72.4 (45)	80.5 (50)	Left	Enabled. Disabled.
			Right	Enabled. Disabled.
SV Lane Change with Constant Headway, False Positive Assessment.	72.4 (45)	72.4 (45)	Left	Enabled. Disabled.
			Right	Enabled. Disabled.

*Adding Lane Keeping Assist (LKA) and Enhancing Lane Departure Warning (LDW) Evaluation*

NHTSA is adding the assessment of lane keeping assist (LKA) into NCAP and integrating the evaluation of lane departure warning (LDW) with the LKA evaluation. To evaluate a vehicle's LDW sensitivity and LKA intervention capabilities, NHTSA's testing includes the use of a single solid white lane line, dashed yellow lane line, or Botts' dots (raised pavement markers) on either the right or left side of the vehicle's travel lane, depending on testing direction. Additional tests will be conducted with two lane lines (solid yellow and dashed white lines, and dashed white and solid white lines) to evaluate a vehicle's

ability to properly correct its heading to prevent a secondary lane departure after the initial intervention. For the LDW/LKA tests, the subject vehicle, traveling at a speed of 72.4 kph (45 mph), heads towards the lane line using an initial path defined by a 1,200 m (3,937 ft.) radius curve. Tests will be conducted by incrementing the lateral velocity of the subject vehicle's approach toward the lane line from 0.2 to 0.6 m/s (0.7 to 2.0 ft./s) in 0.1 m/s (0.3 ft./s) increments.

To pass the criteria of the LDW/LKA evaluation test, the subject vehicle must issue a visual signal when the lateral position of the vehicle, represented by a two-dimensional polygon, is within 0.75 m (2.5 ft.) of the inboard edge of the lane line and before the lane departure exceeds 0.3 m (1 ft.). The LKA

intervention itself will serve as a secondary haptic alert component. Neither an LDW nor LKA intervention shall occur when a vehicle has not departed its lane and is farther than 0.75 m (2.5 ft.) from the inboard edge of the lane line. In addition, the visual warning signal and LKA intervention must be issued before the lane departure exceeds 0.3 m (1 ft.), and the visual alert must be issued prior to, or concurrent with, the start of the LKA intervention. Only one trial per test condition is conducted. An overview of the test scenarios and test parameters for the LDW/LKA tests is presented in Table 7. To obtain credit for LDW and LKA, the vehicle must pass all 50 tests performed during the LDW/LKA performance assessment.

<sup>24</sup> These three scenarios for assessing BSI were proposed in the March 2022 RFC notice and are described in a later section of the notice.

TABLE 7—LANE DEPARTURE WARNING (LDW)/LANE KEEPING ASSIST (LKA) ADOPTED TEST CONDITIONS

Test scenario	Line type	Departure direction	Lateral velocity (m/s (ft./s))	Passing criteria	
				Maximum SV excursion (m (ft.))	LDW alert issued (m (ft.))
Primary Departure ..... (Single Straight Lane Line) ..	Solid White .....	Left	0.2 (0.7)	-0.3 (-1.0)	0.75 to -0.3 (2.5 to -1.0).
			0.3 (1.0)		
			0.4 (1.3)		
		Right	0.5 (1.6)		
			0.6 (2.0)		
			0.2 (0.7)		
	Dashed Yellow ..	Left	0.3 (1.0)		
			0.4 (1.3)		
			0.5 (1.6)		
		Right	0.6 (2.0)		
			0.2 (0.7)		
			0.3 (1.0)		
Raised Pavement Markers.	Left	0.4 (1.3)			
		0.5 (1.6)			
		0.6 (2.0)			
	Right	0.2 (0.7)			
		0.3 (1.0)			
		0.4 (1.3)			
Secondary Departure ..... (Dual Straight Lane Line) .....	Solid Yellow (L)/ Dashed White (R).	Left	0.5 (1.6)	-0.3 (-1.0)	0.75 to -0.3 (2.5 to -1.0).
			0.6 (2.0)		
			0.2 (0.7)		
		Right	0.3 (1.0)		
			0.4 (1.3)		
			0.5 (1.6)		
	Dashed White (L)/ Solid White (R).	Left	0.6 (2.0)		
			0.2 (0.7)		
			0.3 (1.0)		
		Right	0.4 (1.3)		
			0.5 (1.6)		
			0.6 (2.0)		
Dashed White (L)/ Solid White (R).	Left	0.2 (0.7)			
		0.3 (1.0)			
		0.4 (1.3)			
	Right	0.5 (1.6)			
		0.6 (2.0)			
		0.2 (0.7)			

*NCAP Roadmap 2024–2033*

NHTSA has developed a final roadmap to update NCAP through multiple phases from 2024 through 2033, with mid-term roadmap items spanning the period 2024–2028, and long-term items spanning the period 2024–2033. The NCAP roadmap includes four phases for each NCAP initiative, along with a completion milestone for each phase. The four phases are: (1) Research phase, if

applicable, (2) Request for comment (RFC) phase, (3) Final decision phase, and (4) Implementation phase. NHTSA plans updates to NCAP in the following three safety programs: crashworthiness, crash avoidance, and vulnerable road user safety. A summary of the mid-term and long-term actions for this roadmap is presented in Tables 8 and 9, respectively. The timeframe shown for the research, RFC, and final decision phases is in calendar years. The start of

the implementation phase is in the fourth quarter of the calendar year shown in the two tables. Note that the implementation phase starts with vehicle models of the following calendar year shown in Tables 8 and 9. NHTSA plans to update the NCAP roadmap approximately every four years, with timelines updated accordingly. Details of the NCAP roadmap are provided in the roadmap section of this notice.

TABLE 8—ROADMAP FOR MID-TERM UPGRADES TO NCAP  
[In calendar years]

Potential updates to NCAP evaluations	Research phase	RFC phase	Final decision phase	Implementation phase start in 4th quarter
<i>Crash Avoidance Program:</i>				
Enhanced FCW, CIB, DBS .....	.....	.....	2023–2024	2025
LDW+LKA and BSW+BSI .....	.....	.....	2023–2024	2025
Rear Automatic Braking .....	2024	2025	2025–2026	2027
<i>Crashworthiness Program:</i>				
THOR–50M in Frontal Crash Tests and HIII–05F* in Driver Position in Frontal Rigid Barrier Crash Test .....	2024	2024–2025	2025–2026	2027
Frontal Oblique Crash Test with THOR–50M .....	2024	2024–2025	2025–2026	2027
WorldSID–50M in Side Impact Tests, and SID–IIs** Rib Deflections for Injury Risk Assessment .....	2024	2024–2025	2025–2026	2027
<i>Vulnerable Road User (VRU) Safety Program:</i>				
PAEB (day and night-time) .....	.....	.....	2023–2024	2025
Crashworthiness Pedestrian Protection .....	.....	.....	2023–2024	2025
Unattended Child Alert System (Availability of Direct Sensing Technologies Noted in Safety Features Section on Ratings Webpage) .....	.....	.....	.....	2024
Bicyclist and Motorcyclist AEB (along path scenarios) .....	2024–2025	2025	2025–2026	2027
<i>Vehicle Safety Rating:</i>				
Rating System for Crash Avoidance Technologies .....	.....	.....	2024–2025	2027
Rating Systems for Crashworthiness, VRU Safety, and Overall Safety .....	.....	2024–2025	2025–2026	2027
Monroney Label Rulemaking—Crash Avoidance, Crashworthiness, VRU Safety, and Overall Safety Ratings .....	2023–2024	2025	2025–2026	2027

\*The advanced 5th percentile female frontal impact test dummy, THOR–05F, is currently under evaluation/refinement and is included in the long-term NCAP update in this roadmap. Until THOR–05F is completed and included in NCAP, NHTSA will use the current HIII–05F dummy in frontal crash tests.

\*\*The advanced 5th percentile female side impact test dummy, WorldSID–05F, is currently under development and its use in NCAP will be considered in the long-term section of this roadmap. Until WorldSID–05F is included in NCAP, the SID–IIs will be used in NCAP along with thoracic and abdominal deflection measurements.

TABLE 9—ROADMAP FOR LONG-TERM UPGRADES TO NCAP  
[In calendar years]

Potential updates to NCAP Evaluations	Research phase	RFC phase	Final decision phase	Implementation phase start in 4th quarter
<i>Crash Avoidance Program:</i>				
Headlighting System (Advanced Driving Beam, Semi-Automatic Beam Switching, and Lower Beam Headlamp) .....	2024–2026	2026–2027	2028	2030
AEB for Intersection Crash Scenarios .....	2025–2027	2028	2029	2031
Enhanced LKA (Higher Speed, Curved Road and/or Road Edge Detection Scenarios) .....	2024–2026	2027	2028	2030
Enhanced AEB (Speed and Additional Scenarios) .....	2026–2028	2029	2030	2032
Driver Monitoring Systems—Distracted/Drowsy Driving .....	2023–2027	2028	2029	2031
Intelligent Speed Assist .....	2024–2028	.....	.....	.....
<i>Crashworthiness Program:</i>				
THOR–05F in Frontal Crash Tests in Front and Rear Seating Positions .....	2023–2027	2027–2028	2028–2029	2031
WorldSID–05F in Side Impact Crash Tests .....	2023–2029	2029–2030	2030–2031	2033
<i>VRU Safety Program:</i>				
Enhanced AEB for Bicyclists and Motorcyclists in Intersection Crashes .....	2025–2026	2027	2028	2030
BSW and BSI Evaluation for Bicyclists and Motorcyclists Crash Protection .....	2025–2026	2027	2028	2030
Crashworthiness Pedestrian Protection using aPLI* .....	2024–2025	2026	2027	2029
Enhanced PAEB (Speed and Additional Scenarios) .....	2026–2028	2029	2030	2032
Driver Visibility .....	2023–2027	.....	.....	.....

\*aPLI is the advanced pedestrian legform impactor. It assesses pedestrian injuries to the knee, upper leg, and lower leg in impacts with the front of vehicles.

**III. Background**

The National Highway Traffic Safety Administration’s (NHTSA’s) New Car Assessment Program (NCAP) supports the Agency’s mission to reduce the number of fatalities and injuries that occur on U.S. roadways by providing important vehicle safety information to consumers to inform their purchasing

decisions. The last major NCAP upgrade occurred on July 11, 2008, and took effect with model year 2011 vehicles.<sup>25</sup> That program update included the Agency’s adoption of new frontal and side anthropomorphic test devices (crash test dummies) and associated

injury criteria, a new oblique side pole test, and a new overall rating system combining the individual frontal, side, and rollover ratings. NHTSA also expanded NCAP to include assessment of three advanced driver assistance systems (ADAS) technologies: forward collision warning (FCW), lane departure warning (LDW), and electronic stability

<sup>25</sup> 73 FR 40016 (July 11, 2008).

control (ESC).<sup>26</sup> Through that expansion, the Agency began to identify which vehicles were equipped with these technologies and met specified performance requirements, making this information available on the NHTSA website. In November 2015, NHTSA also added crash imminent braking (CIB) and dynamic brake support (DBS) technologies (also known as automatic emergency braking, or AEB technology) to its ADAS assessments, with implementation beginning with model year 2018 vehicles.<sup>27</sup>

In December 2015, the Agency published a Request for Comments (RFC) notice with planned changes to the overall NCAP program. The notice sought comment on NCAP's potential use of enhanced tools and techniques to evaluate the safety of vehicles, generate star ratings, and encourage further vehicle safety developments.<sup>28</sup> The RFC notice also outlined planned changes for the crashworthiness, crash avoidance, and ratings categories. Many commenters responding to the December 2015 RFC notice stated it lacked sufficient detail and supporting information to allow for thorough review and comment. Commenters also expressed concern over test procedure repeatability and reproducibility based on the RFC notice's lack of detail, performance criteria, and non-standardized test devices. NHTSA hosted a public meeting in October 2018 to re-engage stakeholders and seek up-to-date input to help the Agency plan the future of NCAP.

On March 9, 2022, NHTSA published an RFC notice proposing changes to NCAP in response to the comments received from the 2015 RFC and public meetings, which partially fulfills the Agency's obligations under the 2015 Fixing America's Surface Transportation (FAST) Act directive and recent mandates included in section 24213 of the November 2021 Bipartisan Infrastructure Law (BIL). The proposed changes include:

- Changes to test procedures and performance criteria, including an increase in stringency, for the four currently recommended ADAS technologies in NCAP (FCW, LDW,

DBS, and CIB) to enhance evaluation of the systems' capabilities in current vehicle models, reduce test burden, and promote harmonization with other consumer information programs.

- The addition of four new ADAS technologies—blind spot warning (BSW), blind spot intervention (BSI), lane keeping assist (LKA), and pedestrian automatic emergency braking (PAEB)—to those currently recommended by NCAP and highlighted on the Agency's website. The Agency proposed to incorporate these four new ADAS technologies into NCAP because data indicates they satisfy NHTSA's four prerequisites for inclusion in the program: (1) a known safety need exists; (2) system designs (countermeasures) exist that can mitigate the safety problem; (3) existing or new system designs have the potential to improve safety; and (4) a performance-based objective test procedure exists that can assess system performance.<sup>29</sup>

- A "roadmap" of the Agency's plans to update NCAP in phases over the next ten years, setting forth NHTSA's mid-term and long-term strategies for upgrading the program using a phased approach. The roadmap presents an *estimated* timeframe for the issuance of phased request for comment notices to incorporate various potential program components. However, NHTSA would only issue proposals to update the program as technologies mature and are considered ready for inclusion such that they meet the program's four prerequisites. Following each proposal, NHTSA will issue a final decision notice responding to the comments received and providing the Agency's decisions for that particular program update, as well as the lead time for implementation.

In addition to these proposed changes, the RFC notice proposed operational changes to streamline the information provided to consumers. Specifically, the Agency proposed a process for updating ADAS-related information provided to consumers to reflect changes made to vehicles during the middle of a model year. Further, although not explicitly proposed in the RFC notice, the Agency sought comment on the following topics to help guide future proposals:

- The Agency's plan to develop a new ADAS rating system for NCAP to provide consumers with improved data to compare and shop for vehicles and spur improved ADAS performance. NCAP currently assigns ratings to vehicles based on their performance in

crashworthiness (*i.e.*, frontal and side impact) and rollover tests, but the program has no complementary rating system to differentiate performance among vehicles' crash avoidance systems. Instead, NCAP only recommends certain ADAS technologies to shoppers and identifies vehicles that offer the recommended technologies that pass the program's system performance criteria.

- Steps to include crash avoidance rating information on a vehicle's window sticker (*i.e.*, the Monroney label) at the point of sale, consistent with the 2015 FAST Act. The Agency noted that it is currently conducting consumer research to determine how best to present such information to maximize its effectiveness in informing vehicle purchasing decisions. NHTSA stated that it would consider the information gained from this research in conjunction with related comments received in response to the 2022 RFC to develop a proposal for a revised label, which will be detailed in a separate RFC notice.

- Expanding NCAP to include safety technologies that promote NHTSA's continuing efforts to combat unsafe driving or riding behaviors, such as speeding and drowsy, impaired, distracted, and unbelted driving, as well as safety technologies that may prevent unintentional human behavior that may result in injury or death, such as vehicular heatstroke.

- The Agency's ideas for updating several programmatic aspects of NCAP, including adding new crash test dummies, updating the rollover risk curve, and enhancing the presentation and dissemination of safety information provided to consumers to improve the program. More specifically, NHTSA requested comment on several potential ways to revise the 5-star safety ratings system, including adopting a points-based rating system concept, revising the baseline risk, and incorporating decimal or half-star ratings.

- Additional considerations that would allow NCAP to remain effective and relevant to improve vehicle safety, such as proposed updates to the NCAP website and the development of an NCAP database to modernize the operational aspects of the program, including a new vehicle information submission process for vehicle manufacturers.

Following publication of the March 2022 RFC notice, NHTSA received comments generally supportive of the Agency's proposal to adopt additional crash avoidance elements. Additional details of NHTSA's proposal for each of

<sup>26</sup> ESC was removed from the Agency's list of recommended ADAS technologies through NCAP beginning in model year 2014 when the technology became mandated under Federal motor vehicle safety standard (FMVSS) No. 126, "Electronic stability control." NHTSA also included rear video systems in its list of recommended technologies under NCAP from model years 2014 to 2017 and removed that technology from its list when it became mandated under FMVSS No. 111, "Rear visibility."

<sup>27</sup> 80 FR 68604 (Nov. 5, 2015).

<sup>28</sup> 80 FR 78521 (Dec. 16, 2015).

<sup>29</sup> See NCAP Rating FAQ No. 07, <http://nhtsa.gov/ratings>.

the items listed above is provided in later sections.  
 Summary of General Comments on Proposed Updates to NCAP  
 NHTSA received over 4,000 comments in response to the March

2022 RFC notice.<sup>30</sup> The Agency received comments from a wide variety of commenters including safety advocacy groups, trade associations, vehicle manufacturers, suppliers and developers, government agencies and

associations, test laboratories, an insurance company, a research/consulting firm, and individual members of the public. A summary of the commenters to the March 2022 RFC notice is provided in Table 10.

TABLE 10—COMMENTERS TO THE MARCH 2022 NCAP RFC NOTICE

Category	Commenters
Safety Advocacy Groups	AAA Inc. (AAA), AARP, Advanced Mobility Group, Advocates for Highway and Auto Safety (Advocates), American Motorcyclist Association (AMA), Center for Auto Safety (CAS), Consortium for Constituents with Disabilities Transportation Task Force (CCD Transportation Task Force), Consumer Reports (CR), Insurance Institute for Highway Safety (IIHS), Kids and Car Safety (KAC), Families for Safe Streets (FSS), Intelligent Transportation Society of America (ITS America), Massachusetts Vision Zero Coalition, The League of American Bicyclists (The League), Vision Zero Network (VZN), and ZF Group.
Industry Trade Associations	Alliance for Automotive Innovation (Auto Innovators), Automotive Safety Council (ASC), Motor & Equipment Manufacturers Association (MEMA), Motorcycle Industry Council and Motorcycle Safety Foundation (MIC/MSF), National Automobile Dealers Association (NADA), Specialty Equipment Market Association (SEMA), The Lidar Coalition.
Vehicle Manufacturers	American Honda Motor Co., Inc. (Honda), BMW of North America, LLC (BMW), FCA US LLC (FCA), Ford Motor Company (Ford), General Motors (GM), Hyundai America Technical Center, Inc. (HATCI), Hyundai Motor North America (Hyundai), Mercedes-Benz, LLC, a division of Mercedes-Benz Automotive Group (Mercedes-Benz), North American Subaru, Inc. (Subaru), Rivian Automotive, LLC (Rivian), Tesla, Inc. (Tesla), Toyota Motor North America (Toyota).
Suppliers and Developers	Aptiv PLC (Aptiv), Bosch LLC (Bosch), DENSO Corporation (DENSO), Intel Corporation (Intel), Robert Vayyar, Velodyne Lidar, Inc. (Velodyne).
Government Agencies and Associations	American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), National Transportation Safety Board (NTSB), New York City Department of Transportation & New York City Department of Citywide Administrative Services, Vision Zero Task Force (NYC DOT/NYC DCAS, Vision Zero Task Force).
Test Laboratories	Applus IDIADA (IDIADA), Dynamic Research Inc. (DRI), Transportation Research Center, Inc. (TRC).
Insurance Companies	State Farm Insurance Companies (State Farm).
Research/Consulting Companies	Safe Streets Research & Consulting (Safe Streets).
General Public	Individuals.

Many commenters stated they support NHTSA’s goal of providing comparative safety information to consumers through NCAP but encouraged the Agency to further leverage NCAP to ensure consumers have a comprehensive understanding of vehicle safety. Commenters also stated that more testing, rating, and information-sharing with consumers about the functionalities of advanced safety technologies via NCAP will promote the technologies’ use in future vehicles and advance vehicle safety. The Alliance for Automotive Innovation (Auto Innovators) stated it supports NHTSA’s efforts to modernize NCAP, noting that a key benefit of a well-developed and technically robust NCAP is the introduction of advanced safety technologies and performance evaluation through market incentives (objective ratings) in a structured and predictable manner via the development of testing procedures, evaluation metrics, and safety benefits. Auto Innovators stated that doing so will lead to more vehicles being equipped with new ADAS technologies, ultimately decreasing technology costs, and

bolstering the case for potential regulation. Many commenters, including those who have lost loved ones in automotive accidents, expressed support for the proposed NCAP changes but stated they do not go far enough, noting the U.S. program is behind other countries’ NCAP programs in updating, implementing, and “standardizing” NCAP with proven safety technologies to save more lives. The Advocates for Highway and Auto Safety (Advocates), the Consumer Federation of America, and many others expressed concern that the approach described in the March 2022 RFC is not sufficiently specific and lacks firm commitments on key updates to the program. Further, the National Safety Council (NSC) stated that its data continues to suggest NHTSA is not doing enough to address roadway safety, with thousands of people dying in preventable crashes each year. Several commenters pointed out that fatalities involving pedestrians and cyclists have been increasing at alarming rates and urged NHTSA to consider the safety of those outside of the vehicle. Many cyclist organizations stated that any NCAP updates should include cyclist AEB testing and tests

aimed at increasing cyclist safety. One individual noted the more than 50 percent increase in annual pedestrian fatalities in the past decade, stating that safety innovations are benefiting those inside, not outside, of the vehicle. Many other individual commenters expressed concern for the safety of pedestrians, mobility device users, and cyclists amidst rising fatalities from increasingly large vehicles, suggesting that NHTSA should consider promoting technologies and performing tests to protect them. Many commenters expressed support for the Agency’s proposed inclusion of the four new ADAS technologies and for enhancing the evaluation of ADAS technologies currently in NCAP. However, some commenters argued the proposal did not go far enough, suggesting that ADAS technologies (including PAEB) should not just be part of the voluntary NCAP program but should be mandatory on new vehicles to reduce fatalities, especially in urban areas. Many commenters also requested that NHTSA harmonize test procedures and evaluations with other existing testing protocols like Euro NCAP. While commenters generally supported the proposed roadmap, some noted that it

<sup>30</sup> The March 2022 RFC notice requested comment on a number of topics, including emerging technologies, and potential future updates

to NCAP, that have not been proposed, and thus are not addressed, in the present notice. Details of the comments received and the Agency’s response to

these comments will be provided in future RFC notices relevant to those topics.



lacked sufficient specificity on future timelines, dates, and required actions. Commenters requested periodic stakeholder engagement and collaboration for developing future NCAP roadmaps.

Several commenters also provided detailed responses to questions NHTSA posed in the March 2022 RFC notice to help guide its decisions. The following sections discuss in detail: (1) NHTSA's proposal for each technology, (2) the Agency's response to the comments received to the questions posed, and (3) final decisions on the proposed changes to NCAP specific to the technology.

#### IV. Updating Forward Collision Prevention Technologies

NHTSA is updating assessments for FCW and AEB technologies (*i.e.*, CIB and DBS) in NCAP's crash avoidance program. As discussed in NHTSA's March 2022 RFC notice, these technologies, designed to address forward collisions (rear-end crashes), have the potential to help prevent or mitigate rear-end pre-crash scenarios representing approximately 1.7 million crashes annually, or 29 percent of all crashes that currently occur on U.S. roadways.<sup>31</sup> These crashes result in 1,275 fatalities, on average, and 883,386 MAIS 1–5 injuries annually, representing 3.8 percent of all fatalities and 32 percent of all injuries, respectively.<sup>32</sup> FCW and AEB technologies have proven effective in reducing crashes, fatalities, and injuries. For instance, as discussed in the March 2022 RFC notice, the University of Michigan Transportation Research Institute (UMTRI) found that for 3.8 million model year 2013–2017 GM vehicles, camera-based FCW systems produced an estimated 21 percent reduction in rear-end striking crashes, while the AEB systems studied (which included a combination of camera-only, radar-only, and fused camera-radar systems) produced an estimated 46 percent reduction in the same crash type.<sup>33</sup> These findings align with a 2017

Insurance Institute for Highway Safety (IIHS) study,<sup>34</sup> which concluded that vehicles equipped with FCW and AEB showed a 50 percent reduction for the same crash type.<sup>35</sup>

Until these technologies are standard equipment on all passenger vehicles, it is important for NCAP to continue to recommend FCW and AEB technologies to consumers and to inform them which vehicles have FCW and AEB technologies meeting NHTSA's performance criteria. Further, given recent increases in the penetration of FCW and AEB technologies in the vehicle fleet and improvements to sensors, now is an opportune time to increase the stringency of the current NCAP performance requirements for these technologies.

##### A. Forward Collision Warning (FCW)

FCW systems use forward-looking sensors (*e.g.*, radar, lidar, camera systems, or a combination thereof) that detect objects (*e.g.*, vehicles, pedestrians) in front of vehicles and issue an alert to the driver. An FCW system uses the sensors' input to determine the speed of the object in front of it and the distance between the vehicle and the object. If the sensing system determines that the closing distance and velocity<sup>36</sup> between the driver's vehicle and the object in front of it is such that a collision may be imminent, the warning system is designed to induce an immediate crash avoidance response by the vehicle operator. Warning systems in use today provide drivers with a visual display, such as an illuminated telltale on or near the instrument panel, an auditory signal (*e.g.*, buzzer or chime), and/or a haptic signal that provides tactile feedback (*e.g.*, rapid vibrations of the seat pan or steering wheel). These signals warn the driver of an impending collision so the driver may then manually intervene (*e.g.*, apply the vehicle's brakes or make an evasive steering maneuver) to avoid or mitigate a crash. FCW systems alone do not brake the vehicle.

NHTSA added FCW systems to its NCAP ADAS evaluations in 2008 (with performance evaluations beginning with model year 2011 vehicles) because these systems met the Agency's four

prerequisites for inclusion at the time.<sup>37</sup> In its March 2022 RFC notice, the Agency proposed to continue to include FCW assessments in NCAP, as it found FCW systems to be effective, well-accepted by consumers, and widely available in the current vehicle fleet. For example, in its 2017 study, IIHS<sup>38</sup> found that FCW systems reduced rear-end crashes by 27 percent. Further, in a 2019 survey of more than 57,000 Consumer Reports subscribers, 69 percent of vehicle owners reported they were satisfied with their vehicle's FCW technology.<sup>39</sup> Currently, manufacturer-submitted data collected by NHTSA indicates 91 percent of model year 2023 vehicles are equipped with FCW systems as standard equipment.

##### NCAP's Current Forward Collision Warning Test Procedure

The Agency included FCW as a recommended technology in NCAP and conducted performance evaluations beginning with model year 2011 vehicles. The FCW test procedure adopted at that time is still in use in the Agency's testing today.<sup>40</sup>

Currently, NCAP's FCW test procedure<sup>41</sup> consists of three scenarios that simulate the most frequent types of rear-end crashes. These include lead vehicle stopped (LVS), lead vehicle decelerating (LVD), and lead vehicle moving (LVM) scenarios. In each scenario, the vehicle being evaluated is called the subject vehicle (SV). The SV is driven by a professional driver who provides the necessary acceleration, braking, and steering inputs during the test. A production mid-size passenger car, designated as the principal other vehicle (POV) during testing, is positioned directly in front of the SV and is also driven by a professional driver. Time-to-collision (TTC) criteria are prescribed for each FCW scenario. The TTC for each scenario is calculated by considering the speed of the SV relative to the POV at the time of the FCW. If the FCW system fails to issue a warning within the required time during testing, the SV's professional test

<sup>31</sup> Wang, J.-S. (2019, March), *Target crash population for crash avoidance technologies in passenger vehicles* (Report No. DOT HS 812 653). Washington, DC: National Highway Traffic Safety Administration.

<sup>32</sup> The Abbreviated Injury Scale (AIS) is a classification system for assessing impact injury severity. AIS ranks individual injuries by body region on a scale of 1 to 6 where 1=minor, 2=moderate, 3=serious, 4=severe, 5=critical, and 6=maximum (untreatable). MAIS represents the maximum injury severity, or AIS level, recorded for an occupant (*i.e.*, the highest single AIS for a person with one or more injuries).

<sup>33</sup> Leslie, A.J., Kiefer, R.J., Meitzner, M.R., & Flannagan, C.A. (2019), *Analysis of the field effectiveness of General Motors production active safety and advanced headlighting systems*, The

University of Michigan Transportation Research Institute and General Motors LLC. UMTRI–2019–6.

<sup>34</sup> Cicchino, J.B. (2017, February), Effectiveness of forward collision warning and autonomous emergency braking systems in reducing front-to-rear crash rates, *Accident Analysis and Prevention*, 2017 Feb;99(Pt A):142–152. <https://doi.org/10.1016/j.aap.2016.11.009>.

<sup>35</sup> Low-speed AEB showed a 43% reduction.

<sup>36</sup> Closing velocity is the rate at which two objects are getting closer to each other.

<sup>37</sup> 73 FR 40033 (July 11, 2008).

<sup>38</sup> Cicchino, J.B. (2017, February), Effectiveness of forward collision warning and autonomous emergency braking systems in reducing front-to-rear crash rates, *Accident Analysis and Prevention*, 2017 Feb;99(Pt A):142–152. <https://doi.org/10.1016/j.aap.2016.11.009>.

<sup>39</sup> Consumer Reports (2019, November), *Consumer Perception of ADAS*, <https://data.consumerreports.org/reports/consumer-perceptions-of-adas/>.

<sup>40</sup> 73 FR 40016 (July 11, 2008).

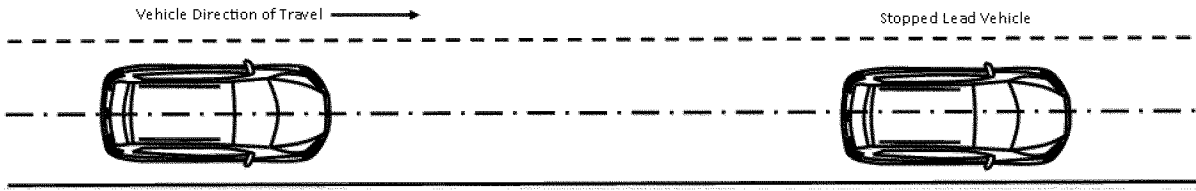
<sup>41</sup> National Highway Traffic Safety Administration. (2013, February). *Forward collision warning system confirmation test*. <https://www.regulations.gov>. Docket No. NHTSA–2006–26555–0134.

driver brakes, or steers away, to avoid a collision with the POV. A short description of each test scenario and the requirements for a passing result based

on the prescribed TTC is provided below:

- LVS—The SV encounters a stopped POV directly in front of it on a straight road. The SV is moving at 72.4 kph (45

mph), and the POV is stationary. To pass this test, the SV must issue an FCW when the TTC is at least 2.1 s. See Figure 1 (below) for a scenario diagram.

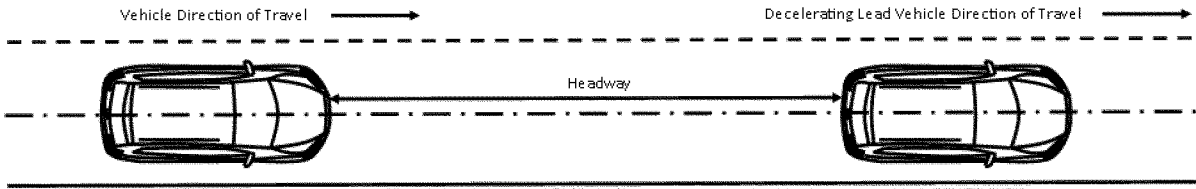


**Figure 1: Lead Vehicle Stopped Scenario**

- LVD—The SV encounters a POV slowing with constant deceleration directly in front of it on a straight road. The SV and POV are both driven at 72.4

kph (45 mph) with an initial headway of 30.0 m (98.4 ft.). The POV then decelerates, braking at a constant deceleration of 0.3g in front of the SV.

To pass this test, the SV must issue an FCW when the TTC is at least 2.4 s. See Figure 2 (below) for a scenario diagram.

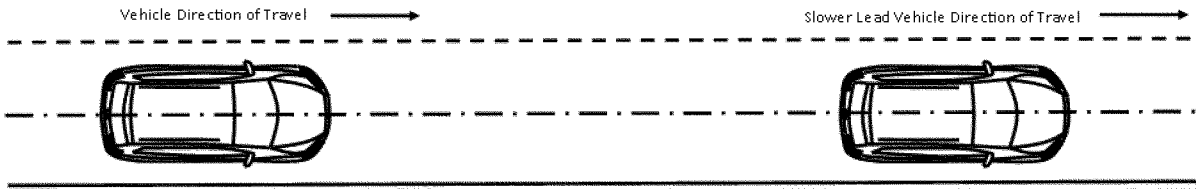


**Figure 2: Lead Vehicle Decelerating Scenario**

- LVM—The SV encounters a slower-moving POV directly in front of it on a straight road. The SV and POV are

driven at constant speeds of 72.4 kph (45 mph) and 32.2 kph (20 mph), respectively. To pass this test, the SV

must issue an FCW when the TTC is at least 2.0 s. See Figure 3 (below) for a scenario diagram.



**Figure 3: Lead Vehicle Moving Scenario**

Each of these three scenarios is conducted up to seven times. To pass the NCAP FCW system performance tests, the SV must satisfy the respective TTC-based performance criteria for at least five out of seven trials<sup>42</sup> for each of the three test scenarios.

<sup>42</sup> As noted in the Agency’s 2015 AEB final decision notice (80 FR 68618 (Nov. 5, 2015)), a pass rate of five out of seven tests per scenario was adopted for NCAP’s current FCW test protocol to provide the Agency with a way to encourage system robustness without precluding the proliferation of emerging technologies offering the potential for significant safety benefits.

**B. Automatic Emergency Braking (AEB)**

One limitation of FCW systems is that, although designed to warn the driver of an impending rear-end crash, they do not actively and automatically assist drivers with avoiding rear-end crashes or mitigating their severity. To address this, CIB and DBS (known collectively as AEB) both provide significant automatic braking of the vehicle.<sup>43</sup> DBS systems provide

<sup>43</sup> Some FCW systems use haptic brake pulses to alert the driver of a crash-imminent driving situation, but they are not intended to effectively slow the vehicle.

supplemental braking when sensors determine that driver-applied braking is insufficient to avoid an imminent crash. CIB systems provide automatic braking when forward-looking sensors indicate that a crash is imminent, and the driver has not braked.

Research has shown that active safety systems such as AEB provide greater safety benefits than the corresponding warning systems alone, such as FCW. In its 2019 study, UMTRI<sup>44</sup> found that

<sup>44</sup> Leslie, A.J., Kiefer, R.J., Meitzner, M.R., & Flannagan, C.A. (2019, September), *Analysis of the field effectiveness of General Motors production*

AEB systems produced an estimated 46 percent reduction in applicable rear-end crashes when combined with a forward collision warning, which alone showed only a 21 percent reduction.<sup>45</sup> Like FCW systems, AEB systems are also well-accepted by consumers and widely available in the current vehicle fleet. In Consumer Reports' 2019 subscriber survey, 81 percent of owners of vehicles equipped with AEB reported they were satisfied with AEB technology.<sup>46</sup> Currently, manufacturer-submitted data collected by NHTSA indicates approximately 91 percent of model year 2023 vehicles are equipped with AEB systems as standard equipment. For these reasons, in 2015, NHTSA added CIB and DBS technologies to its ADAS assessments starting with model year 2018 vehicles, and why the Agency also proposed to continue to include AEB assessments in NCAP in its March 2022 RFC notice.<sup>47</sup>

### 1. Dynamic Brake Support (DBS)

Like FCW (and CIB) systems, DBS systems employ forward-looking sensors to detect vehicles in the path directly ahead while simultaneously monitoring the operational state of the driver's vehicle (e.g., speed, the relative speed of and distance to the lead vehicle, driver inputs of steering and braking). In response to an FCW or an imminent crash, a driver may initiate braking to avoid a rear-end crash. However, research suggests that a driver's brake application may not take full advantage of the vehicle's foundation braking system in cases where the driver is inattentive, receives an FCW, and re-engages in the driving task prior to automatic braking (i.e., CIB) taking place. In situations where the driver's braking is insufficient to prevent a collision, DBS can automatically supplement the driver's braking action to prevent or mitigate the crash.<sup>48</sup> The NCAP DBS performance evaluations

*active safety and advanced headlighting systems*, The University of Michigan Transportation Research Institute and General Motors LLC, UMTRI-2019-6.

<sup>45</sup>The AEB systems studied by UMTRI consisted of camera-only, radar-only, and fused camera-radar AEB systems, the latter two systems of which also included adaptive cruise control functionality.

<sup>46</sup>Consumer Reports, (2019, November), *Consumer Perceptions of ADAS*, <https://data.consumerreports.org/reports/consumer-perceptions-of-adas/>.

<sup>47</sup>Docket No. NHTSA-2021-0002. 87 FR 13452. March 9, 2022.

<sup>48</sup>DBS systems differ from traditional brake assist systems used with the vehicle's foundation brakes. Whereas both systems rely on brake pedal application rate to determine whether supplemental braking is required, DBS has a lower activation threshold since it also uses information from forward-looking sensors to verify that more braking is needed.

serve to ensure that the vehicle's supplemental braking is sufficient to augment the driver's manual brake application and avoid a collision with the lead vehicle in the tested driving situations. DBS testing also endeavors to ensure that a vehicle's automatic brake application (i.e., CIB) is not suppressed in the event of a driver's manual brake application.

### NCAP's Current Dynamic Brake Support Test Procedure

NCAP's current DBS test procedure<sup>49</sup> consists of the same three rear-end pre-crash scenarios specified in the FCW system performance test procedure: LVS, LVD, and LVM. However, most of the test speed combinations specified in the DBS test procedure differ. The single exception is that the FCW and DBS test procedures both use an LVM test performed with SV and POV speeds of 72.4 and 32.2 kph (45 and 20 mph), respectively. The DBS performance assessment also includes a Steel Trench Plate (STP) false positive suppression test conducted at two test speeds. The false positive suppression test series evaluates the ability of a DBS system to differentiate a steel trench plate, often found on roadways, from an object presenting a genuine safety risk to the SV. Although STPs are large and metallic, they are designed to be driven over without risk of injury to drivers or vehicles. This fourth test scenario is used to evaluate the propensity of a vehicle's DBS system to activate inappropriately in this non-critical driving scenario that would not present a safety risk to the vehicle's occupants.

Like NCAP's FCW tests, the vehicle subjected to the DBS test scenarios is termed the SV. However, unlike NCAP's FCW tests, the DBS test procedure uses a surrogate vehicle (i.e., a realistic looking artificial vehicle) as the POV instead of an actual vehicle to limit the potential for damage to the SV and/or the test equipment in the event of a collision. Additionally, instead of driver- (human-) based inputs, like those required in NCAP's FCW tests, a programmable (robotic) brake controller is used to provide all SV brake pedal applications made during the DBS system performance evaluations.

The Strikeable Surrogate Vehicle (SSV) is the surrogate vehicle presently used as the POV by NCAP for the Agency's DBS testing. The SSV, developed by NHTSA for the purpose of

<sup>49</sup>National Highway Traffic Safety Administration (2015, October), *Dynamic brake support performance evaluation confirmation test for the New Car Assessment Program*, <http://www.regulations.gov>, Docket No. NHTSA-2015-0006-0026.

track testing, appears as a "real" vehicle to the camera, radar, and lidar sensors used by existing AEB systems. The SSV system is comprised of (a) a shell,<sup>50</sup> which is a visually and dimensionally accurate representation of a compact passenger car; (b) a slider and load frame assembly to which the shell is attached, (c) a two-rail track on which the slider operates, (d) a road-based lateral restraint track, and (e) a tow vehicle, which pulls the SSV and its peripherals down the test track during the test where the POV (i.e., SSV) must be in motion.

For the three test scenarios where braking is expected, the SV must provide enough supplemental braking to completely avoid contact with the SSV (i.e., POV) to pass a trial run. In the case of the DBS false positive test scenario, the performance criterion is minimal to no activation for both test speeds.<sup>51</sup> A short description of each DBS system performance test scenario, and the requirements for a passing result, is provided below:

- Lead Vehicle Stopped (LVS)—The SV encounters a stopped POV directly in front of it on a straight road. The SV is moving at 40.2 kph (25 mph) and the POV is stationary. The SV throttle is released within 500 ms after the SV issues an FCW, and the SV brake pedal is manually applied at a TTC of 1.1 s (i.e., at a nominal headway of 12.2 m (40 ft.)). To pass this test, the SV must not contact the POV. See Figure 1 for a scenario diagram.

- Lead Vehicle Decelerating (LVD)—The SV encounters a POV slowing with constant deceleration directly in front of it on a straight road. The SV and POV are both driven at 56.3 kph (35 mph) with an initial headway of 13.8 m (45.3 ft.). The POV brakes are then applied to achieve a constant deceleration of 0.3g in front of the SV. The SV throttle is released within 500 ms after the SV issues an FCW, and the SV brake pedal

<sup>50</sup>The shell is constructed from lightweight composite materials with favorable strength-to-weight characteristics, including carbon fiber, Kevlar®, phenolic, and Nomex honeycomb. It is also wrapped with a commercially available vinyl material to simulate paint on the body panels, rear bumper, and a tinted glass rear window. A foam bumper having a neoprene cover is attached to the rear of the SSV to reduce the peak forces realized immediately after an impact from a test vehicle occurs.

<sup>51</sup>Minimal activation is defined as a peak SV deceleration attributable to DBS intervention that is less than or equal to 1.5 times the average of the deceleration recorded for the vehicle's foundation brake system alone during its approach to the STP. The 1.5 multiplier serves to provide some system flexibility, meaning a mild DBS intervention is acceptable, but one where the vehicle thinks it must respond to the STP as if it was a real vehicle is not.

<sup>52</sup>Note that the March 2022 notice specified a multiplier of 1.25. This specification was in error.

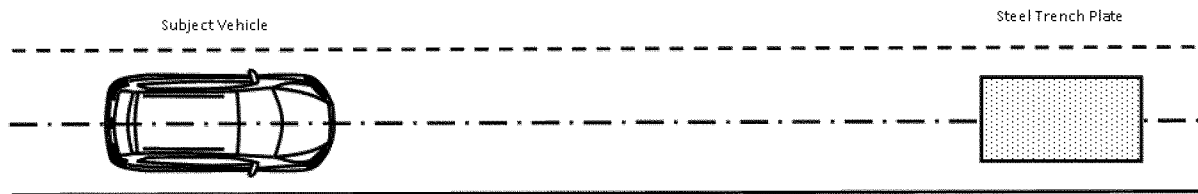
is manually applied at a TTC of 1.4 s (*i.e.*, at a nominal headway of 9.6 m (31.5 ft.)). To pass this test, the SV must not contact the POV. See Figure 2 for a scenario diagram.

- **Lead Vehicle Moving (LVM)**—The SV encounters a slower-moving POV directly in front of it on a straight road. In the first test, the SV and POV are driven on a straight road at a constant speed of 40.2 kph (25 mph) and 16.1 kph (10 mph), respectively. In the second test, the SV and POV are driven at a constant speed of 72.4 kph (45 mph) and 32.2 kph (20 mph), respectively. In

both tests, the SV throttle is released within 500 ms after the SV issues an FCW, and the SV brake pedal is manually applied at a TTC of 1 s (*i.e.*, at a nominal headway of 6.7 m (22 ft.) in the first test, and 11.3 m (37 ft.) in the second test). To pass these tests, the SV must not contact the POV. See Figure 3 for a scenario diagram.

- **Steel Trench Plate (STP) false positive suppression test**—The SV is driven over a 2.4 m × 3.7 m × 25.4 mm (8 ft. × 12 ft. × 1 in.) steel trench plate at 40.2 kph (25 mph) and 72.4 kph (45 mph). If an FCW is issued, the SV

throttle is released within 500 ms of the alert. If no FCW is issued by a TTC of 2.1 s, the SV throttle is released within 500 ms of a TTC of 2.1 s. In both instances, the SV brakes are applied at a TTC of 1.1 s (*i.e.*, at a nominal distance of 12.3 m (40 ft.) from the edge of the STP at 40.2 kph (25 mph), or 22.3 m (73 ft.) at 72.4 kph (45 mph)). To pass this test, the performance criterion is minimal to no activation, as defined previously. See Figure 4 (below) for a scenario diagram.



**Figure 4: Steel Trench Plate (STP) False Positive Scenario**

Currently, to pass NCAP's DBS system performance criteria, the SV must pass at least five out of seven trials for each of the six test conditions.

## 2. Crash Imminent Braking (CIB)

If a driver does not manually apply the vehicle's brakes when a rear-end crash is imminent, CIB systems, using the same forward-looking sensors as DBS systems, apply the vehicle's brakes automatically to slow or stop the vehicle. Unlike DBS systems, which provide additional braking to supplement the driver's brake input, CIB systems activate when the driver has not applied the brake pedal.

### NCAP's Current Crash Imminent Braking (CIB) Test Procedure

The Agency's current CIB test procedure<sup>53</sup> is comprised of the same four test scenarios (LVS, LVD, LVM, and the STP false positive suppression test) and test speeds specified in the DBS test procedure. However, the performance criteria vary slightly. Whereas collision avoidance is the performance requirement stipulated for all DBS test scenarios except the false positive scenario, only the LVM 40.2 kph/16.1 kph (25 mph/10 mph) CIB test condition requires that the SV not contact the POV. The LVS, LVD, and the LVM 72.4

kph/32.2 kph (45 mph/20 mph) test conditions permit SV-to-POV contact but require minimum SV speed reductions prior to the contact being made. For the CIB false positive tests, the performance criterion is little-to-no activation, like the comparable DBS tests. Also, like NCAP's DBS tests, the SSV is the POV presently used in the program's CIB testing. A short description of each test scenario and the requirements for a passing result are provided below:

- **LVS**—The SV encounters a stopped POV directly in front of it on a straight road. The SV is moving at 40.2 kph (25 mph) and the POV (*i.e.*, the SSV) is stationary. The SV throttle is released within 500 ms after the SV issues an FCW. To pass this test, the SV speed reduction attributable to CIB intervention must be  $\geq 15.8$  kph (9.8 mph). See Figure 1 for a scenario diagram.

- **LVD**—The SV encounters a POV slowing with constant deceleration directly in front of it on a straight road. The SV and POV are both driven at 56.3 kph (35 mph) with an initial headway of 13.8 m (45.3 ft.). The POV then decelerates, braking at a constant deceleration of 0.3g in front of the SV, after which the SV throttle is released within 500 ms after the SV issues an FCW. To pass this test, the SV speed reduction attributable to CIB intervention must be  $\geq 16.9$  kph (10.5 mph). See Figure 2 for a scenario diagram.

- **LVM**—The SV encounters a slower-moving POV directly in front of it on a straight road. In the first test, the SV and POV are driven on a straight road at a constant speed of 40.2 kph (25 mph) and 16.1 kph (10 mph), respectively. In the second test, the SV and POV are driven at a constant speed of 72.4 kph (45 mph) and 32.2 kph (20 mph), respectively. In both tests, the SV throttle is released within 500 ms after the SV issues an FCW. To pass the first test, the SV must not contact the POV. To pass the second test, the SV speed reduction attributable to CIB intervention must be  $\geq 15.8$  kph (9.8 mph). See Figure 3 for a scenario diagram.

- **STP test (to assess false positive suppression)**—The SV is driven towards a steel trench plate at 40.2 kph (25 mph) in one test and 72.4 kph (45 mph) in the other test. If an FCW is issued, the SV throttle is released within 500 ms of the alert. If no FCW is issued, the throttle is not released until the test's validity period (the time when all test specifications and tolerances must be satisfied) has passed. To pass these tests, the SV must not achieve a peak deceleration equal to or greater than 0.5g at any time during its approach to the steel trench plate. See Figure 4 for a scenario diagram.

To pass NCAP's CIB system performance criteria, the SV must pass at least five out of seven trials for each of the six test conditions.

<sup>53</sup> National Highway Traffic Safety Administration. (2015, October). *Crash imminent brake system performance evaluation for the New Car Assessment Program*. <http://www.regulations.gov>. Docket No. NHTSA-2015-0006-0025.

### C. Linking Current FCW and AEB Test Scenarios With Real-World Crashes

NCAP's FCW and AEB test scenarios are directly related to real-world crash data. From its analysis of 2011 to 2015 Fatality Analysis Reporting System (FARS) and National Automotive Sampling System General Estimate System (GES) data, the Agency found that crashes analogous to the LVS test scenario, where a struck vehicle was stopped at the time of impact, occurred in 65 percent of the rear-end crashes studied.<sup>54,55</sup> The LVD scenario, in which the struck vehicle was decelerating at the time of impact, occurred in 22 percent of the rear-end crashes, and the LVM scenario, in which the struck vehicle was moving at a constant, but slower, speed compared to the striking vehicle at impact, occurred in 10 percent of the rear-end crashes. Collectively, these test scenarios represented 97 percent of rear-end crashes.

With respect to test speed, in its independent review of the 2011–2015 FARS and GES data sets, the John A. Volpe National Transportation Systems Center (Volpe) concluded that, when posted speed limit was known, 2 percent of fatal rear-end crashes and 6 percent of all rear-end crashes occurred on roadways with posted speed limits of 40.2 kph (25 mph) or less.<sup>56,57,58</sup> Eleven percent of fatal rear-end crashes and 33 percent of all rear-end crashes where posted speed limit was known occurred on roads with posted speeds of 56.3 kph (35 mph) or less. For posted speeds of 72.4 kph (45 mph) or less, Volpe found

the comparable statistics to be 29 percent and 70 percent, respectively.

Roadway alignment and grade for the current FCW and AEB test scenarios are also comparable to those found where real-world rear-end crashes occur. NHTSA's LVS, LVD, and LVM procedures are to be performed on straight, level roads. In its review of 2011–2015 FARS and GES data sets, for rear-end crashes where roadway alignment was known, Volpe found that 95 percent of both fatal and injurious crashes occurred on a straight roadway.<sup>59</sup> For rear-end crashes where roadway grade was known, 77 percent of fatal crashes and 84 percent of crashes with injuries occurred on level roads.<sup>60</sup>

#### 1. AEB Installation Rates, Effectiveness, and Research Tests

##### a. AEB Installation Rates

When NHTSA's CIB test scenarios were developed, relatively few vehicles were equipped with this technology; those that were equipped had systems with limited capabilities. Since then, fitment rates for CIB systems have increased significantly due in part to a voluntary industry commitment made in March 2016.<sup>61</sup> Per this commitment, 20 vehicle manufacturers, representing more than 99 percent of light motor vehicle sales in the U.S., voluntarily committed to make FCW and CIB standard on virtually all light-duty vehicles with a gross vehicle weight rating (GVWR) of 3,855.5 kg (8,500 pounds) or less beginning no later than September 1, 2022, and all trucks with a GVWR between 3,856.0 and 4,535.9 kg (8,501 and 10,000 pounds) beginning no later than September 1, 2025.<sup>62</sup>

Conforming vehicles were required to be equipped with (1) an AEB system that earned at least an "advanced" rating from IIHS in its then-current front crash prevention track LVS tests and (2) an FCW system that met the performance requirements specified in two of NCAP's current three FCW test

scenarios, LVD and LVM.<sup>63</sup> By 2019, participating manufacturers had equipped 75 percent of their new vehicle fleet with AEB,<sup>64</sup> and for model year 2023 vehicles, approximately 91 percent of the fleet was equipped with FCW and AEB systems as standard equipment.

As fitment increased, the sensor technology for CIB systems also advanced significantly. In 2017, many systems were not designed to meet the voluntary commitment thresholds, whereas by 2021, most vehicles with FCW and CIB systems could pass all relevant NCAP test scenarios, most of which are more stringent than those included in the voluntary agreement.<sup>65</sup> In its RFC, NHTSA noted that the original equipment manufacturer (OEM)-reported pass rate for NCAP's FCW and CIB tests for model year 2021 vehicles<sup>66</sup> equipped with these technologies, and for which manufacturers submitted data, was 89 percent and 70 percent, respectively.<sup>67</sup> Furthermore, NHTSA mentioned that only 63 percent of model year 2017 vehicles avoided contacting the POV for at least five out of seven of the required runs in the LVS CIB scenario during the Agency's testing, whereas 100 percent of model year 2021 vehicles were able to repeatedly avoid contact when tested.<sup>68</sup> It should be noted that a speed reduction of 15.8 kph (9.8 mph) for at least five out of seven trial runs is currently required to pass NCAP's CIB LVS test, not complete crash avoidance. For the model year 2023 vehicle fleet, the OEM-reported pass rate for the Agency's FCW test was 98 percent of equipped vehicles, and 86 percent for

<sup>54</sup> Wang, J.-S. (2019, March), *Target crash population for crash avoidance technologies in passenger vehicles* (Report No. DOT HS 812 653), Washington, DC: National Highway Traffic Safety Administration.

<sup>55</sup> NHTSA notes that the target crash populations reported for the LVS, LVD, and LVM scenarios encompass all related real-world rear-end crashes (where the light vehicle is making a critical action) that could potentially be addressed by a DBS system. As such, the target crash populations for each crash scenario reflect crashes exhibiting variations in vehicle overlap, roadway curvature, environmental conditions, etc.; target crash populations were not reduced to align exactly with those represented by NCAP's LVS, LVD, and LVM test scenarios.

<sup>56</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>57</sup> NHTSA notes that throughout this notice, all crash statistics cited from Report No. DOT HS 812 745 encompass those where the light vehicle made the critical action (e.g., losing control, departing road, changing lanes, striking, maneuvering, etc.).

<sup>58</sup> For rear-end crashes, posted speed limit was unknown or not reported for 2 percent of fatal crashes and 11 percent of injurious crashes.

<sup>59</sup> For rear-end crashes, roadway alignment was unknown or not reported for 1 percent of fatal crashes and 3 percent of injurious crashes.

<sup>60</sup> For rear-end crashes, roadway grade was unknown or not reported for 4 percent of fatal crashes and 18 percent of injurious crashes.

<sup>61</sup> The Agency also asserts that its recommendation of AEB systems (i.e., CIB and DBS) that meet NCAP performance criteria on its website since the 2018 model year has further encouraged adoption of these technologies.

<sup>62</sup> Insurance Institute for Highway Safety (2016, March 17), *U.S. DOT and IIHS announce historic commitment of 20 automakers to make automatic emergency braking standard on new vehicles*, <https://www.iihs.org/news/detail/u-s-dot-and-iihs-announce-historic-commitment-of-20-automakers-to-make-automatic-emergency-braking-standard-on-new-vehicles>.

<sup>63</sup> To achieve an advanced rating in IIHS' front crash prevention track tests, a vehicle's AEB system must show a speed reduction of at least 16.1 kph (10 mph) in either IIHS's 19.3 or 40.2 kph (12 or 25 mph) tests, or a speed reduction of 8.0 kph (5 mph) in both tests. <https://www.iihs.org/news/detail/u-s-dot-and-iihs-announce-historic-commitment-of-20-automakers-to-make-automatic-emergency-braking-standard-on-new-vehicles>.

<sup>64</sup> National Highway Traffic Safety Administration (2019, December 17), *NHTSA announces update to historic AEB commitment by 20 automakers*, <https://www.nhtsa.gov/press-releases/nhtsa-announces-update-historic-aeb-commitment-20-automakers>.

<sup>65</sup> NCAP's CIB test protocol requires a speed reduction of at least 15.8 kph (9.8 mph) in the program's 40 kph (24.9 mph) LVS test. However, the voluntary commitment allows a vehicle to comply with the memorandum for a speed reduction of 8.0 kph (5 mph) in IIHS's 19.3 and 40.2 kph (12 and 25 mph) LVS tests.

<sup>66</sup> In this instance, "vehicles" refers to the total number of vehicles in the 2021 fleet, and not the total number of vehicle models for that year.

<sup>67</sup> These values assume a 50 percent take rate for vehicles having optional equipment.

<sup>68</sup> No contact was assumed if the test vehicle did not contact the POV in five or more of the seven required trial runs.

the CIB test. In the Agency's model year 2023 CIB testing, all vehicles avoided contacting the POV test device for at least five out of seven runs, and thus received credit for passing performance. For the FCW assessments, only one vehicle model failed to provide a passing performance for the LVS and LVD scenarios.

#### b. Model Year 2019 and 2020 Research Testing

As NHTSA noted in its March 2022 RFC, research testing conducted for a sample of model year 2019 and 2020 vehicles from various manufacturers also confirmed advancement of CIB system capabilities in recent years. The goal of this testing was to characterize the performance of then-current CIB systems and evaluate the technology's future potential for the new model years' vehicle fleet. For this purpose, the Agency chose to focus testing on NCAP's LVS and LVD test scenarios, as its review of the 2011–2015 FARS and GES rear-end crash data sets showed that LVS and LVD rear-end scenarios resulted in the highest number of crashes and MAIS 1–5 injuries.<sup>69</sup> NHTSA conducted testing for each scenario in accordance with NCAP's current CIB test procedure. These tests were then repeated using an ABD GVT as the surrogate vehicle in lieu of the SSV to verify that little to no change in performance would result.<sup>70</sup> The Agency also performed additional tests for each scenario using the GVT to assess how specific procedural changes (*i.e.*, increases in test speed and POV deceleration magnitude) affected CIB system performance.<sup>71</sup>

For the additional LVS tests, the Agency incrementally increased the vehicle speed from 40.2 to 72.4 kph (25 to 45 mph) in 8.0 kph (5 mph) increments to identify when or if the vehicle reached its operational limits and/or did not react to the POV ahead. When the vehicle's intervention was insufficient (*i.e.*, the SV's maximum (peak) deceleration was less than 0.5g),

<sup>69</sup> Per Wang, J.-S. (2019, March), *Target crash population for crash avoidance technologies in passenger vehicles* (Report No. DOT HS 812 653), Washington, DC: National Highway Traffic Safety Administration, there were 1,099,868 LVS, 374,624 LVD, and 174,217 LVM crashes annually. Furthermore, there were 561,842 MAIS 1–5 injuries resulting from the LVS crash scenario, 196,731 for LVD, and 97,402 for LVM. The LVS scenario also had the second highest number of fatalities.

<sup>70</sup> The Agency desired to use the GVT in lieu of the SSV for its higher speed testing because, given its material properties, the GVT significantly reduced the potential for damage to the testing equipment and test vehicles.

<sup>71</sup> Test reports related to NHTSA's CIB characterization testing can be found in the docket for the March 2022 RFC notice.

the Agency repeated the test scenario at a test speed that was 4.0 kph (2.5 mph) lower. This reduced speed was used to define the system's upper capabilities for the LVS scenario.

For the additional LVD tests, the Agency evaluated how changes made to either the SV and POV speed (72.4 kph versus 56.3 kph (45 mph versus 35 mph)) or POV deceleration magnitude (0.5g versus 0.3g) affected CIB performance. No changes were made to the SV-to-POV headway; it was retained at 13.8 m (45.3 ft.).

The Agency chose to increase the test speeds for the scenarios included in its CIB characterization study because, in its independent analysis of the 2011–2015 FARS data set, Volpe found that, when the posted speed limit was known, approximately 29 percent of fatalities and 70 percent of injuries in rear-end crashes occurred when the posted speed on roadways was 72.4 kph (45 mph) or less.<sup>72</sup> The additional change to increase the POV deceleration in the LVD scenario was intended to create a more stringent test to address situations where the driver of a lead vehicle brakes aggressively, causing the driver of the following vehicle to have even less time to avoid or mitigate the crash than had the lead vehicle braking been at the 0.3g level presently specified in the Agency's test procedure. Based on previous Agency research, when drivers need to apply the brakes in a non-emergency situation, they do so by decelerating up to approximately 0.306g, while drivers encountering an unexpected obstacle apply the brakes at 0.48g.<sup>73</sup> Further, NHTSA noted that a deceleration of 0.5g falls within the range of deceleration magnitudes prescribed by Euro NCAP in its AEB Car-to-Car systems test protocol, Version 3.0.3, dated April 2021 for the Car-to-Car rear braking CCRb scenario. In its CCRb test, Euro NCAP specifies POV deceleration magnitudes of 2 m/s<sup>2</sup> and 6 m/s<sup>2</sup> (approximately 0.2 to 0.6 g) for an SV-to-POV headway of 12 m (39.4 ft.) and SV test speed of 50 kph (31.1 mph).

The Agency's characterization testing showed that many vehicles were able to repeatedly provide complete crash avoidance at higher test speeds and

<sup>72</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>73</sup> Gregory M. Fitch, Myra Blanco, Justin F. Morgan, Jeanne C. Rice, Amy Wharton, Walter W. Wierwille, and Richard J. Hanowski (2010, April) Human Performance Evaluation of Light Vehicle Brake Assist Systems: Final Report (Report No. DOT HS 811 251) Washington, DC: National Highway Traffic Safety Administration, p. 13 and p. 101.

generally more aggressive conditions than those specified in NCAP's current CIB test procedure. For the 56.3 kph (35.0 mph) LVS tests conducted with a POV deceleration of 0.3g, seven out of the eleven vehicles avoided contact with the lead vehicle in every test trial. One of the remaining vehicles avoided contact in six out of seven test trials and the other three vehicles demonstrated an average speed reduction that exceeded 30.6 kph (19 mph). For the 72.4 kph (45.0 mph) LVS tests conducted with a POV deceleration of 0.3g, four out of the eleven vehicles avoided contact in every test trial and two other vehicles avoided contact in all but one test trial. Three of the remaining vehicles avoided contact in one or two test trials, while the two other vehicles could not avoid contact but both demonstrated an average 21 kph (13 mph) speed reduction. For the 56.3 kph (35.0 mph) LVD tests conducted at 0.5g rather than 0.3g, as specified in NCAP's current CIB test procedure, eight vehicles demonstrated the ability to avoid contact with the lead vehicle in at least one trial and three vehicles avoided contact in all trials, despite having less time to avoid the crash.<sup>74</sup> Similarly, when the speed of the SV and lead vehicle was increased to 72.4 kph (45 mph), nine vehicles demonstrated the ability to avoid contact with the lead vehicle in at least one test while four vehicles avoided contact in all tests. One vehicle avoided contact in all lead vehicle decelerating trials, including both increased speeds and increased lead vehicle deceleration.

Given these findings, the Agency concluded that current CIB systems are capable of significantly exceeding NCAP's current testing requirements. Thus, it is feasible to update the program's CIB test conditions to further safety improvements and address a greater number of rear-end crashes, particularly those which cause a greater number of injuries and fatalities in the real world.

#### c. AEB Effectiveness

In its March 2022 RFC notice, NHTSA discussed findings from several studies suggesting that AEB systems (*i.e.*, CIB and DBS) have collectively been effective in reducing rear-end crashes. As noted in the introductory section, UMTRI<sup>75</sup> found that AEB systems

<sup>74</sup> Two vehicles avoided contact with the POV in four out of five trials.

<sup>75</sup> Leslie, A.J., Kiefer, R.J., Meitzner, M.R., & Flannagan, C.A. (2019, September), *Analysis of the field effectiveness of General Motors production active safety and advanced headlighting systems*, The University of Michigan Transportation

produced an estimated 46 percent reduction in applicable rear-end crashes when combined with a forward collision alert, which alone showed only a 21 percent reduction.<sup>76</sup> Similarly, in a 2017 study, IIHS found that rear-end collisions decreased by 50 percent for vehicles equipped with AEB and FCW.<sup>77</sup> Furthermore, a 2019 study conducted by IIHS<sup>78</sup> suggested that the increasing effectiveness of AEB technology in certain crash situations, particularly those evaluated by NCAP and other consumer information programs, is changing the rear-end crash problem.

While these studies suggest that AEB systems (*i.e.*, CIB and DBS) have collectively been effective in reducing rear-end crashes, NHTSA stated in its March 2022 notice that it was not clear how effective each of these systems is independently, or whether their individual effectiveness may change for certain crash scenarios, environmental conditions, or driver factors (*e.g.*, poor judgement, distraction, etc.). The Agency also stated it is not aware of any studies of current-generation AEB systems that have determined the extent to which CIB and DBS individually contribute to crash reduction. Since NHTSA could not differentiate between the individual effectiveness of CIB and DBS systems, it tentatively concluded that NCAP should continue to assess CIB and DBS system performance

individually and therefore retain DBS assessments. NHTSA explained that this approach would ensure vehicles would not suppress AEB operation in situations where the driver applies the vehicle’s foundation brakes.<sup>79</sup> However, as discussed later, the Agency also sought comment on removing the DBS test conditions from NCAP entirely in an effort to reduce test burden.

The Agency did not perform DBS testing as part of its characterization study to evaluate system performance capabilities beyond what is currently required in NCAP’s respective test procedure. However, DBS systems have historically been shown to impart additional braking beyond that afforded by CIB systems. NHTSA has observed complete crash avoidance in DBS tests but only speed reduction in the equivalent CIB tests conducted for the same vehicle models. Therefore, it was expected that DBS performance should typically be as good as, if not better than, CIB performance. NHTSA believed that it was fitting to align the proposed CIB and DBS evaluations for the assessed situations, since doing so would allow the Agency to evaluate whether a vehicle’s DBS system would provide sufficient supplemental braking if the driver brakes but additional braking is warranted. To verify that equivalent performance requirements and criteria proposed for CIB would also be appropriate for DBS, NHTSA

planned research tests for model year 2021 and 2022 vehicles.

d. Model Year 2021 and 2022 Research Testing

In accordance with its plans expressed in the March 2022 RFC, NHTSA conducted a series of AEB research tests in 2022 to further analyze current fleet performance.<sup>80</sup> This testing, which involved 12 model year 2021 and 2022 light vehicles, included CIB and DBS testing in a variety of CIB and DBS test conditions. The goal of this research was to evaluate NHTSA’s AEB proposals (found in subsequent sections) and to gain further knowledge regarding the capabilities of the current vehicle fleet.

Both CIB and DBS tests were conducted in the LVS, LVM, LVD, and STP false positive scenarios. Additionally, NHTSA conducted two other false positive test scenarios as part of this research: a “Pass Through” test, in which the SV approaches two stationary lead vehicles located to the left and right of the SV forward path, and “Pass Through + STP” test, which is a combination of the STP and Pass Through scenarios.<sup>81</sup> See Table 11 for the nominal test parameters used in this series of research tests. The ABD GVT Revision G, secured to a GST robotic platform (or carrier), was used as the POV for the model year 2021 and 2022 research testing.

TABLE 11—NOMINAL TEST PARAMETERS FOR MODEL YEAR 2021 AND 2022 RESEARCH TESTING

Test scenario	Test speeds (kph (mph))		Headway (m (ft.))	POV decel. (g)	CIB	DBS
	SV	POV				
Lead Vehicle Stopped (LVS) .....	10, 40, 50, 60, 70, 80 (6.2, 24.9, 31.1, 37.3, 43.5, 49.7).	0	.....	.....	✓	.....
	70, 80, 90, 100 (43.5, 49.7, 55.9, 62.1).	0	.....	.....	.....	✓
Lead Vehicle Moving (LVM) .....	40, 50, 60, 70, 80 (24.9, 31.1, 37.3, 43.5, 49.7).	20 (12.4)	.....	.....	✓	.....
	70, 80, 90, 100 (43.5, 49.7, 55.9, 62.1).	20 (12.4)	.....	.....	.....	✓
Lead Vehicle Decelerating (LVD) .....	50 (31.1) .....	50 (31.1)	12, 40 (39.4, 131.2)	0.4, 0.5	✓	✓
	80 (49.7) .....	80 (49.7)	12, 40 (39.4, 131.2)	0.4, 0.5	✓	✓
Steel Trench Plate (STP) .....	80 (49.7) .....	.....	.....	.....	✓	✓
Pass Through .....	80 (49.7) .....	0	.....	.....	✓	✓
Pass Through + Steel Trench Plate ...	80 (49.7) .....	0	.....	.....	✓	✓

For the LVS and LVM test series, SV speed was increased from lowest to

highest. One initial trial was conducted per test speed. If no SV-to-POV contact

was observed, the next highest SV speed was run. However, if SV-to-POV contact

Research Institute and General Motors LLC, UMTRI–2019–6.

<sup>76</sup> The AEB systems studied by UMTRI consisted of camera-only, radar-only, and fused camera-radar AEB systems, the latter two systems of which also included adaptive cruise control functionality.

<sup>77</sup> Cicchino, J.B. (2017, February), Effectiveness of forward collision warning and autonomous emergency braking systems in reducing front-to-rear crash rates, *Accident Analysis and Prevention*, 2017

Feb;99(Pt A):142–152, <https://doi.org/10.1016/j.aap.2016.11.009>.

<sup>78</sup> Cicchino, J.B. & Zuby, D.S. (2019, August), Characteristics of rear-end crashes involving passenger vehicles with automatic emergency braking, *Traffic Injury Prevention*, 2019, VOL. 20, NO. S1, S112–S118 <https://doi.org/10.1080/15389588.2019.1576172>.

<sup>79</sup> Foundation brake system means all components of the service braking system of a motor vehicle intended for the transfer of braking

application force from the operator to the wheels of a vehicle. See 49 CFR 579.4.

<sup>80</sup> <https://www.regulations.gov/document/NHTSA-2023-0021-0005>.

<sup>81</sup> In the Pass Through + STP test, the SV approaches a large steel plate positioned longitudinally on the test surface in the forward path of the SV. Two stationary lead vehicles are located to the left and right of the STP in the SV forward path. The SV is driven over the STP, between the two lead vehicles.



occurred and the SV speed at the time of impact was less than or equal to 50 percent of the initial SV speed, up to four additional (repeated) trials were performed at the same SV speed. If two additional SV-to-POV impacts were observed during the repeat sequence, the test series was terminated. Furthermore, if the SV speed at the time of impact was greater than 50 percent of the initial SV speed during the initial trial, no repeat runs were performed; testing for that scenario was terminated. For the LVD test series, testing proceeded in a similar manner. The SV speed was increased from lowest to highest, and POV deceleration was iteratively increased from 0.4g to 0.5g for a given speed combination and headway. Relevant outcomes of this research are detailed throughout the applicable sections of this notice.

*D. NHTSA’s Proposals, Summary of Comments, Response to Comments, and Agency Decisions*

1. AEB

a. Forward Collision Prevention Technologies Inclusion in General

Many commenters, including the NTSB, Bosch, HMNA, and NADA, expressed support for the Agency’s proposed updates for NCAP’s AEB

testing. Additional proponents, such as the Advocates and QuantivRisk, Inc., cited the need for increased test stringency to realize additional safety benefits. In this vein, NTSB specifically asked NHTSA to “strive for the performance we want the systems to be able to reach, not merely evaluate the current capabilities of the systems.” Auto Innovators expressed a need for consistency between changes to NCAP and those planned for AEB standards. Other respondents, such as MEMA, appreciated the Agency’s attempts to focus resources on emerging trends and harmonize its AEB test procedures with those used by European New Car Assessment Programme (Euro NCAP) and other consumer information programs. Toyota also supported the Agency’s attempts at shared global assessments but recommended that NHTSA select (1) tests that can adequately ensure performance across a range of conditions to improve overall test efficiency and (2) performance criteria that reflect real-world benefits. Citing rising fatalities, several commenters requested that the Agency consider AEB test additions for cyclists and motorcyclists, while others mentioned current AEB system limitations, such as systems’ inability to

detect cyclists and other vulnerable road users (VRUs) at higher speeds and in low light and inclement weather.

b. AEB Test Procedure Changes, Including Higher Speeds and POV Deceleration Magnitude for LVD Test; and Removal of DBS Tests and Only High-Speed DBS Assessments

NHTSA proposed harmonizing many aspects of changes to NCAP’s CIB and DBS procedures with Euro NCAP’s AEB Car-to-Car systems test protocol. The Agency reasoned this approach was most appropriate based on requirements of the BIL. The Agency also argued that it would be beneficial to standardize the current AEB test specifications with other consumer information programs, as doing so would allow the Agency and vehicle manufacturers to focus resources on emerging trends for rear-end crashes as AEB-equipped vehicles become more abundant in the fleet.<sup>82</sup> NHTSA also noted it would consider making additional updates to its AEB test evaluation as the rear-end crash problem evolves.

The updated CIB and DBS tests proposed in the 2022 RFC are detailed below for each test scenario. Tables 12 and 13 summarize the proposed test scenarios and conditions.

TABLE 12—CIB TEST SCENARIOS AND CONDITIONS PROPOSED IN THE 2022 RFC

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
LVS .....	40 (24.9)	0	n/a	n/a	(1) No SV-to-POV contact on first trial; OR (2) Any SV-to-POV contact where the relative velocity between the SV and POV is ≤ 50% of initial SV speed AND No SV-to-POV contact in 3 out of 5 total trials.
	50 (31.1)	0	n/a	n/a	
	60 (37.3)	0	n/a	n/a	
	70 (43.5)	0	n/a	n/a	
	80 (49.7)	0	n/a	n/a	
LVM .....	40 (24.9)	20 (12.4)	n/a	n/a	
	50 (31.1)	20 (12.4)	n/a	n/a	
	60 (37.3)	20 (12.4)	n/a	n/a	
	70 (43.5)	20 (12.4)	n/a	n/a	
	80 (49.7)	20 (12.4)	n/a	n/a	
LVD* .....	50 (31.1)	50 (31.1)	12 (39.4)	0.5	
	60 (37.3)	60 (37.3)	12 (39.4)	0.5	
	70 (43.5)	70 (43.5)	12 (39.4)	0.5	
	80 (49.7)	80 (49.7)	12 (39.4)	0.5	

\* For LVD, NHTSA requested comment on whether at least five of seven trials should be required for vehicles whose contact velocity is ≤50 percent of the initial velocity, whether a 40 m headway should be included, and whether NHTSA should employ a 0.6g POV deceleration in lieu of 0.5g.

TABLE 13—DBS TEST SCENARIOS AND CONDITIONS\* PROPOSED IN THE 2022 RFC

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
LVS** .....	70 (43.5)	0	n/a	n/a	(1) No SV-to-POV contact on first trial; OR (2) Any SV-to-POV contact where the relative velocity between the SV and POV is ≤50% of initial SV speed AND No SV-to-POV contact in 3 out of 5 total trials.
	80 (49.7)	0	n/a	n/a	
LVM** .....	70 (43.5)	20 (12.4)	n/a	n/a	
	80 (49.7)	20 (12.4)	n/a	n/a	

<sup>82</sup> Cicchino, J.B., & Zuby, D.S. (2019, August), Characteristics of rear-end crashes involving

passenger vehicles with automatic emergency braking, *Traffic Injury Prevention*, 2019, VOL. 20,

NO. S1, S112–S118, <https://doi.org/10.1080/15389588.2019.1576172>.

TABLE 13—DBS TEST SCENARIOS AND CONDITIONS\* PROPOSED IN THE 2022 RFC—Continued

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
LVD*** .....	70 (43.5) 80 (49.7)	70 (43.5) 80 (49.7)	12 (39.4) 12 (39.4)	0.5 0.5	

\* For all DBS conditions, NHTSA requested comment on removal of all DBS test conditions.

\*\* For LVS and LVM, NHTSA requested comment on the additional inclusion of 40, 50, and 60 kph (24.9, 31.1, and 37.3 mph).

\*\*\* For LVD, NHTSA requested comment on the additional inclusion of 50 and/or 60 kph (31.1 and/or 37.3 mph) SV/POV speeds or only 70 and 80 kph (43.5 and 49.7 mph) (if they were adopted for CIB as well). NHTSA also requested comment on whether at least five of seven trials should be required to satisfy the performance requirement for vehicles whose relative velocity at contact is  $\leq 50$  percent of the initial SV speed, whether 40 m headway should be included, and whether NHTSA should employ 0.6g POV deceleration in lieu of 0.5g.

### Crash Imminent Braking (CIB)

#### Lead Vehicle Stopped (LVS)

Currently, NCAP's CIB LVS test is conducted at a speed of 40.2 kph (25 mph). In its upgrade proposal, the Agency recommended assessing CIB system performance over a range of test speeds for this test scenario. Specifically, NHTSA proposed a minimum SV test speed of 40 kph (24.9 mph) (similar to that currently specified in NHTSA's CIB test procedure) and a maximum SV test speed of 80 kph (49.7 mph). NHTSA also proposed increasing the SV test speed in 10 kph (6.2 mph) increments from the minimum test speed to the maximum test speed for the LVS assessment, performing one trial per speed. To achieve a passing result for each speed, NHTSA proposed that the test trial must be valid (all test specifications and tolerances satisfied), and the SV must not contact the POV. Further, the Agency proposed that it would conduct four additional trials for any specific test speed that resulted in a test failure (*i.e.*, contact) as long as the SV relative velocity at impact was less than or equal to 50 percent of the initial SV speed. For these five trials (*i.e.*, one failed trial and four additional trials), NHTSA proposed that the SV must avoid contact with the POV for at least three trials to pass the test condition (*i.e.*, combination of test scenario and test speed).

In justifying its recommendation to incorporate higher test speeds for the LVS scenario, in addition to Volpe's real-world data analysis, which illustrated the safety need, the Agency indicated its CIB characterization testing demonstrated that several vehicles repeatedly afforded full crash avoidance (*i.e.*, no contact) at speeds up to 72.4 kph (45 mph) when subjected to this test. Further, NHTSA recognized that Euro NCAP's Car-to-Car Rear stationary (CCRs) scenario, which is comparable to the Agency's LVS test, is conducted at speeds as high as 80 kph (49.7 mph) in the "AEB only" test condition. NHTSA reasoned that Euro NCAP's use of higher test speeds suggests higher test speeds are, from the perspective of test

conduct, practicable for NCAP's LVS test as well.<sup>83</sup> The Agency believed it was appropriate to harmonize with Euro NCAP on the maximum LVS test speed of 80 kph (49.7 mph), as this should better address the higher severity, high-speed crash problem and, in turn, further reduce fatalities and serious injuries. However, NHTSA did not propose to harmonize with Euro NCAP's protocol on the minimum SV test speed. Euro NCAP's CCRs scenario specifies a minimum SV speed of 10 kph (6.2 mph) for AEB systems, but the Agency stated it did not see the need to conduct its updated LVS testing at a speed less than that which is specified in its existing test procedure (40.2 kph (25 mph)). As such, a minimum test speed of 40 kph (24.9 mph) was proposed instead.

The Agency sought comment on whether the proposed speeds and overall assessment approach were appropriate for LVS or whether alternatives should be considered.

#### Lead Vehicle Moving (LVM)

As mentioned previously, NCAP's CIB test procedure currently includes two LVM test conditions: a lower speed assessment that specifies an SV speed of 40.2 kph (25 mph) and POV speed of 16.1 kph (10 mph), and a higher speed assessment that prescribes an SV speed of 72.4 kph (45 mph) and POV speed of 32.2 kph (20 mph). For this NCAP update, NHTSA proposed to assess CIB system performance over a range of SV test speeds for the LVM scenario. Similar to its proposal for the LVS scenario, NHTSA proposed to implement a "no contact" performance criterion for the LVM scenario and to increase the SV test speed for the LVM assessment in 10 kph (6.2 mph) increments from a minimum speed of 40 kph (24.9 mph) to a maximum speed of 80 kph (49.7 mph), with a POV speed of 20 kph (12.4 mph) for every SV test speed. The Agency also proposed to perform one trial run per speed and four additional trials for any specific test

speed that resulted in a test failure for initial runs where the SV had a relative velocity at impact less than or equal to 50 percent of the initial SV speed. Similar to its proposal for LVS, the Agency proposed that the SV must not contact the POV for at least three out of the five test trials performed at that same speed to pass the LVM test condition.

The Agency noted that the proposed minimum SV test speed of 40 kph (24.9 mph) is nearly equivalent to the speed currently specified for its lower speed LVM assessment, 40.2 kph (25 mph), and the proposed maximum SV test speed of 80 kph (49.7 mph) is only slightly higher than the speed specified for its higher speed LVM assessment, 72.4 kph (45 mph). Since NCAP's higher speed CIB LVM assessment (conducted at an SV speed of 72.4 kph (45 mph) and POV speed of 32.2 kph (20 mph)) showed that many vehicles were able to stop without contacting the POV test device for each of the required test trials, NHTSA believed it was reasonable to raise the SV speed in NCAP's LVM test even though it had not performed additional LVM testing as part of its characterization study. The Agency also noted that Euro NCAP performs its Car-to-Car Rear moving (CCRm) scenario (which is comparable to NCAP's LVM tests) at speeds as high as 80 kph (49.7 mph), further suggesting that higher SV test speeds are practicable.<sup>84</sup> Given this, NHTSA believed it was appropriate to harmonize with Euro NCAP on the maximum SV test speed of 80 kph (49.7 mph) for the Agency's LVM test. NHTSA reasoned that adopting a higher maximum SV test speed than that which is currently required in the Agency's CIB procedure should encourage improved CIB system performance at higher speeds, and thus further reduce fatalities and serious injuries.

Although it proposed to harmonize with Euro NCAP's protocol with respect to the maximum SV speed adopted for

<sup>83</sup> European New Car Assessment Programme (Euro NCAP) (April 2021), *Test Protocol—AEB Car-to-Car systems, Version 3.0.3*. See section 8.2.3.

<sup>84</sup> European New Car Assessment Programme (Euro NCAP) (April 2021), *Test Protocol—AEB Car-to-Car systems, Version 3.0.3*. See section 8.2.4.

its LVM test, the Agency did not suggest harmonizing with Euro NCAP with respect to the minimum required SV test speed. Euro NCAP's CCRm scenario specifies a minimum SV test speed of 30 kph (18.6 mph) for AEB-equipped vehicles; however, the Agency did not believe there was not a compelling reason to perform its updated LVM test at a speed that is less than the current required test speed (*i.e.*, 40.2 kph (25 mph)) since most vehicles have been able to meet NCAP's current LVM test requirements at 40.2 kph (25 mph) to date with a similar POV test speed. Accordingly, NHTSA proposed a minimum SV test speed of 40 kph (24.9 mph).

NHTSA proposed to adopt a POV test speed of 20 kph (12.4 mph). The Agency noted this POV speed is specified in Euro NCAP's CCRm protocol, and therefore adopting this speed for NHTSA's LVM testing seemed appropriate since it would further support harmonization efforts.

Comments were requested on whether the SV/POV speeds and assessment approach proposed for NCAP's CIB LVM tests were appropriate or whether alternative speeds or approaches should be considered instead.

#### Lead Vehicle Decelerating (LVD)

For the LVD scenario, NHTSA proposed to reduce the minimum nominal SV and POV test speeds from 56 kph (34.8 mph), as specified in NCAP's test procedure, to 50 kph (31.1 mph), as stated in Euro NCAP's AEB Car-to-Car systems test protocol, Version 3.0.3, dated April 2021 for the Car-to-Car rear braking (CCRB) scenario.<sup>85</sup> The Agency stated that, given additional changes proposed for the SV-to-POV headway and deceleration magnitude for the LVD scenario, the proposed reduction in test speed would not lead to an overall reduction in test stringency or loss of safety benefits. NHTSA requested comment on whether this proposed test speed change was appropriate for NCAP's LVD testing.

The Agency also sought comment on whether it would be appropriate to incorporate additional SV and POV test speeds for the LVD test scenario: 60, 70, and 80 kph (37.3, 43.5, and 49.7 mph, respectively). Similar to the proposed CIB LVS and LVM test scenarios, NHTSA proposed to concurrently increase the SV and POV test speeds in 10 kph (6.2 mph) increments from the minimum test speed to the maximum test speed for NCAP's LVD assessment

if multiple speeds were adopted. The Agency also proposed, as discussed in a later section, to perform one trial run per speed and four additional trials for any specific test speed that resulted in a test failure (*i.e.*, SV-to-POV contact) where the SV had a relative velocity at impact less than or equal to 50 percent of the initial SV speed. Like the other two CIB test scenarios, the Agency proposed the SV must not contact the POV for at least three out of the five test trials performed at that same speed to pass the test condition. Alternatively, the Agency sought comment on whether testing at only 50 kph (31.1 mph) and 80 kph (49.7 mph) would be acceptable.

NHTSA acknowledged in its proposal that it had not yet performed LVD testing at 80 kph (49.7 mph), mainly due to equipment and test track length limitations, as this test scenario requires that both the SV and POV be travelling at the same speed at the onset of the test validity period. However, the Agency recognized that higher speed tests may be warranted. For instance, Volpe's analysis of the 2011–2015 FARS data set showed that, when posted speed limit was known, the majority of fatal rear-end crashes (71 percent) occurred on roads with posted speeds exceeding 72.4 kph (45 mph). Considering the braking performance observed during the high-speed LVS tests conducted as part of its characterization study, the Agency noted current vehicles may perform well in LVD tests conducted at even higher speeds. Additionally, NHTSA believed that CIB systems may be able to classify POVs more confidently in the LVD test compared to the LVS test due to the POV's detected motion (*i.e.*, path history). Accordingly, NHTSA conducted research to assess vehicles' CIB system performance in the LVD test at SV and POV speeds ranging from 50 kph (31.1 mph) to 80 kph (49.7 mph) to determine the feasibility of adopting one or more of these speeds for this test scenario.<sup>86</sup>

In its March 2022 RFC notice, NHTSA also proposed to reduce the minimum nominal SV-to-POV headway of 13.8 m (45.3 ft.), currently specified for the LVD scenario, to 12 m (39.4 ft.) for the proposed test speed of 50 kph (31.1 mph). Although not assessed as part of its CIB characterization testing, the Agency asserted this change would not only harmonize with Euro NCAP's CCRb scenario with respect to test conduct, but also maintain similar stringency to NCAP's current LVD test

scenario, given the proposed test speed reduction from 56 kph (34.8 mph) to 50 kph (31.1 mph). Euro NCAP also specifies an additional SV-to-POV headway of 40 m (131.2 ft.); however, the Agency did not propose to conduct this assessment as part of the RFC, as NHTSA suggested there would not be a safety benefit in adopting 40 m (131.2 ft.) as an additional, and presumably less stringent, headway. Therefore, the Agency did not want to increase the test burden unnecessarily. However, the Agency indicated that it would assess vehicle performance at both 12 and 40 m (39.4 and 131.2 ft.) headways as part of its future research for each of the test speeds to be evaluated. The Agency also sought public comment on which SV-to-POV headway(s) may be appropriate for adoption not only for the proposed test speed (*i.e.*, 50 kph (31.1 mph)), but also for each of the additional test speeds (ranging from 60 kph (37.3 mph) to 80 kph (49.7 mph)) it planned to evaluate and possibly incorporate.

The last change the Agency proposed for the LVD test scenario was increasing the POV deceleration magnitude currently specified in its CIB test procedure from 0.3g to 0.5g. In the Agency's CIB characterization study, three vehicles repeatedly afforded full crash avoidance (*i.e.*, no contact) for all trials when the POV executed a 0.5g braking maneuver in the LVD condition with an SV test speed of 56.3 kph (35 mph) and SV-to-POV headway of 13.8 m (45.3 ft.), demonstrating that the change to POV deceleration for the revised LVD test conditions (which also includes a slightly lower test speed and slightly shorter SV-to-POV headway) is likely feasible. The Agency also noted that, in Euro NCAP's AEB Car-to-Car systems test protocol, the organization specifies POV deceleration magnitudes of 2 m/s<sup>2</sup> and 6 m/s<sup>2</sup> (approximately 0.2 and 0.6g) for its CCRb scenario.<sup>87</sup> As such, NHTSA reasoned that adopting a 0.5g POV deceleration magnitude would be practicable. To verify this assumption, as part of its research study, NHTSA committed to evaluating POV deceleration magnitudes of both 0.4 and 0.5g for the range of test speeds considered (*i.e.*, 60, 70, and/or 80 kph (37.3, 43.5, and/or 49.7 mph)) for future LVD testing.<sup>88</sup> The Agency also sought comment on what deceleration magnitude(s) would be appropriate for the proposed test speed (*i.e.*, 50 kph

<sup>85</sup> European New Car Assessment Programme (Euro NCAP) (April 2021), *Test Protocol—AEB Car-to-Car systems, Version 3.0.3*. See section 8.2.5.

<sup>86</sup> The Agency proposed these speeds would each be assessed for both 12 and 40 m (39.4 and 131.2 ft.) headways and POV deceleration magnitudes of 0.4g and 0.5g.

<sup>87</sup> European New Car Assessment Programme (Euro NCAP) (April 2021), *Test Protocol—AEB Car-to-Car systems, Version 3.0.3*. See section 8.2.5.

<sup>88</sup> NHTSA notes that the LVD research tests were conducted only for 50 and 80 kph (31.1 and 49.7 mph) test speeds.

(31.1 mph)), as well as each of these additional test speeds.

NHTSA did not propose a 0.6g POV deceleration magnitude for use in its LVD test, even though Euro NCAP specifies 0.6g as the maximum POV deceleration for its CCRb scenario. In proposing 0.5g as the maximum POV deceleration in lieu of 0.6g, the Agency stated a lower POV deceleration may reduce equipment wear, particularly for the tires and braking components of the POV propulsion system, thus improving test efficiency. Specifically, NHTSA explained it has observed instances where the tires of the low-profile robotic vehicle (LPRV) platform<sup>89</sup> used to move the GVT developed flat spots while performing a braking maneuver similar to that specified in the Agency's CIB LVD test<sup>90</sup> but with higher POV decelerations. During this testing, NHTSA also found it was more difficult to achieve and accurately control POV deceleration within prescribed tolerances when braking maneuvers higher than 0.5g were used, even with extensive LPRV tuning efforts.<sup>91</sup> The Agency noted that a deceleration of 0.6g is not only very close to the maximum braking capability of the LPRV, but also very close to the default magnitude used by the LPRV during an emergency stop (maximum deceleration). However, NHTSA acknowledged that newer robotic platforms (*i.e.*, robotic carriers) offering greater capabilities are now becoming available, and they may resolve the issues observed in the Agency's testing. Accordingly, NHTSA requested comment on whether it may now be feasible to adopt a POV deceleration magnitude of 0.6g in lieu of 0.5g, as proposed.

#### Dynamic Brake Support (DBS)

With respect to DBS, the Agency proposed to align all test conditions (*e.g.*, SV and POV test speed(s), headway(s), POV deceleration

magnitude(s), etc.) for the comparable LVD, LVM, and LVS test scenarios with those proposed for CIB. Likewise, NHTSA proposed a similar performance criterion (*i.e.*, no contact) and assessment approach as well; when applicable, speeds would be increased in 10 kph (6.2 mph) increments from the minimum test speed to the maximum test speed, with one trial performed per speed, and four additional trials conducted for any specific test speed that resulted in a test failure (*i.e.*, contact) as long as the SV had a relative velocity at impact less than or equal to 50 percent of the initial SV speed. Similar to CIB, the Agency proposed that the SV must avoid contact with the POV for at least three out of the five test trials performed at that same speed to pass the test condition (if the vehicle fails the initial trial at a given test speed).

Although the Agency had not conducted DBS testing as part of its characterization study to evaluate system performance capabilities beyond what is currently required in NCAP's DBS test procedure, NHTSA believed it was nonetheless fitting to align the proposed CIB and DBS evaluations, as it would allow NHTSA to assess whether a vehicle's DBS system will provide supplemental braking if the driver manually applies a brake pedal input but additional braking is warranted to afford crash avoidance. Further, the Agency noted its CIB and DBS test procedures are currently aligned with respect to test scenarios, test speeds, headways, etc. Differences exist only with respect to the use of manual brake application (*i.e.*, for the SV in DBS testing) and (most) performance criteria.<sup>92</sup> Therefore, the Agency reasoned it would be appropriate to adopt the CIB test conditions (*i.e.*, test speeds, headways, etc.) for the comparable DBS test conditions for future testing as well. NHTSA requested comments on whether this proposal for future DBS testing, including the assessment method, was appropriate.

The Agency also sought comment on removing the LVD, LVM, and LVS DBS test conditions from NCAP entirely (in addition to the false positive test conditions, discussed later) to reduce test burden and associated costs given findings from Volpe's analysis of the

2011–2015 FARS and GES data sets and other changes NHTSA proposed for its CIB assessments.

Specifically, Volpe found that the driver braked in just 8 percent of rear-end crashes involving fatalities and in 20 percent of those crashes involving injuries. The study also showed that the driver made no attempt to avoid the crash (*e.g.*, no braking, steering, accelerating) for 56 percent of crashes involving fatalities and for 21 percent of those involving injuries.<sup>93</sup> These findings were contrary to those documented by NHTSA during a review of 2003–2009 National Automotive Sampling System Crashworthiness Data System data to define the target population for rear-end crashes.<sup>94</sup> For that analysis, the Agency concluded that the driver braked in approximately half of the crashes and did not brake in the other half, which lends merit to performing both CIB and DBS tests. The Agency believed it was possible the brake application rates differed in the two studies because of (1) target crash population refinements made for NHTSA's original analysis and (2) differences in data collection methods between the crash databases. For instance, high-speed crashes were excluded from NHTSA's target crash population review because the AEB systems tested at the time had limited speed reduction capabilities.

As previously mentioned, NHTSA proposed to adopt a more stringent "no contact" performance criterion for each of NCAP's CIB test conditions. The Agency's existing CIB test procedure requires a specified speed reduction for each of the CIB test conditions (with the exception of the lower speed LVM condition, which requires "no contact"), whereas the DBS test procedure currently specifies "no contact" as the performance criterion for all DBS test conditions. The proposed change for CIB would effectively align the CIB performance requirements with those currently specified for DBS, and NHTSA questioned whether it was necessary to continue performing DBS tests in NCAP given public comments previously

<sup>93</sup> The Agency notes that for the rear-end pre-crash scenario group, the driver avoidance maneuver was unknown in 25 percent and 54 percent of the FARS and GES crashes, respectively. When excluding cases where a driver avoidance maneuver was unknown, the driver made no attempt to avoid the crash in 75 percent and 48 percent of the FARS and GES crashes, respectively. Likewise, when a driver's avoidance maneuver was known, the driver braked in 11 percent of FARS crashes and 45 percent of GES crashes.

<sup>94</sup> National Highway Traffic Safety Administration (2012, June). *Forward-looking advanced braking technologies research report*, <https://www.regulations.gov/document?D=NHTSA-2012-0057-0001>.

<sup>89</sup> The GVT is secured to the top of the LPRV. The LPRV is responsible for any movement of the GVT during test conduct.

<sup>90</sup> Fogle, E. E., Arquette, T. E. (TRC), and Forkenbrock, G. J. (NHTSA), (2021, May), *Traffic Jam Assist Draft Test Procedure Performability Validation* (Report No. DOT HS 812 987), Washington, DC: National Highway Traffic Safety Administration.

<sup>91</sup> From Section 4.1 of DOT HS 812 987: "POV deceleration validity check failures occurred during six trials of the eight LVDAD trials performed. Four of the seven 0.6 g failures were because the POV was unable to achieve the minimum deceleration threshold of 0.55 g. The remaining three 0.6 g failures were because the POV was unable to maintain a minimum average deceleration of at least 0.55 g." Here, LVDAD refers to "Lead Vehicle Accelerates, Decelerates, then Decelerates." The LVDAD test is a more complex variant of the LVD test and was used by NHTSA to perform traffic jam assist research.

<sup>92</sup> NHTSA's DBS test procedure currently specifies "no contact" as the performance criterion for all DBS test conditions, whereas the Agency's CIB test procedure currently requires a specified speed reduction for each of the CIB test conditions (with the exception of the lower speed LVM condition where the POV speed is 16.1 kph (10 mph) and the SV speed is 40.2 kph (25 mph), which requires "no contact."

received. For example, in its comments to NCAP's December 2015 notice, the Alliance<sup>95</sup> stated that since crash avoidance (*i.e.*, no SV-to-POV contact) is the desired outcome for all imminent rear-end crash events, if an SV avoids contact with the POV in all CIB tests, DBS testing should not be necessary. The Agency agreed with the Alliance's rationale in principle but questioned whether there would be merit to ensuring both AEB systems perform as designed and help the driver to mitigate or prevent the crash. NHTSA hypothesized that it may be possible for the driver to apply the brakes but with a magnitude that does not result in achieving the vehicle's maximum crash avoidance potential (*i.e.*, deceleration). Further, the Agency explained that, in the past, some manufacturers had assumed the driver was in control when the brake pedal was depressed, and designed CIB systems such that automatic braking was overridden by the driver's input, even when the driver's braking was insufficient to avoid a crash. Based on this reasoning, NHTSA explained it was hesitant to assume that if a vehicle's CIB system works effectively during testing, its DBS system would automatically do so as well.

Thus, as an alternative to removing the DBS performance evaluations from NCAP entirely (or retaining the LVD, LVM, and LVS DBS tests in NCAP, as proposed), the Agency concluded that it might be more reasonable to conduct only LVS and LVM DBS tests in NCAP at the highest two test speeds proposed for CIB—70 and 80 kph (43.5 and 49.7 mph, respectively)—to ensure (1) the DBS system functions properly at these speeds and (2) the SV will not suppress AEB operation when the driver applies the vehicle's foundation brakes. The Agency further noted that it would also consider conducting the DBS LVD test at only 70 and 80 kph (43.5 and 49.7 mph, respectively) if it decided to adopt those same higher test speeds for the CIB LVD test. Comments were requested on this alternative proposal and whether an alternative assessment method would be more appropriate if any or all of the DBS test scenarios were conducted only at the two highest test speeds.

<sup>95</sup> Alliance of Automobile Manufacturers (The Alliance) merged with Global Automakers in January 2020 to create the Alliance for Automotive Innovation (Auto Innovators). Both automotive industry groups separately submitted comments to the December 2015 notice.

#### Summary of Comments

##### Regarding NHTSA's AEB Proposal, In General

Several commenters, including BMW, FCA, and Honda, supported the Agency's proposal for CIB and DBS with respect to SV and POV speeds, headway distances, and POV deceleration magnitudes. FCA stated that the proposal was appropriate because it reflects current system capabilities and real-world crashes. With the exception of suggested changes for the LVD scenario, discussed later, Tesla also generally agreed with the Agency's proposal with respect to test speeds, headway, and deceleration magnitudes for CIB testing and the general intent to harmonize with Euro NCAP test protocols. Specifically, Tesla supported conducting LVS and LVM scenarios at test speeds ranging from 40 to 80 kph (24.9 and 49.7 mph) with 10 kph (6.2 mph) increments, as proposed. Auto Innovators also generally agreed with the proposed test requirements but suggested the Agency harmonize with Euro NCAP and conduct CIB testing up to 50 kph (31.1 mph) and DBS testing at speeds over 50 kph (31.1 mph).

Like Tesla, Advocates and Bosch also supported generally harmonizing the Agency's CIB testing with that performed by Euro NCAP, but with small variations. Advocates supported aligning the LVM and LVS POV and SV speeds with those used by Euro NCAP but did not support the Agency's justification for not aligning minimum test speeds for these two scenarios with those prescribed by Euro NCAP (10 kph, or 6.2 mph) as being sufficient. Bosch also mentioned harmonization with respect to test speeds but suggested the Agency should further investigate whether there is merit to increasing test speeds to assess AEB systems.

Conversely, GM opposed any change to the test conditions prescribed in the Agency's current CIB test procedure. The automaker stated that the current AEB test speeds show significant real-world safety benefits<sup>96</sup> and, as documented in DOT HS 811 521A, "Objective Tests for Automatic Crash Imminent Braking (CIB) Systems," the current test parameters are "well-supported by field crash scenarios most relevant to these features and associated with the highest societal harm, as measured by Functional Years Lost."

Other commenters suggested that the Agency remove certain test conditions. Auto Innovators suggested that the Agency remove one of the two original LVM scenarios, preferably the lower

speed condition (*i.e.*, SV and POV speeds of 40 and 16 kph (25 and 10 mph), respectively), since real-world data shows only 2 percent of fatalities and 6 percent of injuries occur on roads having posted speed limits of 40 kph (25 mph) or less. Similarly, Toyota stated that the Agency should adopt only the number of test conditions sufficient to communicate accurate performance information to consumers. The automaker suggested that, if testing only at a certain speed would ensure performance for a large speed range, then that approach was acceptable for testing.

With respect to other procedural considerations, Subaru recommended that NHTSA adopt a speed increment of 20 kph (12.4 mph) in lieu of 10 kph (6.2 mph) for LVM testing. A few other respondents also generally supported the test parameters, but suggested slight modifications, which are addressed later in this section.

##### Adopt Higher AEB Test Speeds Than Those Proposed

State Farm, IIHS, and Uhnder supported CIB and DBS testing at higher speeds, stating that such speeds better reflect real-world driving conditions. Uhnder supported adoption of test speeds that exceed 88.5 kph (55 mph), citing a May 2022 study from IIHS finding nearly 70 percent of fatal rear-end crashes occurred when the speed limit was 88.5 kph (55 mph) or higher.<sup>97</sup> Similarly, IIHS noted that nearly 80 percent of police-reported rear-end crashes occurred on roads having speed limits ranging from 48.3 to 104.6 kph (30 to 65 mph),<sup>98</sup> and the speed of the striking vehicle was more than 40 kph (24.9 mph), even on roads with speed limits of 40.2 kph (25 mph).<sup>99</sup>

Adasky, NTSB, and CAS also favored higher speed AEB assessments than those proposed. CAS asserted that NHTSA should conduct CIB tests at the highest speeds possible to still afford safe testing so that consumers may identify vehicles offering superior CIB performance at each test speed. Similarly, NTSB encouraged NHTSA to consider more challenging test speeds to drive desired (*i.e.*, ideal) system performance instead of testing to current system capabilities. Finally, Rivian also suggested adopting higher speeds for DBS tests than those proposed if the Agency continued DBS testing in the future.

<sup>97</sup> See footnote 11 of Uhnder response.

<sup>98</sup> Kidd, 2022a.

<sup>99</sup> Kidd, 2022b.

<sup>96</sup> See GM Appendix 1.

### Test Speeds and Headway for the LVD Test Scenario Specifically

Several commenters favored adopting AEB test speeds up to 80 kph (49.7 mph) for the LVD test scenario, with BMW and Honda stating that these test speeds were appropriate since they were supported by crash data.

Tesla, along with Subaru, recommended conducting LVD scenarios at 50 kph (31.1 mph), as proposed (similar to Euro NCAP), and also at 80 kph (49.7 mph), as suggested by NHTSA. Subaru added that, if a test failure occurs at 80 kph (49.7 mph), the test speed should then be reduced by 10 kph (6.2 mph). Advocates favored harmonization with Euro NCAP with respect to test speed, headway, and deceleration for the LVD scenario, but preferred NHTSA's alternative proposal of adopting multiple higher test speeds (above 50 kph (31.1 mph)), suggesting NHTSA should also include a "range of test speeds" based on crash data and the Agency's testing.

Toyota encouraged NHTSA to conduct additional feasibility studies and research, particularly for the LVD test scenario, to: (1) resolve possible GVT stability issues; (2) study the possible conflict with human driver steering avoidance maneuver timing; and (3) research the effectiveness of FCW and DBS based on the physical limitations imposed by the proposed LVD DBS test condition, and, considering driver reaction times, determine whether such higher-speed testing is feasible and appropriate before modifying the AEB test conditions. With respect to the first request, Toyota noted the Agency's statement that it has not conducted CIB/DBS LVD testing at 80 kph (49.7 mph) because of equipment and test track length limitations. Regarding its second point, the automaker asserted that the time required to steer to avoid a collision at higher speeds is less than the time required to brake, and that by imposing the suggested high speed CIB test conditions, the Agency may create a challenging "braking" situation that could interfere with a driver's ability to avoid the crash by steering instead. Lastly, Toyota voiced concern that the SV and POV dynamics for DBS LVD testing at higher speeds may pose physical limitations.<sup>100</sup> More specifically, for speeds of 50 kph (31.1 mph) and greater, the manufacturer asserted that, given the (constant) headway prescribed, the time (*i.e.*, TTC) required to activate the brake to avoid impact, and the proposed brake

application timing of 1.0 s after issuance of the FCW, it is possible the FCW would have to be issued before the POV test device begins to decelerate in the DBS test for the SV to avoid contact with the POV. Toyota was supportive of DBS testing at higher speeds for the LVS test scenario.

Intel shared Toyota's concerns about the LVD DBS tests, explaining the proposed headway (12 m (39.4 ft.)) may be too small given a POV deceleration of 0.5 to 0.6g, such that it may not be possible to issue the FCW early enough to achieve brake activation one second after the issuance of the FCW as NHTSA proposed for the test procedure. Intel also cautioned the Agency that it should ensure it is feasible for test labs to conduct LVD tests at the proposed higher speeds considering the GVT platform experiences performance degradation at high speeds. Intel further noted many automakers limit speed reductions to approximately 60 kph (37.3 mph) per Automotive Safety Integrity Level (ASIL) considerations.

Auto Innovators did not support the Agency's adoption of test speeds exceeding the capabilities afforded by current systems for the LVD test condition because it may induce false positives under real-world driving conditions, which may in turn discourage AEB use. The group, like Toyota, also cautioned that the proposed high-speed testing may cause unexpected interactions between the SV and POV during testing. Auto Innovators recommended that the Agency consider the proposed changes for CIB and DBS for future program updates to (1) allow additional time to investigate the field relevance of the proposed changes for both technologies and (2) provide sufficient time for system capabilities to improve.

To better align with Euro NCAP testing, Intel suggested that LVD testing should be limited to 50 kph (31.1 mph) and should be performed only for vehicles equipped with both AEB and FCW. HATCI recommended that the Agency harmonize with the test speeds prescribed in Euro NCAP's protocol for the LVD test scenario if it ultimately adopts higher test speeds, and asked that the SV-to-POV headway be increased for each higher speed test condition based on field-representative distances or TTCs. Subaru recommended that the Agency maintain vehicle headway in LVD testing at a spacing equivalent to 1.0 second (instead of 12 m (39.4 ft.), as proposed) regardless of test speed. FCA also favored higher speed assessments for the LVD test scenario. However, FCA stated that the SV-to-POV headway

should be adjusted for each speed to reflect a 0.9 second following distance, asserting this following distance is typical of real-world driving.

### POV Deceleration Magnitude for LVD Test Scenario

Most commenters addressing this issue favored a 0.5g POV deceleration for the LVD CIB test instead of 0.6g, with TRC citing issues with repeatability when attempting to tune the GVT braking system to operate at a deceleration greater than 0.5g. Although it acknowledged that new robotic platforms make tuning easier, TRC also suggested that they are expensive and require modification of existing equipment before they can be utilized. BMW also cited robotic platform operational limits and tire wear as reasons not to adopt a 0.6g POV deceleration requirement. HATCI favored a 0.5g deceleration magnitude because of proven repeatability and minimal equipment damage. The commenter recommended that the Agency increase the vehicle headway if it chooses to adopt a 0.6g POV deceleration instead.

GM and Auto Innovators supported a 0.5g deceleration, asserting that this is a "common" deceleration level (based on crash data reviewed by NHTSA) and therefore "realistic." Both commenters mentioned that a 0.6g deceleration has not been shown to induce differences in vehicle performance, but can cause problems with test equipment (based on experience in conducting Euro NCAP tests at 6 m/s<sup>2</sup>). In a similar vein to the repeatability concerns mentioned by others, GM also noted that China NCAP no longer generally performs LVD tests (and other consumer groups are expected to follow suit) because they are difficult to conduct and test results for a given vehicle model are often widely variable.

A few commenters expressed conditional support for the higher POV deceleration. Specifically, Honda and Auto Innovators offered support for adoption of a 0.6g deceleration if crash data indicates such a limit is more representative of driver braking in real-world crashes. Auto Innovators added that the Agency must also ensure testing tolerances. FCA suggested that a 0.6g deceleration may be acceptable if NHTSA wanted to "reduce validation effort."

Intel expressed support for adopting a 0.6g deceleration criterion for the LVD CIB test to harmonize with other entities and regulations and thus reduce test burden. The company stated that, considering the tolerance currently prescribed for the POV deceleration, the

<sup>100</sup> See case study included in Toyota's comments.

difference between 0.5g and 0.6g is small. Bosch also supported adoption of a 0.6g deceleration magnitude, as did Tesla. However, Tesla suggested that in lieu of a single POV deceleration of 0.5 or 0.6g, as proposed, the Agency should adopt deceleration magnitudes of  $-2 \text{ m/s}^2$  and  $-6 \text{ m/s}^2$  (approximately 0.2 and 0.6g), respectively, for each test speed to harmonize with Euro NCAP. Advocates shared this opinion.

#### Agree With Removal of DBS Tests

MEMA, Subaru, and HATCI agreed with the Agency's proposal to remove the DBS test scenarios from NCAP's AEB test matrix, with the latter commenter suggesting that CIB and DBS functionality may overlap at certain speeds such that DBS functionality would be redundant when CIB is activated. HATCI therefore suggested that, if the Agency decided to continue conducting separate DBS assessments in NCAP, such tests should only be performed when a vehicle exhibits a test failure during CIB testing for that condition, as this would reduce test burden. Rivian remarked that the DBS testing was unnecessary because a vehicle's CIB system will activate and slow the vehicle when the braking imparted by DBS is insufficient. Subaru recommended removal or replacement of any ADAS test that currently has a high rate of passing results if adoption rates for the related ADAS technology are also high.

#### Retain Some or All DBS Tests

Several commenters expressed that the Agency should continue to conduct DBS assessments in NCAP because DBS affords additional safety benefits compared to CIB. ZF Group favored retaining the DBS tests to ensure that vehicles continue to be equipped with DBS, noting that DBS systems "can react earlier in critical situations." Similarly, CAS asserted that DBS "can provide additional safety margin."

Other commenters recommended that NHTSA continue DBS testing to ensure system functionality. Advocates, GM, and Auto Innovators suggested the Agency should (Advocates and GM), or could (Auto Innovators), continue to conduct DBS tests to ensure that brake pedal application does not override AEB system functionality in general. NTSB also agreed that DBS functionality should be verified and supported NHTSA's alternative proposal to retain DBS testing in NCAP and conduct LVM and LVS testing at higher speeds (70 and 80 kph (43.5 and 49.7 mph)).

GM and Auto Innovators also recommended other options centered on performing DBS tests only at certain

speeds that NHTSA could adopt to reduce the burden of DBS testing. GM noted that China NCAP performs CIB tests at lower speeds and DBS tests at higher speeds. The automaker suggested that for speeds higher than 40 kph (24.9 mph) the Agency could alternate between CIB and DBS testing. Auto Innovators stated that DBS testing would be unnecessary in situations where the CIB system provides complete avoidance in all tests, noting that the Agency could simply assume DBS performance and apply points for both systems equally. Auto Innovators also stated that each assessed test speed should afford equal weighting for both CIB and DBS, noting it should not be the case that one test speed carries twice the weight simply because both systems are assessed at that speed, whereas another test speed carries less weight because only one of the two systems is assessed at that speed. Both GM and Auto Innovators noted, similar to HATCI, that NHTSA could conduct CIB tests until the system can no longer provide full avoidance and then begin DBS testing for the next subsequent higher test speed. If the CIB system was able to provide complete avoidance at all test speeds, then the commenters suggested that DBS testing could be repeated for only the maximum test speed to ensure system functionality. GM also noted that for 2023 Euro NCAP removed the DBS tests for LVM and LVD from their assessment and going forward it will only perform the DBS test for the LVS scenario. Finally, Auto Innovators encouraged the Agency to reduce the number of test scenarios and evaluate FCW during DBS testing (*i.e.*, record the time of the FCW) to further reduce test burden.

Like other commenters' suggestions, FCA and Intel recommended that the Agency continue to perform DBS tests in NCAP for higher test speeds where the CIB system does not afford full crash avoidance, with Intel suggesting that it may be appropriate to start the DBS tests at 60 kph (37.3 mph) to harmonize with Euro NCAP. IDIADA also suggested that the Agency only perform higher speed DBS tests. Similarly, Toyota, like the NTSB, was supportive of the Agency conducting LVS and LVM DBS tests at only the highest test speeds proposed for CIB—70 and 80 kph (43.5 and 49.7 mph), respectfully. However, Toyota did not support conducting the LVD DBS test at 80 kph (49.7 mph) since NHTSA stated that it had not conducted testing at this speed due to equipment and test track limitations. Intel expressed similar concerns, stating that manufacturers may not be able to issue the FCW early

enough to achieve brake activation one second after the issuance of the FCW as NHTSA proposed for the LVD tests.

Unlike those commenters who expressed that it was sufficient for the Agency to only conduct high-speed DBS assessments or alternate CIB and DBS assessments for incremental speeds, Honda stated that it is most appropriate to conduct CIB and DBS tests at the same test speeds. Honda asserted that evaluating DBS performance only at higher test speeds may skew performance ratings (similar to what Auto Innovators stated) and not accurately convey the real-world safety benefits DBS provides at lower test speeds. Since CIB and DBS address different safety needs (*i.e.*, the driver is either not responsive, or responsive, respectively, to an imminent collision), the automaker indicated that it is imperative to ensure ratings reflect the benefits afforded by both technologies. Accordingly, Honda, like Auto Innovators, suggested that if the Agency moves forward with such an approach, vehicles should be awarded credit for lower speed DBS tests as well (even though they would only be tested for CIB and not DBS) if the vehicle received passing results for the CIB system at the lower test speeds. Honda asserted this credit would be appropriate, noting that DBS systems should afford equivalent or higher performance than CIB systems when tested at the same speeds. Bosch similarly responded that it would be appropriate to cover the entire speed range by performing one test per scenario and incrementing speeds for each separate scenario by 10 kph (6.2 mph) if NHTSA decided to continue to perform separate DBS assessments and if there are benefits to increasing both CIB and DBS test speeds. CAS also noted that if the Agency imposed higher test speeds for LVD CIB assessments, those same test speeds should be used to assess DBS. The group stated that DBS activation was highly likely for the LVD scenario and all technologies that may contribute to a given scenario/crash outcome should be assessed. Likewise, Tesla asserted that DBS testing should not be reserved only for higher-speed assessments and should be conducted using the same test specifications (speed, headway, and POV deceleration) as the corresponding CIB tests.

Advocates encouraged NHTSA to select the appropriate number of tests and test speeds to ensure acceptable performance across a range of conditions, including those that would be expected during real-world driving.



## Response to Comments and Agency Decisions

NHTSA's decision regarding CIB and DBS testing specifics can be found in the following sections as well as in Tables 12 and 13.

### CIB Test Speeds for the LVS Test Scenario

NHTSA will proceed with assessing CIB performance in NCAP's LVS scenario using the proposed SV test speeds and increments. The Agency will initiate the LVS test series at the lowest vehicle test speed, 40 kph (24.9 mph), and test speeds will increase in increments of 10 kph (6.2 mph) as each test condition's criteria are met (*i.e.*, no SV-to-POV contact is observed), up to and including the 80 kph (49.7 mph) test condition.

Although several commenters, including Advocates, recommended that the Agency set the minimum LVS test speed to 10 kph (6.2 mph) to harmonize with Euro NCAP, the Agency asserts a 40 kph (24.9 mph) minimum LVS test speed is appropriate for NCAP testing. As noted in Auto Innovators' comments to the March 2022 RFC notice, Volpe's review of 2011–2015 crash data sets showed that, for rear-end crashes, only 2 percent of fatalities and 6 percent of injuries occurred on roadways with posted speed limits of 40.2 kph (25 mph) or less.<sup>101 102</sup> It is most appropriate, at this time, to allocate resources for the flagship consumer information program to performing tests representing rear-end crashes that are more likely to induce injuries or fatalities instead of those that are more likely to cause only property damage.

NHTSA has chosen to set the uppermost SV test speed for CIB LVS testing at 80 kph (49.7 mph). A few commenters, such as GM, requested that the Agency not make any changes to the current AEB test conditions, including the test speeds, stating that the current conditions already provide significant real-world safety benefits. However, most commenters supported NHTSA's proposal to increase test speeds, including for the LVS test scenario, and several commenters even suggested adopting higher test speeds, with recommended maximums ranging from 88.5 to 104.6 kph (55 to 65 mph). The Agency notes that its recent research

testing showed CIB tests up to 80 kph (49.7 mph) are practicable; however, there is a particular need for improvement in CIB performance at vehicle test speeds above 60 kph (37.3 mph). In NHTSA's model year 2021–2022 CIB LVS research test series, out of 12 test vehicles, only three achieved full avoidance at 70 kph (43.5 mph) and two achieved full avoidance at 80 kph (49.7 mph). Given these results, establishing a maximum test speed of 80 kph (49.7 mph) for NHTSA's CIB LVS testing is currently appropriate. Further, as NHTSA recognized in its 2022 RFC notice, by adopting a maximum LVS test speed of 80 kph (49.7 mph), the Agency will harmonize with Euro NCAP's upper test speed limit for its CCRs scenario, which is analogous to NHTSA's LVS test scenario. Ensuring robust AEB system performance at 80 kph (49.7 mph) also allows the Agency to better target the high severity, high-speed crash problem identified in Volpe's real-world data analysis, further mitigating serious injuries and fatalities. For future iterations of the testing program, the Agency may choose to increase this upper test speed, as several commenters suggested, based on further real-world data collection and analysis, future research, the assurance of test practicability, and other factors.

As vehicles meet the criteria (*i.e.*, no SV-to-POV contact is observed) for passing each LVS test condition, SV test speeds will increase in 10 kph (6.2 mph) increments. Thus, LVS tests may be conducted for SV test speeds of 40 kph, 50 kph, 60 kph, 70 kph, and 80 kph (24.9 mph, 31.1 mph, 37.3 mph, 43.5 mph, and 49.7 mph), respectively, depending on the vehicle's performance at each speed. Should a test failure occur at any of these speeds, defined as SV-to-POV contact during the single trial performed at that respective speed, the test laboratory will discontinue the LVS test series. By using 10 kph (6.2 mph) increments, the Agency can minimize potential damage to the test vehicle and vehicle test device as test speeds and potential impact energy increase.

### CIB Test Speeds for the LVM Test Scenario

NHTSA will adopt the same SV test speeds for LVM testing that it is adopting for LVS testing: a minimum speed of 40 kph (24.9 mph) with speed increases in increments of 10 kph (6.2 mph), up to and including 80 kph (49.7 mph), as test vehicles meet criteria (*i.e.*, no contact) for passing each LVM condition. This approach results in potential SV test speeds of 40 kph, 50 kph, 60 kph, 70 kph, and 80 kph (24.9

mph, 31.1 mph, 37.3 mph, 43.5 mph, and 49.7 mph), respectively, depending on vehicle performance at each speed. For the lead vehicle, the POV speed will be 20 kph (12.4 mph) regardless of SV test speed.

NHTSA's rationale for adopting the LVS minimum and maximum SV test speeds and speed increments also pertains to LVM testing. The Agency asserts the selected speeds relate well to the rear-end crash problem and should thus improve real-world safety. Also, LVM testing at the selected speeds is possible. Not only are the SV speeds selected already assessed by Euro NCAP in its CCRm test,<sup>103</sup> but also, during model year 2021–2022 research testing, NHTSA found that vehicle models performed more favorably throughout the battery of test speeds in its CIB LVM test series than in its LVS test series. Only one vehicle did not achieve full avoidance in the 70 kph (43.5 mph) condition, and an additional three did not fully avoid the POV in the 80 kph (49.7 mph) condition. The rest of the vehicles were able to fully avoid SV-to-POV impact in every CIB LVM test condition. Because the lead vehicle is moving in LVM tests, the SV's speed relative to the POV is lower than in the LVS scenario for any given test speed. Further, the current NCAP protocol specifies similar minimum SV speeds and slightly lower maximum SV speeds (40.2 kph (25 mph) and 72.4 kph (45 mph)), so it is possible manufacturers have already designed their vehicles' CIB systems to mitigate such crashes.

Adopting a POV speed of 20 kph (12.4 mph) is appropriate for the LVM tests. As noted in the March 2022 RFC notice, Euro NCAP's CCRm protocol specifies this POV speed, offering another opportunity for NCAP to harmonize with other consumer information programs.

Although Subaru recommended that the Agency adopt a speed increment of 20 kph (12.4 mph) in lieu of 10 kph (6.2 mph) for NCAP's LVM testing, explaining that this speed increment would be "adequate for system evaluation," conducting an additional two test runs at 50 and 70 kph (31.1 and 43.5 mph) in addition to 40, 60, and 80 kph (24.9, 37.3, and 49.7 mph) should not add significantly to the test burden. Therefore, the Agency does not see a reason to deviate for the LVM test scenario from the 10 kph (6.2 mph) speed increment adopted for the other AEB test scenarios.

<sup>101</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>102</sup> Data provided is from all rear-end FARS and GES crashes, including cases where posted speed limit was unknown.

<sup>103</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB Car-to-Car systems, Version 4.3*. See section 8.2.2.2.

### CIB Test Speeds for the LVD Test Scenario

For the LVD CIB test scenario, the Agency will conduct tests using two SV/POV test speeds only: 50 kph (31.1 mph) and 80 kph (49.7 mph). NHTSA chose these speeds for several reasons. First, Euro NCAP specifies a 50 kph (31.1 mph) test speed for its CCRb scenario,<sup>104</sup> and adopting this speed allows the Agency to harmonize its testing in this regard. Adopting an 80 kph (49.7 mph) uppermost test speed also aligns with the highest speed NHTSA is adopting for NCAP's LVM and LVS test scenarios.

Second, in NHTSA's model year 2021–2022 research testing series, vehicles performed reasonably well for the 50 kph (31.1 mph) LVD test conditions. Half of the tested models met all the requirements for every test condition (*i.e.*, varying headways and POV decelerations). However, the 80 kph (49.7 mph) LVD test conditions proved more difficult, with SV-to-POV contact observed in most vehicle trials. Varying responses in vehicle braking systems and/or AEB algorithms may have contributed to the performance differences seen at 50 kph (31.1 mph) versus 80 kph (49.7 mph). However, one vehicle was able to pass all test criteria for the 80 kph (49.7 mph) LVD test condition, thus proving that robust AEB performance at this higher test speed is feasible. This vehicle was a popular model with a high sales volume, and the Agency has not observed an increase in reports of false activations in the field. Thus, it is NHTSA's view that Auto Innovators' concern that encouraging swift innovation will result in many false positive activations is unfounded, at least up to the maximum speed the Agency has chosen to adopt at this time.

Third, NHTSA has confirmed that its initial concern (which was also expressed by Toyota) regarding safety considerations and equipment limitations when running higher-speed LVD tests was unwarranted for speeds up to 80 kph (49.7 mph). The Agency's recent research for model year 2021–2022 vehicles showed that it is feasible to conduct CIB LVD testing at 80 kph (49.7 mph) safely. Further, neither test track limitations nor achieving the higher GVT speeds were found to be problematic during this testing.

Finally, as mentioned previously, NHTSA notes that real-world fatality and injury data highlights a safety need for testing at higher speeds, further suggesting that adopting an 80 kph (49.7

mph) upper test speed for the LVD test scenario is warranted. While Euro NCAP's CCRb test scenario specifies a single test speed of 50 kph (31.1 mph), and Intel requested that NHTSA adopt only this speed for the LVD scenario, adopting 80 kph (49.7 mph) in addition to 50 kph (31.1 mph) is appropriate. This decision also aligns with the recommendation made by other commenters, including Tesla and Subaru.

NHTSA acknowledges Subaru's recommendation that the Agency should perform an additional test at 70 kph (43.5 mph) if the SV contacted the POV during the 80 kph (49.7 mph) test to identify the vehicle's CIB performance threshold. Other commenters stated that NHTSA should test a range of speeds for the LVD tests, like the range being adopted for LVM and LVS scenarios. However, the initial speed conditions for the LVD scenario are not as critical to the outcome as other test parameters, such as headway and POV deceleration, since the SV and POV speeds are initially the same. Therefore, the Agency has decided to use two discrete speeds to evaluate LVD performance instead of speed increments but, as detailed in the next sub-section, will vary the headway and POV deceleration magnitude assessed for each speed. The use of two speeds is expected to ensure system robustness while limiting test burden.

NHTSA also acknowledges Toyota's comments that, in some high-speed cases, steering away from the impending crash may be preferable to remaining in the same travel lane and fully braking, since the time required to steer away would be less than the time required to fully stop.<sup>105</sup> That said, the timing necessary to steer away from a crash rather than brake is not the only factor that should be considered; vehicle dynamics, traffic conditions, and other traffic participants all influence the possibility and advisability of a steering avoidance maneuver. Steering to avoid a crash with a lead vehicle could cause the subject vehicle to either depart the road, collide with a vehicle in the adjacent lane, or on an undivided two-lane road, causing a head-on frontal crash. As such, the situations in which an evasive steering maneuver to avoid a crash would likely be the preferable response would be under limited circumstances, since there must be

sufficient space in a lane or on the shoulder adjacent to the subject vehicle's lane that the subject vehicle may move to, and the driver must have the ability to safely maneuver a vehicle at such a high speed. Further, it is unreasonable to assume that a driver who is inattentive until moments before a crash will reengage and be able to perform a safe steering maneuver that would not jeopardize the safety of others in the surrounding area or themselves.

Research also shows drivers are not prone to initiate steering alone to avoid a surprise obstacle in front of them in the roadway in an emergency situation.<sup>106</sup> Instead, they either brake, or brake and steer. When drivers were presented with a surprise obstacle catapulted from the side (which typically would invoke a steering response) at a TTC of 1.5 seconds, with the adjacent lane free of obstacles such that the drivers had the opportunity to avoid a collision by steering alone, 43 percent of research participants attempted to avoid the obstacle by braking alone. The other 57 percent of participants tried to avoid a collision by braking and steering, while no participant tried to avoid contact by steering alone. Only as the TTC increased (*i.e.*, above 2.0 seconds) did drivers feel comfortable attempting to avoid the obstacle by steering alone. At a TTC of 2.0 seconds, 46 percent of participants tried to avoid by braking alone, 38 percent tried to avoid by braking and steering, and 15 percent tried to avoid by steering alone, while at a TTC of 2.5 seconds, 72 percent of participants tried to avoid by braking only, 14 percent tried to avoid by braking and steering, and 14 percent tried to avoid by steering alone. These findings further reinforce the Agency's assertion that braking in lane is appropriate at the speeds NCAP will test.

The Agency also notes that in its data analysis, for those rear-end crashes where the driver's avoidance maneuver was known, Volpe found the driver made no attempt to avoid the crash for 75 percent of crashes involving fatalities and 48 percent of crashes involving injuries.<sup>107 108</sup> Therefore, initiating

<sup>106</sup> Emergency Steer and Brake Assist—A Systematic Approach for System Integration of Two Complementary Driver Assistance Systems (Eckert, Continental AG, Paper Number 11–0111), <https://www.hesv.nhtsa.dot.gov/Proceedings/22/files/22ESV-000111.pdf>.

<sup>107</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>104</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB Car-to-Car systems, Version 4.3*. See section 8.2.2.3.

<sup>105</sup> The Agency additionally notes that Euro NCAP awards points for vehicles equipped with Emergency Steering Support (ESS) systems that assist a driver in safely maneuvering around an obstacle in select scenarios. See TB037, <https://cdn.euroncap.com/media/68587/tb-037-ess-assessment-v10.pdf>.

steering (which would require driver engagement) during an AEB test would not address this large portion of crashes resulting in injuries and fatalities. Given the findings from these studies, the Agency's current AEB test requirement for braking in the absence of steering is appropriate. However, this is not to say that steering must be suppressed in crash-imminent situations.

#### CIB Headway for the LVD Test Scenario

NHTSA plans to adopt the 12 m (39.4 ft.) and 40 m (131.2 ft.) headway conditions proposed for both the 50 kph (31.1 mph) and 80 kph (49.7 mph) LVD CIB tests. The Agency's model year 2021–2022 testing demonstrated that no contact performance is practicable for both headways, even at the highest test speed (*i.e.*, 80 kph (49.7 mph)) and most stringent POV deceleration proposed (*i.e.*, 0.5g). One of the twelve test vehicles was able to achieve no contact performance at 80 kph (49.7 mph) with an initial headway of 12 m and lead vehicle deceleration of 0.5g. This same vehicle, in addition to a second model, was also able to meet the test requirements at the same test speed for a headway of 40 m and POV deceleration of 0.5g. For an SV test speed of 50 kph (31.1 mph) and 0.5g POV deceleration, all but one of the twelve vehicles tested avoided contact with the POV for the 40 m headway and six of the twelve vehicles provided passing performance for the 12 m headway.

NHTSA previously stated that adopting multiple headways in the LVD CIB test to assess CIB system performance would unnecessarily increase test burden because longer headways should result in less stringent test conditions compared to shorter headways. However, the Agency's recent model year 2021–2022 research test findings contradicted this assertion. Specifically, greater relative speed reduction was not always observed for the longer assessed headway (40 m (131.2 ft.)) compared to the shorter headway (12 m (39.4 ft.)), as the Agency had expected. When assessing vehicles at 50 kph (31.1 mph) with a POV deceleration of 0.5g, one vehicle experienced greater relative speed reduction during the shorter headway (12 m (39.4 ft.)) test than during the longer headway (40 m (131.2 ft.)) test. For LVD CIB tests completed at 80 kph (49.7 mph) and 0.4g POV deceleration, six vehicle models performed better in

the shorter headway test compared to the longer headway test.<sup>109</sup> Thus, the Agency now reasons that assessments using both headways—the 12 m (39.4 ft.) condition proposed by NHTSA and the 40 m (131.2 ft.) condition required by Euro NCAP in its CCRb test—are necessary for NCAP testing (in addition to the two adopted test speeds) to assess CIB performance in the LVD test scenario.

The Agency notes that HATCI requested NHTSA increase headways for higher-speed testing based on field-representative distances. Alternatively, it and other commenters recommended that NHTSA adjust headways based on test speed to achieve specific times-to-collision, suggesting these would be more representative of real-world driving. Such changes are not necessary, since results from NHTSA's recent research demonstrate it is possible to achieve full avoidance across both short and long headways, even at the highest speed and highest POV deceleration for the CIB LVD tests. Further, while maintaining a 12 m (39.4 ft.) headway at an 80 kph (49.7 mph) travelling speed is uncomfortably close and more likely to result in a crash imminent situation, it is reflective of the real-world driving habits of some individuals. In such situations, it will be difficult, even for an attentive driver, to react quickly enough to avoid a crash, especially with a lead vehicle braking above 0.3g. As such, it is imperative to ensure vehicles respond quickly and appropriately in such instances. Performing CIB tests in NCAP with an 80 kph (49.7 mph) test speed and 12 m (39.4 ft.) headway can provide this assurance.

Based on the results of NHTSA's recent model year 2021–2022 research testing, and in an effort to harmonize test procedures as much as possible with other consumer information programs per the BIL mandate, NHTSA will conduct tests using both 12 m (39.4 ft.) and 40 m (131.2 ft.) headways for both test speeds selected for CIB LVD testing.

#### CIB POV Deceleration Magnitude for the LVD Test Scenario

With respect to NHTSA's proposal to increase the POV deceleration magnitude currently specified in NCAP's CIB LVD test procedure from 0.3g to 0.5g or 0.6g for this upgrade of NCAP, the Agency has decided to retain a 0.3g POV deceleration in its CIB LVD

tests and adopt a 0.5g POV deceleration specification.<sup>110</sup>

While NHTSA sought comments on adopting a 0.6g POV deceleration for LVD testing and received some supportive feedback regarding this idea due in part to Euro NCAP's use of a similar test specification (6 m/s<sup>2</sup>), the Agency reasons that adopting a maximum 0.6g POV deceleration is not appropriate at this time. Although harmonization is generally desired, Euro NCAP requires only a 50 kph (31.1 mph) test speed for its CCRb test and provides partial credit for speed reduction, while NHTSA has also adopted an 80 kph (49.7 mph) test speed and is moving forward with a no contact passing criterion for its CIB testing (as discussed later). Additionally, as mentioned in its March 2022 RFC notice, NHTSA observed excessive wear on the GVT's tires (*i.e.*, flat-stopping due to wheel lockup) while conducting research testing during braking maneuvers where the POV deceleration was near 0.6g, and found it was more difficult to achieve and accurately control deceleration within the prescribed tolerances when braking maneuvers were performed with decelerations higher than 0.5g, even with extensive tuning efforts. Commenters also suggested that a 0.5g deceleration was less likely than a 0.6g deceleration to introduce repeatability issues or cause damage to test equipment. To limit potential testing challenges, NHTSA is adopting a 0.5g maximum POV deceleration for NCAP's updated LVD test requirements at this time but may consider incorporating a 0.6g deceleration as part of future program updates if testing concerns can be alleviated.

The Agency notes that many commenters asserted a 0.5g deceleration was representative of real-world driving. NHTSA's previous research suggests that drivers decelerate up to approximately 0.3g in a non-emergency situation and up to approximately 0.5g when encountering an unexpected obstacle.<sup>111</sup> Additionally, past NHTSA research analysis of rear-end crash event data recorder data showed that drivers applied the brakes at approximately 0.4g

<sup>110</sup> The Agency notes that testing with a 12 m (39.4 ft.) headway and a POV deceleration of 0.5g roughly corresponds to the deceleration necessary to comply with the minimum stopping distance required in FMVSS No. 135, "Light vehicle brake systems."

<sup>111</sup> Fitch, G.M., Blanco, M., Morgan, J.F., Rice, J.C., Wharton, A., Wierwille, W.W., & Hanowski, R.J. (2010, April) Human Performance Evaluation of Light Vehicle Brake Assist Systems: Final Report (Report No. DOT HS 811 251) Washington, DC: National Highway Traffic Safety Administration, p. 13 and p. 101.

<sup>108</sup> The SV driver's avoidance maneuver was unknown for 25 percent of fatal rear-end crashes and 54 percent of rear-end crashes with police-reported injuries.

<sup>109</sup> Note that most of the vehicles in this test series did not undergo CIB LVD testing at 80 kph (49.7 mph) and 0.5g POV deceleration. Thus, 0.4g POV deceleration data was used.

in rear-end crash scenarios.<sup>112</sup> Therefore, a POV deceleration of 0.5g seems reasonable to adopt (*i.e.*, compared to 0.6g) when real-world driving data are considered.

Given these data, there is also reason to retain the 0.3g POV deceleration currently specified in the Agency's CIB test procedure. Adopting this lower deceleration magnitude in addition to 0.5g will ensure vehicles continue to perform as expected in situations where the lead vehicle decelerates at a more moderate rate. The Agency reasons that CIB systems should function whether the lead vehicle is engaged in an emergency maneuver or not. AEB systems that perform well in a test with higher lead vehicle deceleration may not necessarily offer comparable or better performance in tests with lower lead vehicle decelerations. The Agency also notes Euro NCAP takes a similar approach to testing in its CCRb scenario. In addition to the previously mentioned 6 m/s<sup>2</sup> (19.7 ft./s<sup>2</sup>) deceleration, Euro NCAP prescribes a lower POV deceleration of 2 m/s<sup>2</sup> (6.6 ft./s<sup>2</sup>). Tesla and Advocates also agreed with such a testing approach. By adopting two POV deceleration rates for NHTSA's NCAP testing, manufacturers will need to demonstrate that their vehicles offer consistent performance by effectively recognizing and responding to lead vehicles that are braking at various rates.

While much of the Agency's recent model year 2021–2022 research testing was conducted using a 0.4g POV deceleration in addition to a 0.5g POV deceleration at each headway and test speed, NHTSA is not adopting a POV deceleration of 0.4g for its future NCAP testing. At the lower test speed of 50 kph (31.1 mph) and longer headway of 40 m (39.4 ft.), all vehicles achieved full avoidance when the POV decelerated at 0.4g and all but one vehicle met the no-contact requirements at a POV deceleration of 0.5g. Reducing the headway to 12 m (39.4 ft.) made this test condition more challenging, with half the vehicles tested achieving full avoidance when subjected to POV decelerations of 0.4g and 0.5g.<sup>113</sup> As noted earlier in this notice, higher-speed LVD testing (*i.e.*, 80 kph (49.7 mph)) was more rigorous, and few vehicles offered full avoidance for either headway. However, for the 80 kph (49.7

mph) conditions, vehicles that achieved full avoidance in a given 0.4g POV deceleration test condition also achieved full avoidance when subjected to the same condition but with a POV deceleration of 0.5g. While the Agency has noted (above) that vehicles may not always provide comparable or better performance for lower POV decelerations, NHTSA's test data shows they often do, thus suggesting it may be appropriate for NCAP, in consideration of limiting test burden, to adopt one of these decelerations (*i.e.*, 0.4 or 0.5g) without sacrificing the program's efforts to ensure robust CIB system performance. This decision seems especially reasonable since NHTSA has decided to retain a 0.3g POV deceleration while adding a 0.5g deceleration.

For the LVD CIB scenario, NHTSA will impose a similar testing assessment process to that adopted for the LVS and LVM CIB scenarios. The Agency will perform the LVD CIB test conditions in a manner consistent with increasing stringency. The first LVD trial will be performed at the minimum test speed (50 kph (31.1 mph)), maximum headway (40 m (131.2 ft.)), and minimum deceleration (0.3g). If the initial trial run is valid (*i.e.*, all test specifications and tolerances are satisfied) and the SV does not contact the POV, the Agency will proceed with conducting the next trial run at the same test speed (50 kph (31.1 mph)) and deceleration (0.3g) but will adjust the headway to the minimum specified distance, 12 m (39.4 ft.). If the vehicle does not contact the POV for this test condition and the trial run is determined to be valid, NHTSA will then increment the test speed to the maximum LVD test speed, 80 kph (49.7 mph), and perform one trial run at the maximum headway (40 m (131.2 ft.)) and minimum deceleration (0.3g), followed by one trial run at 80 kph (49.7 mph), minimum headway (12 m (39.4 ft.)), and minimum deceleration (0.3g). If no vehicle-to-POV contact is observed and all 80 kph (49.7 mph) trials are considered valid, the Agency will repeat the LVD test sequence utilizing a POV deceleration of 0.5g. See Table 14 for the sequence of CIB LVD tests.

#### DBS Testing in NCAP

After consideration of the most recent research data and comments received from the public in response to the March 2022 RFC notice, the Agency has decided to retain DBS testing in NCAP.

For the LVS and LVM scenarios, NHTSA will perform DBS assessments at the two highest test speeds adopted for the complementary CIB test

scenarios—70 kph (43.5 mph) and 80 kph (49.7 mph)—as well as two additional speeds, 90 kph (55.9 mph) and 100 kph (62.1 mph). The performance criterion for each assessment will be “no contact,” and the POV speeds adopted for DBS will align with those adopted for CIB evaluation (*i.e.*, 0 kph (0 mph) for the LVS scenario and 20 kph (12.4 mph) for the LVM scenario). For the LVD scenario, the Agency will perform DBS assessments in all eight test conditions covered by CIB: 50 kph (31.1 mph) and 80 kph (49.7 mph), each at 12 m (39.4 ft.) and 40 m (131.2 ft.) headways and each with 0.3g and 0.5g POV deceleration. Like the LVS and LVM DBS tests, the performance criterion adopted for the LVD DBS assessment will be “no contact.”

NHTSA notes that commenter suggestions on appropriate DBS test speeds varied. Some suggested that the Agency conduct CIB and DBS tests at the same speeds or alternate between CIB and DBS testing above certain speeds. Others recommended that NHTSA perform CIB tests at lower speeds and DBS tests at higher speeds, albeit sometimes with slight deviations (*e.g.*, conducting DBS testing at the next highest speed once the CIB system fails to provide complete avoidance.) Several commenters also stated that NHTSA should conduct AEB assessments, in general, at speeds higher than those proposed, citing the need to better reflect real-world driving conditions and foster ideal system performance. There is merit to these commenters' recommendations for NCAP's DBS tests. In its real-world data analysis, Volpe found that, for rear-end crashes where posted speed was known, over 37 percent of fatalities and 21 percent of injuries occurred on roadways having posted speeds between 80 kph (49.7 mph) and 100 kph (62.1 mph).<sup>114 115</sup>

By adopting two additional higher test speeds for NCAP's LVS and LVM test scenarios (*i.e.*, 90 kph (55.9 mph) and 100 kph (62.1 mph)) in addition to those proposed (*i.e.*, 70 kph (43.5 mph) and 80 kph (49.7 mph)), the program's DBS tests would represent the posted speeds at which more than 65 percent of fatalities and 91 percent of injuries occurring in rear-end crashes.<sup>116</sup>

<sup>112</sup> Automatic Emergency Braking System (AEB) Research Report, NHTSA, August 2014, pg. 47. <https://www.regulations.gov/document/NHTSA-2012-0057-0037>.

<sup>113</sup> If a vehicle did not achieve full avoidance during the 0.4g POV deceleration test condition, the 0.5g POV deceleration test condition was not assessed.

<sup>114</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>115</sup> Posted speed limit was unknown or not reported in 2 percent of fatal rear-end crashes and 11 percent of rear-end crashes with injuries.

<sup>116</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics*

NHTSA's testing has shown such test speeds to be practicable with respect to both testing feasibility and current AEB system capabilities. In its model year 2021–2022 research testing, one vehicle was able to provide complete crash avoidance up to 100 kph (62.1 mph) for all LVM and LVS test conditions.<sup>117</sup> This is likely because a speed differential of 80 kph (49.7 mph) in the Agency's LVS CIB test, where no manual braking is imparted, affords similar stringency to the Agency's LVS DBS test scenario for a test speed of 100 kph (62.1 mph), where manual braking at a constant average deceleration of 0.4g is required. The Agency also maintains that a 100 kph (62.1 mph) LVS DBS test would require braking that is no harsher than that currently demonstrated by vehicles compliant with FMVSS No. 135, "Light vehicle brake systems." In addition, a maximum subject vehicle test speed of 100 kph (62.1 mph) in the Agency's DBS LVM test affords similar stringency as a test speed of 80 kph (49.7 mph) in its DBS LVS test since the POV speed in the LVM test is 20 kph (12.4 mph), and thus, the relative speed between the subject vehicle and POV is 80 kph (49.7 mph).

While NHTSA is adopting a 100 kph (62.1 mph) maximum speed for its DBS LVS and LVM assessments, NHTSA's proposed maximum speed of 80 kph is appropriate for its DBS LVD assessment. As mentioned for the CIB LVD test, there was some concern regarding the ability to perform LVD testing reliably at 80 kph (49.7 mph). While research data has shown that testing at this speed is feasible and practicable, LVD research testing has not been conducted at speeds higher than 80 kph (49.7 mph). As such, the Agency hesitates to raise the DBS LVD test speeds to match those for LVS and LVM. Another concern raised in response to the March 2022 RFC was related to the LVD scenario and FCW timing for higher test speeds, with Toyota and Intel both noting there may not be sufficient time to: (1) issue the FCW, (2) wait for the prescribed amount of time between FCW and brake activation (*i.e.*, 1.0 second, as proposed), and (3) initiate braking during an LVD assessment where POV deceleration is 0.5g and headway is 12 m (39.4 ft.). In fact, Toyota stipulated that the POV may

not have even begun decelerating at the time at which the FCW would need to be issued. However, during its research testing, NHTSA found many vehicle models are currently available to meet this criterion.<sup>118</sup> In the 12 m (39.4 ft.) headway LVD tests with 0.5g POV deceleration, for a 50 kph (31.1 mph) test speed, eight vehicle models were able to fully avoid the POV. For the 80 kph (49.7 mph) test speed, four were able to achieve full avoidance.<sup>119</sup> These results confirm that the requirements adopted for the LVD test conditions are feasible for current DBS systems. The Agency's decision (discussed later) to explicitly allow automatic braking resulting from CIB activation after issuance of the FCW but prior to manual brake application during DBS testing is also an important consideration, as it ensures the SV is provided with the best overall opportunity to avoid the POV regardless of whether a manual brake application is being used.

Although there was overall support for retaining DBS testing in NCAP, NHTSA also recognizes that a few commenters suggested that continued testing for this technology was unnecessary. For example, Subaru stated that NHTSA remove DBS assessments from NCAP because DBS systems have a record of good performance. The automaker reasoned that mature ADAS technologies with high adoption rates could be removed and replaced with other emerging technologies. In general, NHTSA agrees with this approach, but it does not agree there are no further gains to be made regarding DBS performance. Model year 2021–2022 research testing showed that, at test speeds greater than 80 kph (49.7 mph), vehicle models offered a range of DBS performance in the LVM test. Of the 12 models, four did not offer full avoidance at 90 kph (55.9 mph) and an additional five did not offer full avoidance at 100 kph (62.1 mph). For the DBS LVS condition, five did not offer full avoidance at 70 kph (43.5 mph), three did not offer full avoidance at 80 kph (49.7 mph), two did not offer full avoidance at 90 kph (55.9 mph), and another one did not offer full avoidance at 100 kph (62.1 mph). Further, one vehicle was able to fully avoid contact through 80 kph (49.7 mph) in the CIB LVS tests but did not avoid contact in the 90 kph (55.9 mph) DBS LVS test, which would be expected to be less

challenging based on the additional manual braking imparted by the driver.

DBS LVD assessments at 80 kph (49.7 mph) also demonstrated room for improvement in the same study. When the POV deceleration was 0.4g, only five of the total 12 vehicles tested were able to fully avoid the POV for the 40 m (131.2 ft.) headway test condition, while six of the total 12 were able to fully avoid the POV in the 12 m (39.4 ft.) headway test condition. When the POV deceleration was increased to 0.5g, only three of five vehicle models tested for the 80 kph (49.7 mph), 40 m (131.2 ft.) headway test condition provided full avoidance and four of the six vehicle models achieved this performance for the 12 m (39.4 ft.) headway test condition. Several commenters also stated that continuing to perform DBS testing for each of the test conditions adopted for CIB would be redundant and only serve to increase test burden. The Agency's decision to adopt additional higher test speeds than those adopted for CIB (*i.e.*, 90 kph (55.9 mph) and 100 kph (62.1 mph)) for its LVS and LVM tests, in addition to a "no contact" performance criterion, effectively ensures that the majority of NCAP's DBS tests will be as stringent as the program's CIB tests. Thus, it is not necessary at this time to require a higher level of stringency in NCAP's DBS tests compared to its CIB tests to justify the need to retain DBS testing in NCAP. Rather, the Agency agrees with those commenters who suggested that DBS testing in NCAP is necessary to ensure that brake pedal application does not adversely affect overall AEB functionality or suppress CIB operation. If a driver attempts to brake but does so with an input that is insufficient to avoid a crash, the vehicle's DBS system must support the driver's action and intention to stop the vehicle.

With respect to the assessment approach to be used for NCAP's DBS tests, the Agency plans to align its approach for the LVS and LVM DBS tests with those finalized for CIB; however, the first and last SV speed in the respective test series will be higher. NHTSA will initiate the DBS test sequence for each of the LVS and LVM scenarios by performing a trial run at the minimum DBS test speed in the sequence (*i.e.*, 70 kph (43.5 mph)) and will then incrementally increase the test speed by 10 kph (6.2 mph) to assess the next test condition in the sequence (*i.e.*, 80 kph (49.7 mph)), as long as the initial trial run is valid (*i.e.*, all test specifications and tolerances satisfied) and the SV does not contact the POV. This incremental process will continue

*of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>117</sup> This same vehicle, when tested for the LVD scenario with the more stringent headway and POV deceleration (*i.e.*, a 12 m headway and 0.5g POV deceleration), was also able to avoid collision when tested at 50 kph (31.1 mph) and 80 kph (49.7 mph).

<sup>118</sup> The time between FCW onset and braking initiation for this testing was set at 1.0 second, which is the timing being adopted in this final notice (see later section).

<sup>119</sup> <https://www.regulations.gov/document/NHTSA-2023-0021-0005>.

until the maximum test speed of 100 kph (62.1 mph) is assessed.

For the LVD scenario, NHTSA will impose a DBS testing assessment process that is identical to that adopted for the LVD CIB tests. The Agency will conduct the first LVD trial at the minimum test speed (50 kph (31.1 mph)), maximum headway (40 m (131.2 ft.)), and minimum deceleration (0.3g). If the initial trial run is valid (*i.e.*, all test specifications and tolerances satisfied) and the SV does not contact the POV, the next trial run will be conducted at the same test speed (50 kph (31.1 mph)) and deceleration (0.3g) but the headway will be adjusted to the minimum specified distance, 12 m (39.4 ft.). If the vehicle fully avoids contacting the POV for this test condition and the trial run is determined to be valid, NHTSA will then increment the test speed to the maximum LVD test speed, 80 kph (49.7 mph), and will perform one trial run at the maximum headway (40 m (131.2 ft.)) and minimum deceleration (0.3g), followed by one trial run at 80 kph (49.7 mph), minimum headway (12 m (39.4 ft.)), and minimum deceleration (0.3g). If no vehicle-to-POV contact is observed and all 80 kph (49.7 mph) trials are considered valid, the Agency will repeat the LVD DBS test sequence utilizing a POV deceleration of 0.5g. See Table 15 for the sequence of LVD DBS tests.

The test conditions, performance criteria, and assessment approaches adopted for the LVS, LVM, and LVD DBS test scenarios will allow NHTSA to keep test burden to a minimum while confirming functionality of DBS systems and ensuring acceptable system performance across a range of real-world driving conditions, as Advocates requested.

#### c. Removal of False Positive Assessments

When the STP test was initially developed, many AEB systems relied solely on radar for lead vehicle detection. Today, most vehicles utilize a camera-only or fused system that relies on both camera and radar. While some radar-only systems have had difficulty classifying the STP correctly (*i.e.*, responding to the STP as if it was a vehicle), camera-only and fused systems have not exhibited this issue.<sup>120</sup> Since its AEB testing began in NCAP for model year 2017 vehicles, the Agency has observed no instances of false positive test failures during CIB and DBS NCAP evaluations performed for camera-only and fused AEB systems.

<sup>120</sup> This is not to suggest that camera systems are superior to radar systems in all tests.

Since fused camera-radar forward-looking AEB systems are becoming more prevalent in the fleet, NHTSA suggested it might be appropriate to remove the false positive STP assessments from NCAP's AEB (*i.e.*, CIB and DBS) evaluation matrix as part of this NCAP update and sought comment in that regard.

#### Summary of Comments

Approximately two-thirds of commenters stated that NHTSA could remove the STP false positive assessment from NCAP's AEB test matrix. The remaining one-third urged the Agency to continue to conduct false positive tests.

#### Remove False Positive Tests

The following commenters supported removal of the STP false positive tests from NCAP's AEB test matrix: Auto Innovators, BMW, Bosch, GM, HATCI, Honda, IDIADA, IIHS, Intel, MEMA, Rivian, Toyota, and TRC.

Toyota and HATCI cited improved performance of the latest technologies, as demonstrated by NCAP test results, as a reason to remove the STP tests. Likewise, TRC mentioned that vehicles may occasionally issue an alert when driven over the steel trench plate during testing, but they no longer activate AEB.

Bosch supported removal of the STP assessments from both CIB and DBS test procedures due to concerns about the tests' repeatability and representation of all real-world driving situations. Along the same lines, GM mentioned that the Agency's current STP false positive tests address only a very limited number of potential conditions that vehicle manufacturers and suppliers must assess as part of their due diligence to ensure sensors and systems respond appropriately (*i.e.*, without issuing false activations) when driven in a myriad of driving environments and conditions. Auto Innovators and BMW agreed that NCAP's false positive tests are inadequate to address all potential conditions that may incite a false positive event for all AEB systems. As such, the commenters asserted that they only serve to unnecessarily increase test burden without providing appreciable safety benefit.

Both GM and Auto Innovators suggested that, in lieu of conducting false activation tests, NHTSA should monitor customer complaints about frequent false activation events. Both commenters stated that this information would be more useful to NHTSA. IIHS also favored such an approach to addressing false-positive braking problems. IIHS remarked that NHTSA has received customer complaints and

opened investigations for false positive activations for both radar-only and camera-based AEB systems despite currently performing false positive tests and only witnessing failures for radar-only systems. Accordingly, the commenter concluded that not only are the current tests insufficient to address all instances of real-world false activations, but also the Agency could use its authority through a recall process to address false positive braking problems as they arise. IIHS further mentioned that vehicle manufacturers are sufficiently motivated to minimize false-positive interventions by customer feedback such that false positive AEB tests are not necessary.

Honda and HATCI also stated that the current false positive tests no longer address a safety need, particularly since, as Honda added, cameras are now a fundamental component of AEB, and their performance should continue to improve. Rivian agreed that most vehicles rely on fused data (*i.e.*, involving cameras) for FCW and CIB activations but also cautioned that "some manufacturers still rely on radar confidence and allow low deceleration radar-only braking." As such, the manufacturer recommended that the Agency should incorporate scenarios that could trigger radar-only braking if it wants to evaluate a vehicle's propensity to issue false positive braking. Similarly, FCA commented that it would be appropriate for the Agency to remove the STP assessment for vehicles equipped with camera-based systems, but NHTSA should continue those assessments for vehicles using radar-only systems. Intel stated that false positive STP evaluations were now "redundant" for CIB and DBS because the Agency has relaxed the allowable deceleration threshold.

#### Continue To Perform False Positive Tests

Some commenters (including Adasky, Advocates, CAS, Tesla, Vayyar, and ZF Group) stated that NHTSA should continue to conduct false positive assessments as part of NCAP's AEB test evaluations.

Adasky stated that NHTSA should retain the false positive AEB tests in NCAP because "they serve as an indication of the lack of robustness of RGB cameras and radars."<sup>121</sup> The supplier also suggested that thermal cameras should be encouraged (or required) because they may address "phantom braking" in real-world cases.

<sup>121</sup> RGB cameras are cameras that can capture light in red, green, and blue (hence, RGB) wavelengths.

Adasky noted that thermal cameras offer more robust detection and provide the redundancy necessary to overcome RGB camera and radar deficiencies. Vayyar explained that removal of false positive assessments from NCAP would serve to foster development of “suboptimal technologies” and drive an increase in real-world false positive events. ZF Group reasoned that current and future AEB systems would not necessarily be prone to false positive activations, but in the interest of safety, the group recommended retaining STP false positive tests in NCAP to ensure systems continue to work as expected. Tesla commented that false positive activations may become more common as vehicle sensing technologies continue to evolve. Accordingly, the automaker recommended that NHTSA continue to conduct the current false positive STP assessments since they may help provide nuanced distinctions in AEB performance among vehicles relying on different sensing technologies in the future. Tesla stated this would permit a more comprehensive rating.

CAS also stated that NHTSA should continue performing false positive STP assessments for AEB. The commenter noted that it would be inappropriate to assume system capabilities without test verification, especially since false positive activations have been reported for production vehicles, and there are many reasons for system failures, including supply chain disruptions, design or production issues, and manufacturing defects. Advocates opposed eliminating the false positive AEB assessments from NCAP until they were adopted into regulations.

#### Response to Comments and Agency Decisions

The Agency will retain the STP false positive test in NCAP’s AEB evaluation matrix. The test scenario will be conducted as part of both CIB and DBS system assessments as is done currently in NCAP. However, instead of performing the STP test at the currently prescribed test speeds, 40.2 and 72.4 kph (25 and 45 mph), the Agency is adopting only a test speed of 80 kph (49.7 mph) to mirror the highest test speed adopted for CIB testing.

NHTSA reasons it is no longer necessary to conduct AEB STP tests at 40.2 kph (25 mph) because the Agency has observed no instances of false positive test failures during CIB and DBS NCAP evaluations performed since the tests were added to the program for model year 2017 vehicles. Requiring only one test speed instead of two for NCAP’s CIB and DBS STP assessments should also help to offset any added test

burden imposed by the 90 and 100 kph (55.9 and 62.1 mph) assessments adopted for the program’s LVM and LVS DBS test scenarios. The slight increase in test speed (from 72.4 kph (45 mph), as currently prescribed for NCAP’s STP tests, to 80 kph (49.7 mph), as adopted) for the higher speed test condition is reasonable and justifiable to complement the performance requirements adopted for the Agency’s other AEB tests. During NHTSA’s AEB research testing for model year 2021–2022 vehicles, no AEB false positives (*i.e.*, unnecessary system activations) were observed for any of the twelve vehicles evaluated during the conduct of valid CIB and DBS trials for the STP scenario at a test speed of 80 kph (49.7 mph).

Although some commenters supported removal of the false positive tests, others encouraged the Agency to continue to conduct such tests in NCAP. Adasky, Tesla, and Vayyar expressed concerns surrounding a lack of sensor robustness and an increase in false activations with system evolution if NHTSA was to stop performing false positive tests in NCAP. While the Agency has not observed false positive test failures in CIB or DBS testing since NHTSA added these ADAS technologies to NCAP, and similarly did not observe failures in NHTSA’s research tests for model year 2021–2022 vehicles, it agrees with these commenters that it should exercise due diligence given the anticipated system changes that will be necessary to ensure current system functionality is maintained as sensing technologies evolve and as CIB test speeds increase. The Agency remains concerned that false activation events may introduce hard braking situations when such actions are not warranted, potentially causing rear-end crashes instead of mitigating them. Since the consequences of unintended braking can be more significant at higher vehicle travel speeds, retaining the highest proposed test speed (*i.e.*, 80 kph (49.7 mph)) is most appropriate. It is not appropriate at this time to adopt a test speed higher than 80 kph (49.7 mph) for the program’s CIB and DBS STP test assessments, such as the maximum test speed adopted for NCAP’s DBS tests (*i.e.*, 100 kph (62.1 mph)), since, to date, NHTSA has not performed research testing at speeds higher than 80 kph (49.7 mph) for the STP test.

Of those commenters that suggested the Agency should remove the false positive test conditions from NCAP’s AEB test matrix, some, like Honda and HATCI, stated the current STP test no longer addresses a safety need. However, NHTSA contends that if

NCAP’s STP test provides even limited coverage of real-world false positive conditions, it is still beneficial. Along these lines, continuing false positive testing in NCAP should lessen Auto Innovators’ concern that an increase in false positives during real-world driving may discourage AEB use.

Some commenters asserted that performing false positive tests in NCAP should be unnecessary since vehicle manufacturers have an incentive to maintain high customer satisfaction; therefore, they will design AEB systems to thoroughly address the potential for unwarranted braking in real-world driving scenarios. GM asserted that it is the vehicle manufacturers’ responsibility to ensure systems respond appropriately. NHTSA agrees with these commenters in theory and expects vehicle manufacturers to design AEB systems to thoroughly address the potential for false activations in a myriad of possible real-world situations so that vehicles do not pose an unreasonable risk to safety. However, the Agency also recognizes that it has received customer complaints and opened investigations for false positive activations for AEB systems. This suggests that the motivation of positive consumer feedback and accountability alone may be insufficient to fully eliminate false positive activations. Therefore, it is appropriate to retain false positive testing in NCAP’s AEB test matrix. The Agency maintains this position while acknowledging that current false positive tests are neither comprehensive nor sufficient to eliminate susceptibility to all false activations. The false activation tests serve to provide a baseline for system functionality and to establish a minimum expected performance level.

To address real-world conditions not covered by NCAP’s false positive test, NHTSA will continue to monitor customer complaints to look for reports of frequent false activations as part of its oversight. The Agency will conduct investigations, as necessary, to determine whether vehicles experiencing excessive false positive activations have a safety-related defect and thus pose an unreasonable risk to safety. The Agency will continue to handle such cases appropriately as they arise. NHTSA also plans to amend or supplement the STP test with other false positive activation tests or criteria as needed based on real-world data.

#### Peak Additional Deceleration in DBS False Positive Test

Currently, in NCAP’s STP DBS test, a vehicle’s DBS system must not engage the brakes to create a peak deceleration



that is greater than 1.5 times the average of the peak decelerations imparted by manual brake application during “baseline” tests, which are conducted to simulate the magnitude of brake application needed to produce 0.4g deceleration using the vehicle’s foundation brakes. For the Agency’s future DBS STP tests, the DBS system must not engage the brakes to create a peak deceleration of more than 0.25g additional deceleration beyond the average of the peak decelerations recorded during the DBS STP “baseline” runs. NHTSA is making this change because the lower braking threshold, which equates to a maximum combined braking level of 0.65g (*i.e.*, combining the 0.4g from the foundation’s brakes with a possible 0.25g additional deceleration), is more appropriate for the false positive test, which offers no real crash threat.

The Agency will also make a similar change for its CIB false positive test. Instead of stipulating that a vehicle cannot impart braking that exceeds 0.5g in NCAP’s CIB STP test, NHTSA is amending the criterion to reflect a maximum peak braking of 0.25g. Effectively, the vehicle’s CIB system must not engage the brakes to create a peak deceleration of more than 0.25g during the CIB STP test.

In imposing these modified requirements, a mild DBS intervention, such as that stemming from a haptic brake pulse, is deemed acceptable, but one where the vehicle thinks it must respond to the STP as if it was a real vehicle is not.

#### Brake Pedal Application Rate in DBS False Positive Test

Since the Agency has decided to retain the false positive test scenarios for its AEB tests, it plans to retain the current brake pedal application rate of  $254 \pm 25.4$  mm/s ( $10 \pm 1$  in./s) for the DBS test, as discussed in the March 2022 RFC notice.

In response to NHTSA’s December 2015 RFC notice, BMW had suggested that the Agency should allow manufacturers to specify a brake pedal application rate limit up to 400 mm/s (16 in./s) for the false positive DBS test scenario to harmonize with Euro NCAP requirements. BMW asserted that limiting the rate to a lower threshold could increase a DBS system’s sensitivity and thereby increase the likelihood of additional false activation events in the real world.

As the Agency mentioned in its RFC notice, the current application rate value is not only well within the brake application rate range of 200 to 400 mm/s (8 to 16 in./s) specified by Euro

NCAP,<sup>122</sup> but also has been shown to provide the input characteristics needed to satisfy DBS activation thresholds during NHTSA NCAP testing. To reduce the potential for an unintended intervention, activation of conventional brake assist systems typically requires higher brake pedal application rates than those required for DBS. This is because conventional brake assist systems assume that if the driver applies the brakes quickly (*i.e.*, with a brake pedal velocity profile used by drivers in an emergency/panic situation), supplemental braking is appropriate, whereas DBS systems consider data from forward-looking sensors and how the driver is applying the brakes. The additional data used by DBS allows the brake pedal velocity threshold to be lower than that of conventional brake assist systems. Thus, retaining the brake application rate of  $254 \pm 25.4$  mm/s ( $10 \pm 1$  in./s) in the DBS system performance test enables NHTSA to focus on evaluating DBS system performance instead of conventional brake technology.

#### d. No Contact Versus Speed Reduction Performance Criterion

In its March 2022 RFC notice, NHTSA proposed to adopt a performance criterion of “no contact” for both CIB and DBS tests. Although NHTSA’s DBS test procedure currently specifies “no contact” as the performance criterion for all DBS test conditions, the Agency’s CIB test procedure specifies speed reduction as the passing requirement for all but one CIB test condition.<sup>123</sup> Under the Agency’s proposal, the SV would have to avoid contacting the POV test device to pass CIB and DBS test trials. NHTSA reasoned that this approach would limit damage to the SV and POV test device during testing, thus maintaining test repeatability and vehicle test device usability. However, as alternatives to this proposal, NHTSA also asked if it would be more appropriate to require minimum speed reductions or specify a maximum allowable SV-to-POV impact speed for any or all of the proposed AEB test conditions (*i.e.*, test scenario and test speed combinations).

#### Summary of Comments

##### Speed Reduction is Appropriate

Most respondents (Auto Innovators, BMW, DENSO, GM, HATCI, Honda, IIHS, Intel, Subaru, Tesla, and Toyota)

avored a speed reduction performance criterion in lieu of “no contact” because of its implication for safety benefits. BMW, DENSO, IIHS, and Subaru stated that speed reduction was appropriate for all AEB test scenarios because it mitigates crash severity, thus reducing vehicle damage, the risk of injury, and injury severity. Similarly, GM voiced that, under many conditions (*e.g.*, speeds above 40 kph (24.9 mph) for the tested scenarios), current systems do not have the capability to completely avoid a crash, and as such, speed reduction provides the “most relevant measurable safety benefit” for AEB systems because it directly correlates to injury risk. Therefore, the automaker suggested the Agency should assess speed reduction at test speeds ranging from 40 to 60 kph (24.9 to 37.3 mph). IIHS objected to a “no contact” criterion whether the Agency proceeds with single trials, multiple trials, or single trials with follow-up trials. Like GM, Honda and Auto Innovators also asserted that many current AEB systems will not be able to achieve complete crash avoidance at higher speeds but will still provide a significant speed reduction. Honda and Auto Innovators, in addition to HATCI, stated that they were opposed to a “no contact” criterion because such an approach (*i.e.*, pass/fail) does not accurately reflect the safety benefits inherent to speed reductions. Auto Innovators cited DOT HS 813 194 to highlight the influence speed reduction can have on crash severity.<sup>124</sup>

Auto Innovators and HATCI recommended NHTSA adopt a sliding scale with points awarded to systems that successfully avoid a crash and also those that provide speed reduction (at least for “the most challenging situations” (Auto Innovators)), with the former receiving full points and the latter receiving partial credit to better differentiate performance among the fleet.<sup>125</sup> This approach is similar to that of Euro NCAP. Auto Innovators added points should be determined based on the corresponding injury risk gleaned from real-world data, and HATCI mentioned points should progressively decrease with decreasing speed reduction until the speed reduction does not provide statistically significant safety benefits. BMW mentioned that basing AEB performance assessments on speed reduction instead of pass/fail criteria would “more accurately” rate AEB systems and allow ratings to be

<sup>122</sup> 80 FR 68608 (Nov. 5, 2015).

<sup>123</sup> A performance criterion of “no contact” is currently specified for the lower speed LVM scenario (*i.e.*, SV speed of 40.2 kph (25 mph) and POV speed of 16.1 kph (10 mph)).

<sup>124</sup> NHTSA Traffic Safety Facts: Speeding 2019 Data, DOT HS 813 194 (Published October 2021).

<sup>125</sup> European New Car Assessment Programme (Euro NCAP) (November 2022), *Assessment Protocol—Safety Assist—Collision Avoidance, Version 10.2*.

more easily adjusted in the future. Honda and Auto Innovators recommended the Agency adopt maximum allowable collision speed as a performance criterion for higher-speed test conditions (*i.e.*, SV speeds of 70 and 80 kph (43.5 and 49.7 mph) per Auto Innovators). Although HATCI favored a scoring approach based on speed reduction like that used by Euro NCAP, it noted that specifying a maximum allowable impact speed for all test conditions in lieu of “no contact” would also be acceptable.

Adopting performance-based criteria (*i.e.*, speed reduction) in lieu of pass/fail criteria (*i.e.*, “no contact”) was also preferred by Toyota for similar reasons to those already mentioned. Specifically, the manufacturer stated that performance-based criteria, such as speed reduction, can be associated with reducing injuries and fatalities to better represent real-world ADAS performance. The commenter also stated that adopting a speed reduction performance criterion could reduce the number of trials that are necessary (due to system variations) for vehicle assessments, which would ultimately reduce test burden. Therefore, like Auto Innovators, the automaker recommended assigning points for both crash mitigation and avoidance.

Intel and Subaru suggested NHTSA adopt Euro NCAP’s speed reduction approach for the Agency’s CIB and DBS tests, with the latter commenter referencing Euro NCAP Assessment Protocol—Safety Assist Collision Avoidance v10.0.<sup>126</sup> Intel suggested that it is important for NHTSA to distinguish between those systems that afford at least partial speed reduction and those that offer no speed reduction, especially at higher initial test speeds.

Like Auto Innovators and HATCI, Rivian suggested that the Agency award points for speed reduction (at least for certain scenarios) in addition to having a “no contact” criterion to encourage manufacturers to continuously improve system performance for those scenarios. FCA, Bosch, and GM shared a similar sentiment. FCA suggested it may be appropriate to require “no contact” for LVS tests with speeds up to 30 kph (18.6 mph), but speed reduction should generally be required for higher test speeds since the “prediction time increases” for such conditions. The commenter stated a requirement of “no contact” may cause higher false positive rates, resulting in system deactivation in the real world. Bosch opined that “no

contact” is an appropriate performance criterion for test speeds up to 60 kph (37.3 mph) but stated that points should be awarded for speed reductions as low as 10 kph (6.2 mph) for higher speed test conditions.

#### No Contact Is Appropriate

A few commenters asserted a performance criterion of “no contact” was appropriate for the Agency to adopt for its NCAP AEB testing. CAS expressed that “no contact” is the most appropriate performance criterion for the Agency’s AEB tests since the desired outcome of any CIB or DBS activation is to avoid contact. CAS also asserted that “no contact” serves as a useful criterion for consumers when comparing vehicles, especially as speeds are increased. Finally, it stated that if the Agency found that a vehicle exhibited contact as test speeds were progressively incremented, then it should “regressively test at lower speeds” to determine “the maximum ‘no contact’ speed,” which could then be used as the baseline to compare vehicles.

Adasky commented that AEB systems should afford “no contact” even at higher test speeds and at night since thermal cameras are available and can help systems perform well under these conditions. Advocates stated that a “no contact” requirement is “essential,” but also suggested that the Agency consider assigning credit to systems that offer “meaningful” speed reductions for tested speeds that fall outside of the range of performance afforded by current systems—both lower and higher.

#### Response to Comments and Agency Decisions

The Agency is proceeding with adopting a “no contact” criterion for NCAP’s AEB performance test requirements. Such a criterion is feasible to achieve, consistent with the safety need, and necessary to ensure test repeatability, among other reasons.

Recent AEB testing has shown that several vehicles from the modern fleet were able to avoid contacting the vehicle test device for most of the test conditions adopted herein. For instance, one vehicle model provided complete avoidance in most of the adopted test conditions. This model did not provide full avoidance when tested using a 12 m (39.4 ft.) headway and 0.4g POV deceleration, so the more stringent 0.5g deceleration NCAP test condition using the same 12 m (39.4 ft.) headway was not performed. However, the vehicle’s relative impact speed for the 0.4g deceleration condition was relatively low, at 9.5 kph (5.9 mph) during the

first trial. Consequently, it is reasonable to expect that minor changes could be made to the vehicle model’s AEB system such that it would be able to pass the CIB LVD, 12 m (39.4 ft.) headway and 0.5g POV deceleration condition in the near future. Another vehicle model provided full avoidance in nearly every test condition, failing to completely avoid contact with the POV in only the CIB LVS test scenario. For this test scenario, the vehicle provided complete avoidance at test speeds through 60 kph (37.3 mph), and at 70 kph (43.5 mph), the vehicle provided partial speed reduction. Since full avoidance was not observed at 70 kph (43.5 mph), the vehicle was not subsequently tested at 80 kph (49.7 mph). Thus, while several commenters mentioned that tested vehicles may currently have difficulty with completely avoiding contact with the vehicle test device, the aforementioned results suggest that the test requirements are practical for vehicles to achieve in the near future. Furthermore, manufacturers of these vehicles have shown that a “no contact” performance criterion can be met with no increase to false positive rates, even at higher test speeds, which was a concern expressed by FCA. To date, NHTSA has not received an increased number of false positive reports for either vehicle.

In response to Rivian and FCA’s statements that adopting speed reduction as a performance criterion would encourage manufacturers to continuously improve system performance, particularly at higher test speeds, applying a “no contact” performance criterion should achieve the same goal. Vehicle manufacturers that wish to obtain NCAP credit for AEB must have vehicles that offer exceptional, robust system performance. Although it may be true that there are inherent safety benefits to adopting a maximum allowable impact speed or speed reduction performance criterion, as numerous commenters asserted, there are more profound safety benefits afforded by systems that offer complete crash avoidance. By promoting development of more robust AEB systems capable of much higher speed reductions and complete crash avoidance, AEB systems may effectively address a larger percentage of crashes that cause serious injuries and/or fatalities.

It would be most advantageous to establish a “no contact” performance criterion for several other reasons. From a testing logistics perspective, the Agency has observed that it is possible for even relatively low-speed collisions with the lead vehicle test device to

<sup>126</sup> See figure provided by Intel and Euro NCAP Assessment Protocol—Safety Assist Collision Avoidance v10.0 for Subaru.

damage the SV during testing. In such instances, camera or radar sensors on the vehicle may become misaligned such that subsequent runs might not be representative of the vehicle condition at the time of first sale. Further, striking the vehicle test device might prematurely degrade the appearance of the device and modify its specifications, including in ways not immediately observable. As mentioned previously, damage to the test device might affect the radar cross section and may require a lengthy verification procedure to discover. As such, vehicle contact which does not result in immediate test failure may introduce repeatability concerns, time-consuming interruptions to testing, and higher costs.

As mentioned in the March 2022 RFC notice, the Agency is not proposing a full-scale rating system for crash avoidance technologies at this time. NHTSA plans to continue to use check marks to give credit to vehicles that are equipped with the recommended ADAS technologies and pass the applicable system performance test requirements for each ADAS technology included in NCAP until it issues a final decision notice announcing the new ADAS rating system. Therefore, at this time, the Agency cannot adopt a points-based system for speed reductions, as Auto Innovators, HATCI, Toyota, and Rivian suggested.

Regarding Toyota's comment that adopting a speed reduction performance criterion could reduce the number of trials necessary for vehicle assessments and therefore reduce test burden, the Agency's planned testing approach (discussed in the next section) will effectively address this concern.

Finally, the Agency agrees with CAS that it will be easier to communicate test results to consumers if the passing criterion is straightforward ("no contact") compared to a passing criterion based on speed reduction or maximum allowable impact speed. NHTSA also recognizes, as the respondent suggested, that full avoidance is likely the result that most consumers desire from an AEB system.

#### e. Number of Trials

Currently, NHTSA's AEB test procedure requires that a vehicle meet performance criteria (*i.e.*, a specified speed reduction) for five out of seven trials. In its March 2022 proposal, however, the Agency suggested that a new testing approach may be more appropriate given the changes proposed for its AEB tests.

Per NHTSA's March 2022 RFC, only one valid test trial (*i.e.*, a trial in which all test specifications and tolerances are

satisfied) would be conducted per each incremented test speed (*i.e.*, 40, 50, 60, 70, and 80 kph or 24.9, 31.1, 37.3, 43.5, and 49.7 mph (as applicable for each test scenario))<sup>127</sup> as long as the SV did not contact the POV test device. If the SV were to contact the POV during a test trial, and the relative longitudinal velocity between the SV and POV was less than or equal to 50 percent of the initial speed of the SV, NHTSA proposed that it would then perform four additional (repeated) test trials at the same speed for which the impact occurred. The Agency proposed that the SV could not contact the POV for at least three out of the five test trials performed at that same speed to pass that specific combination of test scenario and test speed (*i.e.*, test condition).<sup>128</sup> If the SV contacted the POV during a valid trial of a test condition (whether it be the first test performed at a particular test speed or a subsequent test trial at that same speed), and the relative impact velocity exceeded 50 percent of the initial speed of the SV, no additional test trials would be conducted at the given test speed (or for the test scenario) and the SV would fail the test condition.

Because the Agency had proposed additional test speeds (compared to its current assessments) for the various AEB test scenarios, NHTSA asserted this assessment approach would reduce test burden while continuing to ensure that passing AEB systems represent robust designs that offer a high level of performance and safety. In its March 2022 RFC, the Agency sought comment on whether this proposed assessment method was appropriate or whether an alternative method, such as subjecting the vehicle to multiple trials, should be adopted instead. For respondents preferring multiple trials, NHTSA asked how many trials would be appropriate and what an acceptable pass rate would be. Further, for those respondents who favored the proposed assessment method, NHTSA asked whether such a method would also be acceptable in instances where only one or two test speeds were selected for inclusion, such as for the LVD test scenario,<sup>129</sup> or

<sup>127</sup> NHTSA's proposal included several assessment alternatives for the LVD test scenario. These included testing one speed, 50 kph (31.1 mph); two speeds, 50 kph (31.1 mph) and 80 kph (49.7 mph); or four speeds, 50, 60, 70, and 80 kph (31.1, 37.3, 43.5, and 49.7 mph).

<sup>128</sup> The Agency notes that a similar pass/fail criterion (*i.e.*, a vehicle must meet performance requirements for three out of five trials for a particular test condition to pass the test condition) is included in its current LDW test procedure, as referenced later in this document.

<sup>129</sup> For the LVD test scenario, NHTSA proposed to adopt an SV and POV test speed of 50 kph (31.1

whether it would be more appropriate in such instances to alternatively require seven trials for each test speed and additionally require that five out of the seven trials conducted pass the "no contact" performance criterion.

#### Summary of Comments

A few commenters generally agreed with the Agency's proposal to conduct one trial per test speed with speed increments of 10 kph (6.2 mph) and to only perform repeated trials in the event of POV contact. Rivian was one such commenter, stating that the proposed AEB test method was "practical," as 10 kph (6.2 mph) test speed increments should sufficiently highlight performance degradations such that multiple trials at a given speed should not be necessary, thus reducing test burden. Likewise, IDIADA commented that performing one trial per test speed across many different speeds was sufficient to ensure system robustness. DRI also supported the Agency's proposal for AEB testing, explaining that their experience has shown that CIB and DBS systems typically do not have difficulty detecting lead vehicles and are able to do so repeatedly such that inconsistent results generally stem from poor system performance rather than detection capabilities.

HATCI and Honda also generally agreed with the Agency's proposal. The manufacturers were in favor of completing an additional four runs after the first failed (*i.e.*, contact) run and supported the proposed pass rate of three out of five total runs. However, Honda commented that additional trials should be conducted even if the AEB system does not impart a 50 percent relative speed reduction in the first trial run. The automaker expressed that stopping the test after one failed run may be "overly strict" and "premature" given potential variations in test conditions.

BMW supported test speed increments of 10 kph (6.2 mph) and the Agency's proposal to conduct four additional runs in the event of contact if NHTSA ultimately adopted a "no contact" (*i.e.*, pass/fail) criterion. Having noted this, the automaker, along

with (i.e., one test condition) but also sought comment on whether it would be appropriate to incorporate additional SV and POV test speeds of 60, 70, and 80 kph (37.3, 43.5, and 49.7 mph, respectively). Furthermore, for DBS specifically, the Agency sought comment on whether it was reasonable to only conduct LVS and LVM tests at only the highest two test speeds proposed for CIB—70 and 80 kph (43.5 and 49.7 mph) (*i.e.*, two test conditions). A similar comment request was made for the LVD DBS test, if NHTSA decided to adopt those same higher test speeds (*i.e.*, 70 and 80 kph (43.5 and 49.7 mph)) for the CIB LVD test.

with several other commenters, expressed strong support for adopting assessment criteria based on speed reduction instead. With speed reduction as the assessment criterion (instead of “no contact”), BMW supported conducting two additional trials after the first run failure (*i.e.*, contact) and then using the median speed for all three trial runs as the true impact speed for rating purposes.

Auto Innovators and FCA also generally supported the Agency’s proposal for AEB testing (*i.e.*, one trial per test speed) but suggested that a pass rate of two out of three would be acceptable in instances of contact during the first trial run for a test condition to reduce test burden. However, like BMW, both groups also stated that the Agency should recognize the inherent safety benefits afforded by crash mitigation (*i.e.*, speed reduction) in addition to complete crash avoidance. In the same vein, Auto Innovators asserted that the Agency’s current proposal, which would prohibit test conduct for higher speeds if lower speeds did not result in crash avoidance, “may unintentionally penalize systems that have robust higher-speed performance.” Accordingly, the group suggested that (1) conducting higher-speed trial runs should not be contingent on a 50 percent relative speed reduction for lower speed runs and/or (2) testing for a scenario should continue regardless of whether the relative speed reduction in one trial is less than 50 percent. Instead, Auto Innovators suggested the Agency consider assigning “partial credit” to systems that perform worse at lower speeds. Whereas BMW recommended using the median speed of all three trials to assign vehicles’ AEB performance ratings, FCA suggested NHTSA average the impact speed for the trials conducted when impact occurs. FCA further noted it would prefer “further definition” for LVD tests at test speeds greater than 60 kph (37.3 mph) before settling on an assessment method for these test conditions.

In general, GM favored optimizing the number of test conditions rather than reducing the number of test runs. The manufacturer noted the former does more to reduce overall test burden and the latter leads to a diminished understanding of system performance variation. However, in this instance, the automaker reasoned that the Agency’s proposal would “speed up the test, and only repeat trials when necessary,” so they were supportive of the proposed three out of five pass rate if the Agency adopted a “no contact” performance criterion. However, the automaker, like

many others, favored speed reduction as the performance criterion for higher speeds in lieu of “no contact.” More specifically, GM recommended the Agency adopt a 30 kph (18.6 mph) relative impact speed (instead of full avoidance) as the minimum performance criterion for SV speeds above 50 kph (31.1 mph). The manufacturer suggested that additional trials should be performed for those vehicles having a relative impact speed of 30 kph (18.6 mph) or less, and either the mean or median of the resulting velocity reductions should be used for scoring.

While Rivian stated that the Agency’s proposal of testing across multiple speeds instead of multiple trials at the same speed would ensure system robustness, Intel stated that conducting multiple trials was “more robust.” However, to limit test burden, Intel suggested, like others, that a pass rate of two out of three trials was appropriate for a given test condition. The company also agreed in sentiment with others’ recommendation that the Agency recognize the safety benefits inherent to speed reductions, and Honda’s assertion that stopping a test because of one run at a lower speed that doesn’t produce at least a 50 percent speed reduction may be too extreme. As such, Intel also proposed an alternative test procedure to further reduce test burden.

For its proposed procedure, Intel suggested that instead of performing the entire AEB test matrix, NHTSA should select a random subset of tests (*i.e.*, test conditions) to be performed based on test results for the complete matrix provided by vehicle manufacturers. The first trial of the first selected test condition would then be performed. If the speed reduction for that trial meets a “predicted” speed reduction, points applicable to the actual speed reduction would be awarded and the first trial of the next randomly selected test condition would then be performed. If the speed reduction for the first trial was insufficient (*i.e.*, did not achieve the “predicted” speed reduction), an additional two trials would be conducted (as mentioned previously). If both of those trial runs achieved the “predicted speed reduction,” points applicable to the actual speed reduction would be awarded and testing would continue with the next randomly selected test condition. If the “predicted” speed reduction was not met for at least two of the three trials conducted for a given test condition, then the test would cease, and partial points would be awarded based on the average speed reduction recorded for the three trials. Intel also suggested the

Agency should apply a penalty, as is done by Euro NCAP, for instances where the actual speed reduction is less than the “predicted” speed reduction.

Tesla also stated it supported adopting performance criteria based on speed reduction in lieu of a “no contact” pass/fail criterion (for both CIB and DBS). Unlike the other commenters who expressed a similar sentiment and proposed that three trials should be conducted upon impact, Tesla supported the Agency’s original proposal of requiring that an additional four runs be conducted after the initial trial run (for five runs total). For those additional four runs, Tesla asserted the vehicle should have to achieve a speed reduction of 75 percent or more of the initial SV speed to obtain a passing result for that test condition. If the vehicle was to achieve passing results for that test condition, then the speed would be incremented to the next test speed and the process would repeat until the vehicle either could not exceed a 75 percent speed reduction, or the 80 kph (49.7 mph) test condition was passed, whichever came first.

CAS stated that NHTSA’s assessments should be based on objective reliability and confidence criteria, noting that passing 7 out of 7 trials at any speed provides 91 percent reliability of the AEB system with only 50 percent confidence. Therefore, CAS contended that no fewer than 7 successful trials and no failures should be acceptable at any speed.

As previously mentioned, Auto Innovators did not favor a pass rate of five out of seven runs since this pass rate would not optimize test resources. Notwithstanding, the group remarked that if the Agency did impose a five out of seven requirement and the first five runs produced passing results (*i.e.*, no contact), then the last two runs should not be conducted in order to reduce test burden.

Other commenters provided general comments on this topic. For example, Toyota stated the Agency should conduct the number of trials that were sufficient to communicate accurate performance information to consumers, without recommending a specific number. Advocates asserted that the Agency should justify how the number of trials and pass/fail criteria adopted will assure that evaluated systems will perform as expected and address the safety need, especially since NHTSA’s testing is conducted under controlled conditions.

## Response to Comments and Agency Decisions

The Agency sought feedback on the proposed number of trials within each test variant. The Agency also asked commenters to consider a potential ADAS rating system that would allow flexibilities for continuous improvements to the program and cross-model year comparisons. Based on comments received on the appropriate number of trials for each test variant, NHTSA has decided that instead of performing multiple trials for each assessed test condition for a given test scenario, as is currently done for NCAP testing, it will conduct one trial per test condition (*e.g.*, at a prescribed test speed for a given test condition/scenario) for future AEB NCAP tests. In the event the SV contacts the POV during a trial, testing will cease for the test condition, respective test scenario, and the AEB test being performed (*i.e.*, CIB or DBS). Effectively, the vehicle will fail the individual test condition/scenario being assessed, and it will not receive NCAP credit for the ADAS system being evaluated, whether it be CIB or DBS.

## Number of Trials Required for Each Test Condition

Since the Agency will run only one valid trial per test condition, per NHTSA's finalized CIB testing approach, the Agency will conduct, at most, five LVS tests, five LVM tests, eight LVD tests, and one false positive test. For DBS, NHTSA will conduct, at most: four LVS tests, four LVM tests, eight LVD tests, and one false positive test. This results in a maximum total of 19 CIB test trials and 17 DBS test trials, or 36 total AEB trials.

Although several commenters, like Intel and CAS, stated the Agency should or must continue to conduct multiple trials per test condition, many other commenters (Auto Innovators, FCA, GM, HATCI, Honda, and BMW) asserted that NHTSA's planned testing approach was appropriate. There are several reasons that a testing approach requiring one trial run per test condition, instead of multiple runs, is appropriate for the Agency's AEB testing in NCAP. First, NHTSA notes that DRI attested that, from its own experience with AEB testing, systems exhibiting better performance tend to do so repeatably. DRI's observation for superior AEB systems partially counters CAS's assertion that conducting a single trial for a given test condition would be insufficient. With respect to less robust AEB systems, the Agency acknowledges that, occasionally, a vehicle may pass

the first trial for a given speed even though it may fail subsequent trials if additional trials were to be conducted at that same speed. However, NHTSA also asserts that the system's poor performance could alternatively be exposed in single trials conducted for progressively higher speeds, which is the approach the Agency has adopted for its LVS and LVM tests.<sup>130</sup> As such, the Agency agrees not only with IDIADA, which stated that an approach that requires one trial per test speed across many different speeds should effectively assure system robustness, but also with Rivian, which noted that such an approach should effectively identify changes in system performance without the need to conduct multiple runs for each test condition. Further, NHTSA asserts its planned testing approach of incrementing test speeds should also reduce the risk of damage to the SV and POV.

Performing one trial run per test condition is also reasonable for NCAP's LVD tests. Although NHTSA plans to assess only two discrete test speeds for the LVD scenario rather than a range of speeds as planned for the LVS and LVM scenarios, NHTSA reasons this approach should still ensure system robustness for the LVD AEB tests. As mentioned earlier, since the SV and POV speeds are initially the same in the LVD tests, the initial speed conditions for the decelerating lead vehicle scenario are not as critical to the outcome of the test as the other main parameters, headway and POV deceleration. It should be noted, though, that a higher initial test speed inherently requires additional braking to achieve a complete stop compared to a lower initial test speed. Thus, by adopting two discrete test speeds, two different headways, and two POV deceleration magnitudes, as well as structuring testing such that it progresses from generally the least challenging to the most challenging parameters, it will still ensure AEB systems receiving NCAP credit for passing test results represent robust designs offering a high level of performance and safety without increasing test burden unnecessarily.

Second, NHTSA's testing approach is reasonable for NCAP because it best manages test burden. Per CAS' comments, the Agency can only be 50 percent confident that AEB systems will be 91 percent reliable when seven runs are conducted for each test condition. This means that NHTSA would have to

<sup>130</sup> The Agency will increment test speeds by 10 kph (6.2 mph) from a minimum to a maximum speed.

perform a far greater number of runs for each test condition to have a reasonably high confidence that the observed system performance is representative of the system's true capability.<sup>131</sup> Alternatively, the Agency could consider conducting a large number of runs at only the highest test speed for each test scenario. However, it would risk imparting additional damage to the test vehicle and test equipment in addition to test delays due to repairs if it were to take such an approach.<sup>132</sup>

Third, permitting some number of failures, which would be inherent to repeated trials, would be detrimental to real-world safety. Considering NCAP testing will be limited to only certain conditions in a controlled testing environment, allowing no test failures is the most acceptable approach and will best ensure consistency in real world AEB system performance and safety improvement in rear-end crashes.

The aforementioned considerations make the Agency's planned testing approach the most appropriate for NCAP testing. Because NHTSA has decided to adopt an approach requiring only one trial per test condition, it is not necessary to evaluate a random subset of test conditions to limit test burden, as Intel suggested.

## Repeat Trials in the Event of Contact

NHTSA's RFC notice proposed performing four additional (repeated) test trials at the same test speed if the SV contacted the POV during the first test trial for a given AEB test condition and the relative longitudinal velocity between the SV and POV was less than or equal to 50 percent of the initial speed of the SV. To pass the test condition, NHTSA proposed that the SV could not contact the POV for at least three out of the five total trials conducted. The Agency also proposed that if the SV contacted the POV during a valid trial of a test condition (whether it be the first test performed at a particular test speed or a subsequent repeat run conducted at that same speed), and the relative longitudinal impact velocity exceeded 50 percent of the initial speed of the SV, no additional test trials would be conducted at the given test speed (or for the test scenario) and the SV would fail the test condition.

<sup>131</sup> Three hundred trials would be needed for 99 percent reliability with 95 percent confidence. Similarly, 59 trials would be needed for 95 percent reliability with a 95 percent confidence, and 29 trials would be needed for 90 percent reliability with 95 percent confidence.

<sup>132</sup> Since the vehicle tested is randomly purchased or leased from dealerships, its performance in the AEB tests is based on the performance and manufacturing reliability set by the manufacturer.

The Agency has decided not to finalize this part of its proposal and will thus not conduct repeat trials in the event of SV-to-POV contact, regardless of the relative longitudinal impact velocity recorded between the two vehicles at the time of impact.

Many commenters (Auto Innovators, BMW, FCA, GM, HATCI, Honda, Rivian, and Tesla) agreed, at least in part (some differed on the pass rate), with the Agency's proposal to conduct additional trials if an initial trial run resulted in contact, and most of these commenters (Auto Innovators, BMW, FCA, GM, Honda, and Rivian) stated that NHTSA should consider conducting multiple trials regardless of whether a 50 percent speed reduction was observed in the first or subsequent trial runs. However, based on other comments received and laboratory testing experience, NHTSA reasons it is no longer appropriate to conduct repeat trials in the event of contact.

Specifically, the Agency's underlying objective in updating NCAP is to adopt AEB tests that are representative of real-world rear-end crashes and maximize safety. To achieve these goals, NHTSA must establish performance criteria for testing that will ensure AEB system response is consistent and repeatable. Similar to DRI's observations during AEB testing, the Agency has observed that if a vehicle contacts the vehicle test device during the first trial run for a test condition, it is also likely to contact the vehicle test device during subsequent runs conducted.<sup>133</sup> In the Agency's testing, if an impact occurred and additional tests were performed for that test condition, at least one more impact was observed 97 percent of the time (32 of 33 applicable test conditions) for CIB tests, and for 100 percent of the DBS tests (27 of 27 of the applicable test conditions). Considering all CIB and DBS trials, the total was 98 percent (59 of 60 total trials). Therefore, the Agency disagrees with commenters who stated that discontinuing testing after a single-run failure is "overly strict."

Encouraging robust system performance that limits contact will lead to a reduction of harm and costs associated with crashes, and result in fewer testing delays and costs caused by SV-to-POV contact, benefiting both the public and the Agency. Based on this, NHTSA does not agree with concerns raised by several commenters who expressed that discontinuing testing after failures at low speeds may be "premature" or may unfairly penalize vehicles that offer more robust AEB

system performance at higher test speeds. Specifically, NHTSA notes that a lower speed rear-end crash resulting in an injury still causes an unnecessary injury, and still imposes an economic cost. As such, requiring crash avoidance performance across the range of speeds and test conditions defined in the NCAP AEB test matrix is imperative to maximize safety.

The Agency also agrees with Toyota that it should only conduct the number of test trials necessary to provide consumers with accurate information pertaining to AEB system performance. Allowing repeated trials in the event of SV-to-POV contact may mislead consumers, potentially causing them to assume that a vehicle's AEB system provides more repeatable, robust crash avoidance performance than it does. As such, it is most appropriate to provide consumers with an assessment of system performance using a single, representative sample rather than an assessment based on the average or median impact speed across several runs, as some commenters suggested. Manufacturers must design their vehicles to meet the adopted performance criteria every time. By proceeding in this manner, the Agency is responding to Advocates' request to best ensure the number of trial and performance criteria adopted will assure that evaluated systems will perform as expected and best address the safety need.

#### f. Pass Rate

The Agency sought comment on an appropriate minimum pass rate to evaluate AEB performance based on the adjustments it proposed for its AEB assessments. The proposal included plans to (1) consolidate its FCW and CIB tests such that the CIB tests would also serve as an indicant of FCW operation, (2) assess up to 14 test speeds for CIB (*i.e.*, five for LVS, five for LVM, and potentially four for LVD), and (3) assess up to six test speeds for DBS (two for LVS, two for LVM, and potentially two for LVD), which would result in a total of up to 20 unique combinations of test conditions to be evaluated for AEB. As an example, the Agency suggested that a vehicle could be considered to meet the AEB performance if it passes two-thirds of the 20 unique combinations of test conditions (*i.e.*, passes 14 unique combinations of test conditions).

#### Summary of Comments

Bosch favored a pass rate of two-thirds of the 20 unique combinations but stated that any vehicles not able to meet this criterion should be awarded partial credit. BMW, Honda, and Auto

Innovators also commented that a pass rate of two-thirds is reasonable. However, to ensure that both CIB and DBS performance is weighted equally, Honda suggested (as mentioned earlier) that the Agency should add DBS tests at lower speeds (40, 50, and 60 kph) to align with CIB performance evaluations that are also conducted at those speeds.

Tesla favored a pass rate of 70 percent for CIB and DBS tests overall (*i.e.*, 70 percent of all test conditions assessed for the specified test scenarios) since this would generally be consistent with current NCAP test procedures, which require a pass rate of five out of seven trials.

CAS asserted that the only appropriate pass rate is 100 percent, stating that the number of trials proposed by the Agency was "insufficient to establish high confidence in safe performance even with no failures."

#### Response to Comments and Agency Decisions

NHTSA has decided to adopt a 100 percent pass rate for CIB and DBS system testing and will provide consumers with an overall assessment of AEB performance, as proposed. This means AEB systems must achieve passing results (*i.e.*, no POV-to-SV contact) in all adopted test conditions for both CIB and DBS (*i.e.*, 19 test conditions for CIB—five for LVS, five for LVM, eight for LVD, and one false positive; and 17 test conditions for DBS—four for LVS, four for LVM, eight for LVD, and one false positive) to receive credit for AEB technology. The Agency will not provide separate credit for CIB and DBS passing performance; only those vehicles achieving passing performance for all 36 AEB test conditions will receive NCAP credit for passing AEB performance.

The Agency's decision to adopt a pass rate of 100 percent and combine CIB and DBS performance into an overall assessment for AEB is appropriate for several reasons. First, NHTSA agrees with CAS that no test failures should be allowed for any test scenarios/conditions. This is the best way to ensure that only the most robust AEB systems obtain AEB credit on the Agency's website. Adopting a pass rate of two-thirds or seventy percent, as some commenters suggested, or awarding partial credit, as Bosch requested, does not best serve the motoring public. As mentioned previously, the only way to ensure AEB systems afford meaningful safety is to require vehicles to avoid contact for every test condition assessed. Further, since the goal of NCAP is to provide

<sup>133</sup> [https://downloads.regulations.gov/NHTSA-2023-0021-0006/attachment\\_2.pdf](https://downloads.regulations.gov/NHTSA-2023-0021-0006/attachment_2.pdf).

consumers with information to inform their vehicle buying choices, communicating information on the functionality of a vehicle's entire AEB system, rather than its individual system components, would be more beneficial at this time. The Agency reasons that consumers' new vehicle selection criteria will not include a consideration of whether they anticipate braking or not when faced with a crash-imminent situation. Rather, they will want to purchase a vehicle that responds appropriately to prevent the crash regardless of their action(s) or inaction. As such, providing separate ratings for CIB and DBS performance would be unhelpful in this regard. NHTSA also does not want to mislead consumers in assuming AEB system performance is better than it is by assigning credit to a vehicle for passing DBS performance when its CIB performance was lackluster. This is particularly concerning since, as

mentioned, NHTSA found in its analysis of 2003–2009 NASS–CDS data that drivers of an SV involved in a rear-end crash tended to brake at about the same rate as those who did not brake, thus making performance for both system components equally important.<sup>134</sup> Yet, the Agency's research testing for model year 2021–2022 vehicles suggested that no vehicle exhibited passing performance for both AEB technologies, although one vehicle achieved passing results for one technology, DBS.<sup>135</sup> Nonetheless, NHTSA believes that achieving a pass rate of 100 percent for CIB and DBS testing is feasible. The Agency notes that the vehicle which provided passing performance for all DBS tests also achieved no contact performance for 16 of the 18 assessed CIB test conditions. While contact was observed for the 12 m headway, 0.4g deceleration LVD CIB test condition (such that the 12 m headway, 0.5g deceleration LVD CIB test

condition was not subsequently performed), the vehicle exhibited a relative impact speed of less than 10 kph during all runs performed. Considering the vehicle's robust performance overall for the overwhelming majority of the AEB tests conducted, NHTSA believes that minor changes to the system's software should afford a perfect pass rate overall. Since the number of tests adopted for NCAP's CIB assessments is nearly identical to the number adopted for the program's DBS assessments (*i.e.*, 19 tests for CIB versus 17 for DBS), there is no need to weight either set of assessments (*i.e.*, those for CIB or DBS), as Honda requested, especially since vehicles must achieve a pass rate of 100 percent for each of the two AEB technologies to receive credit for both. An overview of test scenarios and conditions that will be required to receive passing credit for AEB systems in NCAP is shown in Tables 14 and 15.

TABLE 14—ADOPTED CIB TEST SCENARIOS AND CONDITIONS

Test No.	Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
1	LVS	40 (24.9)	0	n/a	n/a	No SV-to-POV contact during any trial.
2		50 (31.1)	0	n/a	n/a	
3		60 (37.3)	0	n/a	n/a	
4		70 (43.5)	0	n/a	n/a	
5		80 (49.7)	0	n/a	n/a	
6	LVM	40 (24.9)	20 (12.4)	n/a	n/a	
7		50 (31.1)	20 (12.4)	n/a	n/a	
8		60 (37.3)	20 (12.4)	n/a	n/a	
9		70 (43.5)	20 (12.4)	n/a	n/a	
10		80 (49.7)	20 (12.4)	n/a	n/a	
11	LVD	50 (31.1)	50 (31.1)	40 (131.2)	0.3	
12		50 (31.1)	50 (31.1)	12 (39.4)	0.3	
13		80 (49.7)	80 (49.7)	40 (131.2)	0.3	
14		80 (49.7)	80 (49.7)	12 (39.4)	0.3	
15		50 (31.1)	50 (31.1)	40 (131.2)	0.5	
16		50 (31.1)	50 (31.1)	12 (39.4)	0.5	
17		80 (49.7)	80 (49.7)	40 (131.2)	0.5	
18		80 (49.7)	80 (49.7)	12 (39.4)	0.5	
19	False Positive (STP)	80 (49.7)	n/a	n/a	n/a	SV peak deceleration <0.25g.

TABLE 15—ADOPTED DBS TEST SCENARIOS AND CONDITIONS

Test No.	Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
1	LVS	70 (43.5)	0	n/a	n/a	No SV-to-POV contact during any trial.
2		80 (49.7)	0	n/a	n/a	
3		90 (55.9)	0	n/a	n/a	
4		100 (62.1)	0	n/a	n/a	
5	LVM	70 (43.5)	20 (12.4)	n/a	n/a	
6		80 (49.7)	20 (12.4)	n/a	n/a	
7		90 (55.9)	20 (12.4)	n/a	n/a	
8		100 (62.1)	20 (12.4)	n/a	n/a	
9	LVD	50 (31.1)	50 (31.1)	40 (131.2)	0.3	

<sup>134</sup> National Highway Traffic Safety Administration (2012, June). *Forward-looking advanced braking technologies research report*. <https://www.regulations.gov/document?D=NHTSA-2012-0057-0001>.

<sup>135</sup> National Highway Traffic Safety Administration. (2023, February). *NHTSA's 2022 Light Vehicle Automatic Emergency Braking Research Test Summary*. <http://www.regulations.gov>. Docket No. NHTSA–2023–

0021–0005. This statement is based on the results of the Agency's model year 2021–2022 research test data, which did not include the LVD test conditions that require a 0.3g POV deceleration.



TABLE 15—ADOPTED DBS TEST SCENARIOS AND CONDITIONS—Continued

Test No.	Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV headway (m (ft.))	POV deceleration (g)	Requirement to pass
10 .....		50 (31.1)	50 (31.1)	12 (39.4)	0.3	
11 .....		80 (49.7)	80 (49.7)	40 (131.2)	0.3	
12 .....		80 (49.7)	80 (49.7)	12 (39.4)	0.3	
13 .....		50 (31.1)	50 (31.1)	40 (131.2)	0.5	
14 .....		50 (31.1)	50 (31.1)	12 (39.4)	0.5	
15 .....		80 (49.7)	80 (49.7)	40 (131.2)	0.5	
16 .....		80 (49.7)	80 (49.7)	12 (39.4)	0.5	
17 .....	False Positive (STP) .....	80 (49.7)	n/a	n/a	n/a	SV peak deceleration <0.25g over the base-line peak imparted by manual braking.

g. Use of the ABD GVT and Appropriate Revision(s)

Currently, NHTSA uses the SSV as the POV in NCAP testing of DBS and CIB systems. The SSV, modeled after a small hatchback passenger car, is fabricated from light-weight composite materials including carbon fiber and Kevlar®.<sup>136</sup> To maximize visual realism, the SSV shell is wrapped with a vinyl material that simulates paint on the body panels and rear bumper and a tinted glass rear window. Given the combination of a design that emphasizes being lightweight, use of a towed track to support movement, and its material properties, the SSV has certain limitations during testing; namely, the maximum speed at which it can operate (*i.e.*, ≤56 kph (35 mph)) and maximum relative speed at which the SV can strike it (*i.e.*, 40 kph (25 mph) and lower speed). When operated outside of its intended operational constraints, the SSV can inflict damage to other vehicles and/or be damaged itself. The monorail used to laterally constrain the SSV is visible and secured to the test surface, which could potentially confound camera-based AEB systems. Considering these complications and constraints for testing, NHTSA proposed in its March 2022 RFC notice to use a GVT, mounted to a robotic platform, in lieu of the SSV in future AEB testing because GVTs do not have the same testing limitations.

A GVT, which also resembles a white hatchback passenger car, is meant to represent a vehicle in the subcompact to compact car class. A specific description of the required GVT characteristics is defined in International Organization for Standardization (ISO) 19206–3:2021, and at the time of this notice, there were two companies that produced a GVT as a commercially available product: AB Dynamics, Inc (ABD) and

4activeSystems (4a).<sup>137</sup> Both versions use an internal foam-based frame covered by multiple vinyl outer “skin” sections designed to provide the dimensional, optical, and radar characteristics of a real vehicle that can be recognized as such by camera and radar sensors.<sup>138</sup> In contrast to the SSV, the available GVTs are secured using hook and loop fasteners to the top of a programmable robotic platform which facilitates their movement. When either version of the GVT is impacted at low speed, it is typically pushed off the robotic platform but remains assembled. At higher impact speeds, the ABD GVT breaks apart, as the SV essentially drives through it.<sup>139</sup> At similar impact speeds, the 4a GVT is designed to remain more intact after being pushed off the robotic platform. Both GVT variants are designed to be reconstructed/reset back on top of the robotic platform after an SV-to-POV impact occurs. NHTSA reasoned that a GVT is therefore less likely than the SSV to impart damage to other vehicles, particularly at higher impact speeds.

In its March 2022 RFC notice, NHTSA proposed to use the [ABD] GVT Revision G for its future AEB assessments. This vehicle test device was proposed at the time because it is currently used by other consumer vehicle safety organizations that provide consumer information, including Euro NCAP,<sup>140</sup> as well as many vehicle manufacturers in their internal testing conducted per NCAP test

specifications.<sup>141</sup> As such, by adopting ABD GVT Revision G for NCAP’s AEB testing, NHTSA would embrace another opportunity to harmonize with other consumer information safety rating programs, as mandated by the BIL. The Agency also noted that the ABD GVT would be an appropriate replacement for the SSV in NCAP’s future AEB testing because the test device (1) afforded similar AEB system performance to that of the SSV in comparison testing,<sup>142</sup> and (2) was found to be physically stable and durable when evaluated using straight line and curved path maneuvers for various speeds and lateral accelerations.<sup>143</sup> Accordingly, the Agency reasoned that the ABD GVT Revision G could be used to evaluate more challenging crash scenarios in future NCAP upgrades as well, such as those required for other ADAS technologies (intersection safety assist (intersection AEB) and Opposing Traffic Safety Assist (OTSA)), which would allow harmonization across the program areas. NHTSA did not similarly propose adoption of the 4a GVT because it had not yet evaluated the in-use characteristics of the device as part of its AEB research.

The Agency, recognizing that there have been ongoing revisions to the ABD GVT to address its performance in other crash modes that exercise different ADAS applications, proposed to adopt the latest revision of the test device, Revision G, for NCAP’s AEB testing.

<sup>141</sup> Currently, manufacturers use test results from their internal testing and submit them to NHTSA for NCAP’s recommendation of vehicles that pass its performance testing requirements.

<sup>142</sup> FCW and CIB onset timings for a given vehicle model were found to be highly comparable in the Agency’s CIB characterization testing regardless of whether the SSV or ABD GVT vehicle test device was used. NHTSA notes that ABD GVT Revision E was used for these assessments.

<sup>143</sup> Snyder, A.C., Forkenbrock, G.J., Davis, I.J., O’Harra, B.C., & Schnelle, S.C., *A test track comparison of the global vehicle target and NHTSA’s strikeable surrogate vehicle*, (Report No. DOT HS 812 698), July 2019, <https://rosap.nhtl.bts.gov/view/dot/41936>.

<sup>137</sup> ABD refers to their GVT product as the “Soft Car 360” and 4activeSystems refers to their GVT product as the “4activeC2.”

<sup>138</sup> Snyder, A.C., Forkenbrock, G.J., Davis, I.J., O’Harra, B.C., & Schnelle, S.C., *A test track comparison of the global vehicle target and NHTSA’s strikeable surrogate vehicle*, (Report No. DOT HS 812 698), July 2019, <https://rosap.nhtl.bts.gov/view/dot/41936>.

<sup>139</sup> Id.

<sup>140</sup> <https://www.euroncap.com/en/for-engineers/supporting-information/technical-bulletins/>. See Appendices I & II.

NHTSA reasoned that this latest revision could be utilized for other ADAS technologies proposed for adoption as part of this NCAP upgrade, such as blind spot intervention (BSI), as well as future technologies, such as intersection safety assist (ISA) and opposing traffic safety assist (OTSA). For AEB testing purposes only, NHTSA proposed to accept manufacturer verification data for AEB tests conducted using ABD GVT Revision F as well. It is the Agency's understanding that modifications to the front, side, and oblique aspects of ABD GVT Revision F were incorporated into the company's GVT Revision G. NHTSA reasoned that these changes should not alter the physical characteristics of the rear of the vehicle test device such that a vehicle's performance in the rear-end crash mode (*i.e.*, AEB testing) would be impacted.<sup>144</sup>

Though the Agency used ABD GVT Revision E in its comparison testing with the SSV, it is unclear if/how the small changes made to Revision E to create Revision F may have affected the test track AEB performance.<sup>145</sup> For this reason, NHTSA did not propose to similarly accept manufacturer data for AEB test results derived using ABD GVT Revision E since this revision is no longer in production. Further, NHTSA also did not propose to accept vehicle manufacturer test data derived from alternative vehicle test devices other than that which is specified in NCAP's test procedures, though this was requested in response to NHTSA's November 2015 AEB final decision notice.<sup>146 147</sup> The Agency explained that during its system performance verification testing it has observed several test failures that may be attributed to differences in vehicle test device designs. Therefore, NHTSA proposed to only accept manufacturer self-reported data obtained using tests

<sup>144</sup> To improve the real-world characteristics from the front and side of the vehicle test device, several changes to the radar treatment were integrated into the components of the body for ABD GVT Revision G compared to ABD GVT Revision F, including changes to the skin and wheel treatment. There were also some minor shape changes to the front of the GVT body to improve front radar return and to the side to improve the ability to hold its shape. <http://www.dynres.com/2020/02/25/the-new-global-vehicle-target-gvt-has-arrived/>.

<sup>145</sup> It is the Agency's understanding that the modifications made to the rear of ABD GVT Revision E consisted of adding additional radar-absorbing material to the bottom skirt of the vehicle test device to attenuate internal reflections and reducing the slope of the simulated rear hatchback glass to increase the power of the radar return from the rear aspect.

<sup>146</sup> 80 FR 68604 (Nov. 5, 2015).

<sup>147</sup> Mercedes-Benz requested that NHTSA consider several vehicle test devices and allow manufacturers the option to choose which test device is used for testing.

conducted in accordance with NHTSA test procedures.

Comments were sought on the adoption of the ABD GVT Revision G in lieu of the SSV for AEB testing in NCAP regardless of whether modifications were made to test speeds, deceleration, test scenarios, combining test procedures, et cetera. The Agency also requested comment on whether ABD GVT Revision G was the most appropriate for adoption, and whether ABD GVT Revisions F and G should be considered equivalent for AEB testing.

#### Summary of Comments

##### Use of the ABD GVT Revision G in Lieu of the SSV

Commenters who supported replacing the SSV with the ABD GVT Revision G<sup>148</sup> in NCAP testing included AAA, Adasky, Auto Innovators, BMW, Bosch, CAS, GM, HATCI, Honda, IDIADA, MEMA, Rivian, Subaru, Toyota, and ZF Group.

ZF Group stated it supported adoption of the GVT because it was developed through coordinated efforts. Several commenters, including ZF Group, HATCI, Honda, and GM, stated the GVT more reasonably simulates the characteristics (*e.g.*, appearance, camera/radar detection, etc.) of actual vehicles. Auto Innovators noted that NHTSA participated in the GVT's development and 360-degree correlation to real-world vehicles but has yet to adopt it for use in its testing.

Toyota, GM, and Auto Innovators approved the use of the GVT because of its design and inherent durability. The commenters mentioned that the GVT is both less susceptible to damage compared to the SSV and less likely to induce damage to the SV, which naturally improves test efficiency and lowers testing costs. HATCI agreed that the GVT would limit damage to the SV and, along with Auto Innovators, asserted that it would promote a safer testing environment.

Intel encouraged NHTSA to adopt the GVT because the Agency showed that performance differences between the two vehicle test devices were "negligible" and real-world data has not revealed negative consequences due to its use. Furthermore, the company, along with Auto Innovators, Rivian, HATCI, Honda, and Adasky, favored the GVT's adoption because it would harmonize with Euro NCAP and other consumer programs, which Rivian specifically asserted would permit

<sup>148</sup> While not specifically mentioned in most comments, NHTSA assumes (unless otherwise indicated) responses to this topic pertained to the ABD GVT Revision G, as proposed.

consistency in testing and reduce overall test burden and costs. Bosch supported adopting the GVT because it is specified in International Organization for Standardization Approved Work Item (ISO/AWI) 19206-3:2021.<sup>149</sup> Auto Innovators further added that the GVT would improve repeatability for LVD tests. IDIADA suggested that the SSV was "obsolete," and GM and Auto Innovators mentioned that it had limited functionality (*i.e.*, it is acceptable only for rear-end tests with no offset or angular requirements). CAS agreed with the sentiment expressed by these last two commenters and asserted that the GVT should replace the SSV because it will allow the Agency to perform higher speed tests and additional crash scenarios, as well as accommodate testing for other ADAS technologies, which will promote more safety.

DRI mentioned that the GVT should be used in rear-end tests with 100 percent overlap when closing speeds exceed 40.2 kph (25 mph); however, the laboratory asserted that the SSV remains appropriate for testing (and offers equivalent results to the GVT) at closing speeds of 40.2 kph (25 mph) or less. TRC expressed similar sentiments. HATCI also recognized the SSV's viability for lower speed rear-end testing but argued that since it is limited to low speed rear-end tests, whereas the GVT can accommodate higher speeds and additional AEB and other ADAS technology test scenarios, the SSV should ideally be replaced with the GVT in NHTSA testing. Auto Innovators and GM agreed with HATCI but suggested it would be appropriate to "adopt a phase-in approach" for replacement of the SSV with the GVT since some manufacturers may currently be using the SSV for testing. Both Auto Innovators and GM suggested that NHTSA accept test data derived using either vehicle test device for a period of time.

In addition to their recommendation that the Agency adopt the GVT, Subaru and Auto Innovators requested that NHTSA harmonize with Euro NCAP with respect to the GVT moving platform, a GST100/120 or 4activeFB-Large, manufactured by ABD and 4a, respectively, in addition to adopting the related version of the GVT, to limit the cost burden to manufacturers.

<sup>149</sup> ISO/AWI 19206-3:2021, "Road vehicles—Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 3: Requirements for passenger vehicle 3D targets."

### Consideration of Other ABD GVT Revisions and Alternative GVTs

Some commenters supported only adoption of Revision G of the ABD GVT at this time, including BMW, Bosch, MEMA, Toyota, and ZF Group. BMW recommended use of the ABD GVT Revision G to harmonize with other consumer testing programs, including Euro NCAP. As mentioned previously, Intel also supported efforts to harmonize where possible. IDIADA was another commenter to support using ABD GVT Revision G for NCAP's AEB testing. IDIADA opined that ABD GVT Revision G is the current standard version and "offers more stable detection." Similar to its prior comments for use of the GVT in general, Bosch stated that ABD GVT Revision G was appropriate to incorporate because it fulfills ISO/AWI 19206-3:2021 requirements; however, the commenter also suggested that NHTSA refer to the ISO standard for incorporation rather than a GVT revision to allow for more flexibility in market participation.

Several commenters expressed support for ABD GVT Revision G in addition to "lower" ABD GVT revisions (*i.e.*, E, F) at this time. Auto Innovators, CAS, DENSO, DRI, FCA, GM, HATCI, Honda, Subaru, and TRC all opined that ABD GVT Revisions F and G should be considered equivalent for the purpose of AEB testing covering the current NCAP test scenarios. DENSO and Honda (which expressed a preference for ABD GVT Revision G) mentioned that since the rear components of both ABD GVT Revisions F and G have "equivalent physical characteristics," they would be expected to perform the same in scenarios simulating rear-end crashes. However, a few of the commenters who supported adopting "lower" ABD GVT revisions for the proposed AEB test matrix, including Auto Innovators and GM, remarked that they would recommend use of only "higher" ABD GVT revisions (*e.g.*, ABD GVT Revision G and newer) in the future to improve correlation if additional test conditions with different approach angles and/or directions are added to Agency testing.

Some commenters, such as GM, supported adoption of ABD GVT Revision E in addition to ABD GVT Revisions F and G. Auto Innovators and HATCI preferred ABD GVT Revision G but additionally supported the inclusion of both ABD GVT Revisions E and F for use in current NHTSA NCAP test conditions. HATCI suggested that the Agency allow use of ABD GVT Revisions E and F in case of damage or supply shortages. CAS did not agree that the Agency should accept data from

tests utilizing ABD GVT Revision E if that version is "obsolete" and ABD GVT Revisions F and G are now available.

Regarding the timeline and preparation for inclusion, HATCI requested that manufacturers be given a two-year lead-time to align with product development cycles if the Agency was to adopt an alternative GVT revision in the future. Auto Innovators requested that NHTSA work with other NCAPs to harmonize development of future versions of a global vehicle test device suitable for testing.

### Response to Comments and Agency Decisions

#### Use of the ABD GVT Revision G in Lieu of the SSV

Commenters overwhelmingly supported replacing the SSV with the ABD GVT Revision G in NCAP testing, with many echoing points expressed by NHTSA in its March 2022 RFC notice. Most notably, commenters stated that adoption of the ABD GVT Revision G permits harmonization with other consumer information programs, including Euro NCAP, and allows the Agency to incorporate higher speed tests and additional test scenarios, including those for other ADAS technologies. The ABD GVT Revision G is an appropriate surrogate for use in NCAP testing given its physical characteristics, material properties, and durability, especially when compared to the SSV. The vehicle test device complies with ISO/AWI 19206-3:2021, "Road vehicles—Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 3: Requirements for passenger vehicle 3D targets"<sup>150</sup> with respect to the specifications outlined for radar cross section, reflectivity, color, and physical dimensions. As such, it is considered to be representative of a real vehicle. Further, in the Agency's most recent high-speed AEB research tests, the ABD GVT Revision G was found capable of operation at higher speeds and durable enough to receive impacts at higher relative speed than possible with the SSV. Accordingly, NHTSA plans to use the ABD GVT Revision G to conduct NCAP testing to measure the performance of AEB systems beginning with model year 2026 vehicles.

Although the Agency did not specify in its RFC notice a specific robotic platform to be used with the GVT, a few commenters recommended that NHTSA harmonize its platform(s) with Euro NCAP's to decrease burden. Because the GVT's movement will be subjected to

specifications (speed, deceleration magnitude, etc.), the Agency does not see a substantial need to specify which platform must be used to achieve the appropriate POV kinematics.

### Consideration of Other ABD GVT Revisions and Alternative GVTs

The Agency notes that several commenters favored adoption of ABD GVT Revision E and/or F in addition to Revision G, or desired a phase-in period for adoption of ABD GVT Revision G. Since ABD GVT Revision G only includes changes to the front and sides of Revision F, it is reasonable to continue to accept data using ABD GVT Revision F for LVS, LVD, and LVM AEB test scenarios for a period of time. NHTSA will accept manufacturers' AEB self-reported data for tests that use either ABD GVT Revisions F or G for the first two model years under the new ADAS testing program (*i.e.*, for model year 2026 and model year 2027). For model year 2028 and beyond, the Agency will only accept AEB data generated using the ABD GVT Revision G vehicle test device. This two-year period allows sufficient lead-time for vehicle manufacturers to procure the required GVT and complete testing for model year 2028 models. Since the Agency is making extensive changes to the AEB test procedures, including integrating FCW evaluations (as will be discussed in a later section), no test data collected for model year 2025 vehicles will carry over to model year 2026. Therefore, it is expected that vehicle manufacturers will have to conduct the updated AEB tests for all vehicle models in their model year 2026 fleet to claim AEB NCAP credit. Although the Agency anticipates that most manufacturers will utilize ABD GVT Revision G during testing conducted for their model year 2026 models, the Agency recognizes that manufacturers may experience procurement delays when obtaining ABD GVT Revision G such that only the Revision F version of the test device may be available for testing. Therefore, providing a short lead-time to account for this possibility is appropriate. For its own testing, NHTSA will utilize ABD GVT Revision G to validate AEB system performance beginning with model year 2026 vehicles.

NHTSA has decided it will not accept data obtained from tests utilizing ABD GVT Revision E for the 2026 model year and beyond. The Agency agrees with CAS that this version should be considered "obsolete" since it is no longer in production. Further, data gathered from testing conducted with the SSV will also not be eligible for credit starting in model year 2026. As

<sup>150</sup> <https://www.iso.org/standard/70133.html>. May 2021.

mentioned in the March 2022 RFC notice, NHTSA plans to only accept self-reported manufacturer data from tests conducted in accordance with its test procedures to uphold NCAP's credibility. This requirement includes use of the prescribed test device, when applicable. Vehicles failing to provide passing performance during the Agency's assessments will not receive credit for AEB technology, regardless of whether passing results were provided by the vehicle manufacturer in response to NCAP's annual data information request.

Although nearly all commenters supported adoption of Revision G of the ABD GVT, the Agency recognizes that Bosch recommended NHTSA incorporate by reference ISO/AWI 19206-3:2021 in NCAP, rather than stipulate a specific vehicle test device for use in the program's AEB tests. The Agency has not conducted thorough evaluations of alternative test devices, such as the 4a GVT, to ensure they invoke equivalent vehicle/system performance as the ABD GVT Revision G in the Agency's AEB tests. Therefore, at this time, the Agency is specifying use of the ABD GVT Revision G in the NCAP AEB tests to mitigate variability between the Agency's test results and those submitted by the manufacturer. As noted earlier, the ABD GVT Revision G meets the ISO 19206-3:2021 specifications.

#### Vehicle Test Device Specifications

Since AEB systems currently on the market may utilize camera-, radar-, and/or lidar-based sensors (or some combination thereof) to provide automatic emergency braking, the vehicle test device adopted for NCAP's AEB testing must meet certain specifications to ensure the SV recognizes the target as a real-world vehicle to ensure real-world benefit and assure test repeatability and reproducibility. These specifications include (1) physical dimensions, such as vehicle width; (2) features that are identifiable on the rear of a typical passenger vehicle, such as tail lamps, reflex reflectors, windows, and the rear license plate; (3) those addressing visual and near infrared specifications, such as for the exterior of the vehicle and also for various surface features, including tires, windows, and reflex reflectors; and (4) radar reflectivity, since many AEB systems rely on radar sensors in some capacity to identify the presence of other vehicles. Specifications for acceptable vehicle test devices are defined in ISO 19206-3:2021, and as mentioned, ABD states that the GVT Revision G meets these requirements as

manufactured. Given this, it is unnecessary to prescribe additional specifications for the ABD GVT Revision G for NCAP testing, as compliance with the ISO standard in its entirety should be inherent. That said, the Agency will reference ISO 19206-3:2021 in NCAP's AEB test procedures to ensure any device utilized for Agency testing complies with the standard's specifications.

#### h. DBS Brake Application Timing

The Agency proposed that, should it decide to continue to perform DBS testing in NCAP, in lieu of the current procedure of initiating manual braking at prescribed TTCs for each test scenario,<sup>151</sup> brake application for all LVD, LVS, and LVM DBS test scenario and speed combinations would occur at a time corresponding to 1.0 second after the FCW is issued. NHTSA proposed this change would apply regardless of whether automatic braking occurs after the FCW but before initiation of the manual brake application. The Agency reasoned this procedural modification would better represent real-world use and driving conditions while also being in basic agreement with the approach specified for FCW performance evaluations in Euro NCAP's AEB Car-to-Car systems test protocol.<sup>152</sup> Euro NCAP requires that brake application begin 1.2 seconds after issuance of the FCW. As an alternative to this proposal, NHTSA also requested comment on appropriate TTCs for the modified test conditions.

#### Summary of Comments

Many commenters, including Toyota, Honda, GM, and Tesla, agreed with the Agency's proposal to trigger manual brake application 1.0 second after the FCW is issued in DBS testing. GM supported the proposed changes for the Agency's DBS test procedure, stating that such modifications would better align with protocols used by other NCAPs and "provide a more comprehensive assessment of overall system performance." GM, Honda, and ZF Group commented that the proposed time of 1.0 second after issuance of an FCW would reasonably simulate the time it might take a driver to depress the vehicle's brake after an FCW is issued. Tesla agreed that this was a reasonable method of replicating human behavior but cautioned the Agency to use factory default settings for configurable FCW

timing settings to ensure consistency across vehicle models.

Auto Innovators, Bosch, IDIADA, and Intel agreed with the Agency's proposal of applying the brake 1.0 second after the FCW was issued in DBS tests but suggested that a brake application timing of 1.2 seconds after the FCW, as used by Euro NCAP, would also be reasonable. Like other commenters, Auto Innovators stated that triggering a brake application at a prescribed time after issuance of an FCW in the Agency's DBS tests rather than at a fixed TTC is more appropriate since the intent of an FCW is to compel the driver to react; thus, it should be more representative of the driver's behavior under real-world conditions. The group added that aligning with Euro NCAP's brake activation timing would reduce test burden.

Rivian stated the Agency should adopt a "lower time gap" between the FCW and manual brake application because CIB will often activate and move the brake pedal before DBS activation, (as the Agency acknowledged in its 2022 RFC notice), such that not all DBS systems may be effectively assessed if the Agency were to adopt the proposed test procedure modifications. Similarly, in agreement with its recommendation to conduct integrated assessments for FCW, CIB, and DBS collectively "to better assess the total safety benefit," BMW stated that once CIB activates, "any DBS influence is irrelevant."

CAS recommended that the Agency should base brake application timing for DBS testing on actual human driver responses to an FCW.

#### Response to Comments and Agency Decisions

To provide a comprehensive assessment of AEB system performance, the Agency has decided to initiate manual (robotic) brake application in NCAP's LVS, LVD, and LVM DBS tests at a time that corresponds to  $1.0 \pm 0.1$  seconds after issuance of the required FCW signals (*i.e.*, both signals for any bimodal warning, as will be discussed later) instead of at prescribed TTCs, as is done currently. The prescribed 1.0-second delay is based on the time it takes a driver to react when presented with an obstacle.<sup>153</sup> If the FCW (*i.e.*, one or more of the required two signals) is *not* issued in an LVS, LVD, or LVM DBS

<sup>151</sup> The TTCs prescribed for actuator braking in NCAP's DBS test procedure are 1.1 seconds, 1.0 second, and 1.4 seconds, respectively, for the LVS, LVM, and LVD scenarios.

<sup>152</sup> European New Car Assessment Programme (Euro NCAP) (November 2022), *Test Protocol—AEB Car-to-Car systems, Version 4.1.1*. See Annex A.

<sup>153</sup> Fitch, G.M., Blanco, M., Morgan, J.F., Rice, J.C., Wharton, A., Wierwille, W.W., & Hanowski, R.J. (2010, April) *Human Performance Evaluation of Light Vehicle Brake Assist Systems: Final Report* (Report No. DOT HS 811 251) Washington, DC: National Highway Traffic Safety Administration, p. 101.

test, the SV accelerator pedal will not be released, and the brake will not be manually applied prior to impact with the vehicle test device (*i.e.*, POV).<sup>154</sup> This planned procedural change will not apply to the false positive DBS assessment since an FCW is not expected during this assessment (though it may occur). For the false positive DBS test, the SV brakes will be applied (after throttle release)<sup>155</sup> at a TTC of 1.1 seconds, corresponding to a nominal distance of 24.4 m (80.2 ft.) from the edge of the STP.

NHTSA notes that commenters were generally supportive of this proposed change and agreed that such an approach better represents human behavior during real-world driving. Several respondents also noted this approach aligns well with Euro NCAP's AEB Car-to-Car systems test protocol, which specifies that braking is applied 1.2 seconds after the FCW is issued. Though some commenters requested that the Agency harmonize precisely with Euro NCAP's specification, the Agency's requirement is reasonable, and NHTSA has no data showing that a reaction time of 1.2 seconds is more appropriate. Previous NHTSA research has shown it takes drivers 1.04 seconds, on average, to begin applying the brake when presented with an unexpected obstacle, and 0.8 seconds when presented with an anticipated obstacle.<sup>156</sup> For similar reasons, NHTSA reasons it is inappropriate to adopt a lower time gap between the FCW and manual brake application, as requested by Rivian.

Regarding Rivian's concern that CIB may activate and move the brake pedal after the time of the FCW but before the brake pedal is manually applied one second later during DBS testing, the Agency has observed this phenomenon and does not consider it problematic for several reasons. First, although the presence of CIB braking may negate the need for DBS activation (*i.e.*, the supplemental braking typically associated with DBS is not required since the CIB system may already be braking the vehicle at its maximum

<sup>154</sup> In this instance, the vehicle will also fail the trial run.

<sup>155</sup> For the false positive DBS tests, the subject vehicle accelerator pedal will be released at any rate, such that it is fully released within 500 milliseconds, either when a forward collision warning is given or at a headway that corresponds to a time-to-collision of 2.1 seconds, whichever occurs earlier.

<sup>156</sup> Fitch, G.M., Blanco, M., Morgan, J.F., Rice, J.C., Wharton, A., Wierwille, W.W., & Hanowski, R.J. (2010, April) *Human Performance Evaluation of Light Vehicle Brake Assist Systems: Final Report* (Report No. DOT HS 811 251) Washington, DC: National Highway Traffic Safety Administration, p. 101.

capability), the manual brake application timing relative to the FCW is not changed and the crash avoidance performance requirement remains in place, so the test severity is fully retained. Second, tests where the brakes are manually applied after a CIB intervention has been initiated provide an opportunity not only to demonstrate the vehicle can avoid the POV, but also to ensure that the driver's input does not override the CIB system such that it reverts to the braking level input by the driver alone (*i.e.*, without any braking contribution from AEB), since doing so would be expected to result in contact with the POV, and therefore a test failure. Third, the Agency defines the onset of SV manual brake application as when the force applied to the brake pedal is  $\geq 11$  N (2.5 lbf), not when the brake pedal physically moves. This is a consideration for both CIB and DBS tests when assessing whether a given test trial is valid (*i.e.*, performed properly). For CIB testing, the Agency's test procedure prohibits the driver from applying force to the brake pedal during the test's validity period. For DBS testing, the onset of SV manual braking is important when assessing manual brake application timing relative to the onset of the FCW.

Given the Agency's decision to initiate manual (robotic) brake application in NCAP's LVD, LVS, and LVM DBS tests at a time that corresponds to  $1.0 \pm 0.1$  seconds after issuance of the required FCW signals, the Agency has also tried to limit the effect of different FCW timing settings (*e.g.*, early vs. late) on AEB testing outcomes to best ensure consistency across vehicle models, as Tesla suggested. As discussed later in this final notice, NHTSA has decided to specify use of the middle (or next latest) FCW setting in lieu of the default setting (as Tesla requested) or the latest alert setting for NCAP testing. This is because the warning setting most preferred by drivers will likely correspond to the default setting and should generally fall in the middle of the range of driver setting preferences that span either earlier or later alert settings.

#### i. SV Throttle and Brake Application Overlap in DBS Tests

The Agency's existing DBS test procedure states that the accelerator pedal must be fully released within 500 ms after an FCW is issued but prior to the onset of the manual SV brake application by a robotic brake controller, a timing currently dictated in the test procedure (as prescribed TTCs) for each test condition. As mentioned previously, if the Agency decided to

continue to perform DBS testing in NCAP, it proposed to revise the time when the manual (robotic) brake application is initiated during testing to a time that corresponds to 1.0 second after the FCW is issued, even in instances where automatic braking (*i.e.*, CIB) occurs after the FCW but before initiation of the manual brake application. However, as an alternative to this proposed procedural change, NHTSA also requested comment on appropriate revised TTCs for the modified DBS test conditions. In the event the Agency decided to proceed with this alternative proposal to adopt revised TTCs, NHTSA proposed that the current test specifications for pedal release timing (*i.e.*, within 500 ms after an FCW is issued, but prior to the onset of the prescribed manual SV brake application by a robotic brake controller) would be maintained.

In its March 2022 RFC notice, the Agency recognized that the current test requirements for pedal release timing can be problematic if no FCW is issued or if the alert happens very close to the prescribed brake activation timing, because the throttle may still be depressed (since no warning was issued, or it was issued late) while the SV brakes are applied by the robot at the prescribed TTC. The Agency documented this possibility (*i.e.*, where the SV throttle and brake pedals are applied at the same time) during track testing and provided a recommendation that up to a 250 ms overlap be allowed.<sup>157</sup> In other words, once the SV driver detects that the robot has applied the brakes, the driver will have 250 ms (instead of 500 ms) to fully release the accelerator. A test run would not be valid unless this criterion is met.

Given the Agency's findings and recommendation, NHTSA sought comment on whether it would be acceptable to modify NCAP's DBS test procedure (in the event it adopted revised TTCs for the modified DBS test conditions) to allow a 250 ms overlap of SV throttle and brake pedal application in instances where no FCW has been issued by the prescribed TTC in a DBS test, or where the FCW is issued very close to brake activation.

#### Summary of Comments

Several commenters, including Auto Innovators, FCA, GM, and Rivian, stated that a 250 ms overlap for SV throttle and brake pedal application was acceptable. Rivian added that it appropriately

<sup>157</sup> Forkenbrock, G.J., & Snyder, A.S. (2015, June). *NHTSA's 2014 automatic emergency braking test track evaluations* (Report No. DOT HS 812 166), Washington, DC: National Highway Traffic Safety Administration.

simulates panic braking within 250 ms of an FCW in real-world driving situations. Honda also agreed that such an overlap was unobjectionable “as long as the application of SV throttle is not excessive” since this could possibly affect braking performance.

In contrast, IDIADA and Intel did not support any amount of throttle and brake overlap. IDIADA commented that the DBS test procedure is intended to simulate a driver’s normal response in situations represented by the test scenarios. As such, the laboratory asserted there should be no overlap between brake and throttle application since the driver would normally be operating both pedals with one foot, and therefore could not depress both simultaneously. Intel expressed a similar sentiment.

TRC noted that, as not all throttle robots permit application of both the brake and throttle at once, some test entities may have to purchase new equipment if NHTSA was to adopt this test procedural change.

#### Response to Comments and Agency Decisions

NHTSA has decided not to adopt a 250 ms overlap for testing scenarios, despite several commenters stating that such an overlap is acceptable. The 250 ms overlap is unnecessary because it has implemented requirements in NCAP’s LVD, LVS, and LVM DBS tests to (1) fully release the SV’s accelerator pedal (at any rate) within 500 ms after an FCW is issued (whether it be before or after automatic braking has begun), and (2) initiate manual (robotic) brake application at a time that corresponds to  $1.0 \pm 0.1$  seconds after issuance of the required FCW signals (*i.e.*, any dual-modality alert, as discussed later) instead of at currently prescribed TTCs.

In any situation, the throttle should be fully released for a minimum of 500 ms prior to manual brake application. This manual (robotic) braking procedure aligns with comments received from IDIADA and Intel, both of which stated it was inappropriate for throttle depression to overlap with brake application. The Agency agrees with IDIADA that NCAP’s DBS test procedure should simulate real-world driving conditions, where the driver’s foot would be removed from the throttle prior to depressing the brake. The changes NHTSA has made to throttle release and robotic brake application timing requirements reflect that intention.

NHTSA also asserts the possibility of SV throttle and brake application overlap does not exist for the false positive DBS assessment. In the false

positive DBS test, issuance of an FCW is not expected (though it may occur). As such, the SV throttle is to be released within 500 ms of the prescribed TTC (2.1 seconds) if no FCW is issued by the specified time. If an FCW is issued, the SV throttle is released within 500 ms of the warning. In both situations, the SV brakes are then to be applied at a TTC of 1.1 s, which corresponds to a nominal distance of 24.4 m (80.2 ft.) from the edge of the STP. Like the LVD, LVS, and LVM DBS tests, the SV accelerator should always be fully released for a minimum of 500 ms prior to brake application in the false positive DBS test, regardless of whether an FCW is issued. NHTSA notes that no commenters suggested revised TTCs for the false positive test condition. As such, the Agency will maintain the current TTC requirement for the 80 kph (49.7 mph) false positive test condition. This is reasonable given the same TTC requirements are currently specified for both the 40.2 kph (25 mph) and 72.4 kph (45 mph) test speeds.

Finally, TRC’s contention that some braking robots are not able to apply both the brake and accelerate at the same time is no longer a concern, because overlap between the SV throttle and manual brake application is now avoidable for all DBS tests due to the adopted throttle release and brake application timing requirements.

#### j. Addition of Manual Brake Application Controller Option

To achieve accurate, repeatable, and reproducible SV brake pedal inputs during NCAP’s DBS tests, NHTSA uses a programmable brake controller, set to one of two closed-loop control modes—constant pedal displacement or hybrid feedback—to command the necessary brake force.<sup>158</sup>

The Agency is incorporating a third manual brake application controller option, a force-only feedback controller, which will provide another useful method of brake application. The force feedback controller is substantially similar to the hybrid controller with the commanded brake pedal position omitted, leaving only the commanded brake pedal force application.

For the force feedback procedure, the commanded brake pedal application is the brake pedal force that results in a mean deceleration of 0.4g in the absence of AEB system activation. The mean deceleration is the deceleration over the

time from when the commanded brake pedal force is first achieved to 250 ms before the vehicle comes to a stop. The force controller applies a force of at least 11.1 N (at an unrestricted rate) to the brake pedal to achieve the commanded brake pedal force within 250 ms. The force controller may overshoot the commanded force by any amount up to 20 percent. If such an overshoot occurs, it must be corrected within 250 ms from when the commanded force is first achieved. The average pedal force must be maintained within 10 percent of the commanded brake pedal force from 250 ms after the commanded pedal force occurs until test completion.

#### k. Regenerative Braking

In its March 2022 RFC notice, the Agency noted that regenerative braking<sup>159</sup> may influence vehicle performance during its AEB tests and create complications for DBS testing.

Regenerative braking, which has become more common as electric vehicles have begun to proliferate the fleet, slows a vehicle when the accelerator pedal is released. As such, a vehicle that has regenerative braking may exhibit a significant speed reduction prior to the onset of AEB-induced braking during the Agency’s CIB and DBS testing, particularly in instances where the FCW is issued early, since the vehicle’s accelerator pedal is to be fully released upon the issuance of the FCW. Furthermore, a relatively high deceleration resulting from regenerative braking can introduce complications during DBS testing, as only a relatively small increase in braking from the braking actuator would be required to provide the necessary combined 0.4g deceleration.<sup>160</sup>

To limit the influence of regenerative braking during AEB testing, NHTSA proposed to select the “off” setting, or the setting that provides the lowest deceleration when the accelerator is fully released for those vehicles offering multiple regenerative braking settings (*e.g.*, less aggressive, nominal, more aggressive). The Agency proposed to test with the least aggressive setting (or the “off” setting) over the “nominal” setting for two reasons. First, NHTSA believed

<sup>159</sup> Regenerative braking slows a vehicle down when the accelerator pedal is released, which helps traditional brakes. It also recovers kinetic energy that would otherwise turn into heat by converting it into electrical energy for storage in onboard propulsion batteries. Regenerative braking is a common feature in electric-powered vehicles.

<sup>160</sup> For instance, if the regenerative braking from simply releasing the accelerator pedal results in 0.3g braking, the additional braking required from the actuator to achieve a total deceleration of 0.4g would be a very low force and/or brake pedal displacement.

<sup>158</sup> National Highway Traffic Safety Administration (2015, October), *Dynamic brake support performance evaluation confirmation test for the New Car Assessment Program*, <http://www.regulations.gov>, Docket No. NHTSA–2015–0006–0026.

that the least aggressive (or “off”) regenerative braking setting would be the setting most likely to produce comparable performance to vehicles that are not equipped with a regenerative braking feature. Second, the Agency reasoned that the least aggressive setting would likely afford “worst case” performance during testing, since it should generate the lowest deceleration and thus allow the vehicle to travel faster at the onset of AEB braking. The Agency did not propose to make any procedural modifications for vehicles that have regenerative braking that cannot be switched off or adjusted, since those vehicles should operate similarly during testing as compared to real-world driving.

Comments were requested on whether the proposed setting selection was appropriate. NHTSA also requested comment on whether regenerative braking could introduce additional testing issues for the Agency’s AEB testing, such as those described, along with recommendations for test procedural changes to best address them.

#### Summary of Comments

Most commenters agreed with the Agency’s proposal to select the “off” setting during AEB NCAP testing. However, a few respondents favored the “Default” setting or letting manufacturers choose the setting they preferred.

#### Choose “Off” or the Lowest Setting

Commenters who favored turning regenerative braking “off” and/or selecting the lowest regenerative braking setting for AEB testing included Advocates, BMW, CAS, FCA, GM, Honda, Intel, and TRC. Intel commented that choosing the regenerative braking setting that is considered “worst case” (*i.e.*, “off”) is “reasonable,” while CAS remarked that NHTSA should evaluate ADAS systems in “the least favorable foreseeable circumstances.” GM remarked that it was most appropriate to conduct a worst-case performance assessment for electric vehicles (*i.e.*, regenerative braking “off”) since it is currently unknown what percentage of drivers release the accelerator pedal prior to, or during, AEB activation (such that regenerative braking would engage). BMW asserted that selecting the “off” or lowest setting for regenerative braking is appropriate because choosing a setting that induces high regenerative braking may unfairly skew AEB test results. Advocates agreed that the regenerative braking setting should be set to “off” unless there is no way to disable it, and Honda commented that NHTSA’s

approach seems “reasonable for most vehicles” for AEB and FCW assessments.

A few commenters favored the “off” or lowest setting for regenerative braking because alternative settings may cause complications for testing. TRC and GM mentioned that the “off” or lowest settings simplify test execution. TRC added that they have seen instances where a test cannot be properly conducted per the applicable procedure to create a crash-imminent situation because of early FCWs coupled with high regenerative braking. FCA noted that disabling regenerative braking improves test repeatability, particularly for DBS tests, due to “different brake pedal behavior when transitioning from regeneration to braking.” For this reason, the automaker recommended that the Agency select the “off” setting in the near-term and switch to an alternative setting (resulting in a “more complicated test”) if real-world data supports this change. GM agreed that selecting the “off” setting for regenerative braking would lead to more consistent testing for electric vehicles.

#### Choose the “Default” Setting

In lieu of turning regenerative braking “off” or to the lowest setting for AEB testing, Rivian, Tesla, and HATCI stated that NHTSA should use the factory default setting, as this setting is more consistent with real-world driving. HATCI commented that an internal study of Hyundai and Kia owners revealed that most owners do not change the ADAS settings from the factory default settings after purchasing a vehicle.<sup>161</sup> As such, the commenter stated the Agency should only deviate from default settings for testing purposes if there is a need to do so to ensure safe test conduct. Given these findings for ADAS settings, HATCI encouraged NHTSA to conduct a similar fleet-wide study of customer-selected regenerative braking settings before incorporating related test procedure changes. Similarly, Tesla mentioned that the company’s fleet data has shown that over 80 percent of Tesla vehicles on the road use the default setting for regenerative braking. Like other commenters above, the manufacturer acknowledged that different regenerative braking settings will generate different AEB performance. Similar to TRC, Tesla mentioned that, depending on the regenerative braking setting selected, a vehicle may not even

need to activate AEB in some test scenarios because regenerative braking effectively slows the vehicle to a stop and prevents it from making contact with the vehicle test device.

#### Let Manufacturers Specify the Setting

Auto Innovators explained that they were not opposed to turning regenerative braking “off” for electric vehicles but requested that NHTSA allow vehicle manufacturers to specify the regenerative braking setting they want to be tested (“off” or otherwise) for each vehicle/test.

#### Single-Pedal Operation Considerations

Honda and Auto Innovators requested that NHTSA amend the AEB test procedures, where appropriate for electric vehicles, to clarify what it means for the throttle to be “fully released” in vehicles that use one pedal for both acceleration and braking. To accommodate vehicles using one pedal operation, the commenters suggested that “fully released” should translate to “an accelerator position that provides deceleration equivalent to that of engine braking, about 0 to 0.1 g.” BMW expressed a similar sentiment.

#### Response to Comments and Agency Decisions

NHTSA has decided that, for NCAP’s AEB tests, it will adopt its initial proposal to select the “off” setting for regenerative braking, or the setting that provides the lowest deceleration when the accelerator is fully released for those vehicles offering multiple regenerative braking settings (*e.g.*, less aggressive, nominal, more aggressive). Although some commenters shared the assertion that this setting is not reflective of real-world use, it is prudent to perform testing to represent the worst reasonable case scenario, a sentiment shared by multiple respondents. By taking such an approach, the vehicle’s speed just prior to either manual (robotic) or automatic braking will be retained to the greatest extent possible, which should allow the Agency to most objectively evaluate the vehicle’s ability to avoid a crash without introducing confounding factors caused by early FCWs or significant braking prior to the onset of AEB. In a similar vein, selecting the “off,” or least aggressive regenerative braking setting, should improve test execution, and thus test repeatability, and allow the Agency to evaluate actual system performance more effectively, as several commenters mentioned. Also, selecting the “off” setting promotes a level of fairness. This is particularly important for a consumer information program in which comparisons may be made between

<sup>161</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-3862>. HATCI’s internal research covered nine focus groups of Hyundai and Kia vehicle owners from 2017–2019 from the Chicago, IL area (N=24) and an online survey.



vehicle model test results. If the Agency instead allowed vehicle manufacturers to specify any regenerative braking setting that they prefer, as Auto Innovators suggested, this could result in AEB performance that is not comparable to other tested vehicles in the fleet, and thus, not necessarily consistent in a way consumers might expect.

With respect to accelerator pedal input and release for vehicles equipped with a one pedal operation mode, by setting regenerative braking to “off,” one pedal operation will also effectively be disabled in most instances. However, in agreement with the decision made above to select settings that provide the lowest deceleration in order to represent the worst reasonable case scenario, the Agency will also select the “off” setting for one pedal operation, for those vehicles offering selectable settings for modes of operation. If one pedal operation cannot be disabled (*i.e.*, regenerative braking is always enabled and one pedal operation cannot be switched “off”), the vehicle will be tested with the moderate deceleration level ensuing from accelerator pedal release. At this time, accelerator pedal release need not be defined beyond the definition applicable to vehicles that do not permit one pedal operation. The Agency will require the accelerator pedal to be fully released within 500 ms after the FCW is presented for all vehicles, including those equipped with a one pedal operation mode.

For electric vehicles, propulsion batteries will be charged at 80 percent or higher capacity during NCAP’s AEB testing. This decision aligns well with the Agency’s decision to select the setting for regenerative braking that provides the lower deceleration when the accelerator is fully released. Performing AEB assessments with a higher SOC should limit regenerative braking.

#### 1. Refinement and Clarification of Test Procedures

In addition to the changes discussed herein for NCAP’s AEB test procedures, the Agency also sought public comment on whether there are any aspects of NCAP’s current FCW, CIB, and/or DBS test procedure(s) that need further refinement or clarification. Commenters responded with recommendations for general test procedure clarifications, additions, and refinements. These recommendations tended to fall into three general categories: the use of robotic test equipment, tolerances currently used, and general test procedure changes to either increase the

applicability of results or to increase repeatability.

#### Summary of Comments

##### Robotic Test Equipment

Auto Innovators requested that driver braking be implemented in a “more realistic manner.” The group asserted that, in general, a brake robot “adds a degree of reliability to the test operation.” Accordingly, the organization suggested that the Agency eliminate human operation to the extent possible for all AEB tests and specify use of a robot-controlled POV test device. Toyota also asserted that the Agency should require the SV to be controlled by a steering robot controller since vehicle test devices can be controlled by a GST system.

GM and Auto Innovators requested that NHTSA harmonize the robotic test equipment and settings used in NCAP’s tests with other equipment used by industry and other NCAPs globally. However, at a minimum, Auto Innovators requested NHTSA refine the brake robot procedure to add more detailed instructions about calibration and setup. Both commenters mentioned that one of NHTSA’s test contractors uses different robotic test equipment than that which is commonly used, and the robot parameters are applied slightly differently in NCAP’s tests. Per GM, troubleshooting performance issues may be difficult when differences arise because of various equipment and settings.

TRC asked for NHTSA to clarify the meaning of the test procedure phrase “smooth throttle inputs.” The commenter mentioned that data from brake and throttle robots, which are helpful to maintain speed tolerances, may appear “noisy” even with tuning. As such, they requested clarification on NHTSA’s definition of “smooth” in such instances. Auto Innovators requested that accelerator pedal release rates be defined in general.

IDIADA noted that regenerative braking may affect the speed control during testing when regenerative braking is activated, such that the throttle robot may “over-throttle and result in an override action.” To prevent the occurrence of a system override, the commenter suggested that NHTSA “ensure that [the] throttle robot is kept on [the] hold position prior to AEB activation.”

##### Changes to Tolerances

Honda and Auto Innovators asserted that the tolerances for POV and SV deceleration, POV and SV speed, and headways in the Agency’s CIB and DBS

test procedures are currently too wide. The commenters noted the combined tolerance variation “have a significant influence on collision closing speed and timing,” and Honda added that certain tolerance combinations can prevent a possible SV and POV collision. As such, both commenters recommended that NHTSA adopt the tolerances Euro NCAP uses for these test variables to (as Honda stated) improve test objectivity and uphold program credibility.<sup>162</sup> Toyota also recommended that NHTSA adopt Euro NCAP tolerances if the Agency ultimately decides to incorporate higher test speeds and higher decelerations for the lead vehicle with shorter headways. Toyota asserted that if test procedures allow for wide variation, then system design will need to cover the variation, potentially causing real-world false positive cases to increase. Intel suggested certain tolerances should be tightened, noting that if the headway and braking force of the braking robot are at the higher end of the tolerance range, “the brake robot itself is almost enough to avoid the collision,” making it difficult to assess what is supposed to be a crash-imminent event.

##### General Test Procedure Additions/Clarifications

To improve test repeatability and reproducibility, Tesla suggested NHTSA should better define the “end-of-the-event” in the test procedures.

Additionally, CAS suggested that the Agency should conduct testing to ensure vehicles provide effective warnings when “safe operating limits are exceeded,” such as for certain environmental conditions (*e.g.*, ice, snow), maximum speed conditions for ADAS operation, or upon violation of minimum following distances.

##### Response to Comments and Agency Decisions

##### Robotic Test Equipment

Proper test conduct is vital to the credibility of NCAP, and the Agency seeks to maximize testing consistency wherever possible. NHTSA agrees with commenters that eliminating human operation as much as is practicable might be helpful in maintaining test repeatability. However, NCAP CIB and DBS testing currently utilizes a human driver to maintain SV lane position and speed, and NHTSA has not encountered problems with achieving valid tests using human inputs to satisfy the test tolerances associated with these parameters. Therefore, NHTSA is not

<sup>162</sup> See Appendix A of Honda’s submission for detailed proposed revisions.

requiring robotic control of all SV inputs used to perform the Agency's AEB tests. However, there are some inputs where robotic control is beneficial, namely those associated with the SV brake pedal inputs (e.g., force, velocity, and displacement) used during DBS testing. For instance, the test tolerances associated with these inputs must be accurately achieved and maintained throughout the brake application. Also, some vehicles require a precise transition from brake pedal inputs based on position control to those based on applied force. Such brake inputs are difficult to reproduce with a human driver. In the future, NHTSA may consider performing AEB tests using robotic control of all SV inputs.

Along these lines, NHTSA will not harmonize the robotic test equipment and/or settings used with those used commonly in industry. The Agency has specified steering, throttle, and brake input requirements that must be met. Therefore, it is not warranted to specify particular equipment.

With respect to the POV, the Agency's decision to use the ABD GVT Revision G during NCAP's AEB tests necessarily requires that the test device be secured to a robotic platform to facilitate movement during conduct of the LVM and LVD tests. For the sake of scenario-to-scenario consistency, the ABD GVT Revision G will also be secured to an LPRV during conduct of the LVS tests. NHTSA notes that the movement of a robotic platform is accurately and repeatably controlled and can be safely achieved, monitored, and terminated, if necessary, by laboratory personnel at any time during a test trial. Given the demanding test conditions of the CIB and DBS tests described in this notice, these are all important considerations.

NHTSA received general comments regarding throttle and brake inputs. Pertaining to the test procedure phrase "smooth throttle inputs," there is no current definition of this phrase. The intent underlying this description is that the manner in which the accelerator pedal inputs are applied must not confound AEB operation or affect the test outcome. As described in the previous section, further definition of accelerator pedal release rates, as Auto Innovators requested, is unnecessary. Finally, NHTSA has not encountered the over-throttling problem that IDIADA has described; therefore, no changes will be made to the test procedure at this time to alter throttle robot inputs. However, the Agency will make refinements to the procedures in the future to clarify additional details if the need arises.

#### Changes to Tolerances

NHTSA acknowledges that several commenters to the March 2022 RFC notice reasoned that many tolerances in the Agency's CIB and DBS test procedures should be revised. Specifically, commenters remarked that tolerances were too wide. Honda noted that wide tolerances in NHTSA's DBS LVD test procedure may compound and allow for a vehicle with borderline performance to either make contact or not, depending on test parameters. NHTSA does not expect Honda's concern to be relevant for the updated NCAP AEB tests. Specifically, the wide assortment of test conditions being evaluated (e.g., POV speed combinations, SV-to-POV headways and POV decelerations (for LVD tests)), along with a no-contact criterion, contributes to greater test stringency overall. A vehicle achieving marginal performance will likely have difficulty passing the suite of tests performed by NCAP. Further, the Agency's current test tolerances balance the desire to perform the tests as accurately and consistently as possible with the ability to practically perform them. NHTSA has demonstrated the practicability of using its AEB test tolerances during NCAP and research testing; thus, it is appropriate to retain their use during conduct of the updated NCAP CIB and DBS tests.

Regarding comments on SV speed, NHTSA's experience is that test vehicle speed can be reliably controlled within the proposed tolerance, and that speed variation within the tolerance yields consistent results. A smaller speed tolerance would be unnecessarily burdensome, as it may result in a higher rate of invalid test runs without any greater assurance of test accuracy. Therefore, the Agency will proceed with a speed tolerance of  $\pm 1.6$  kph ( $\pm 1.0$  mph) for both the SV as well as for the POV in NCAP's CIB and DBS testing.

#### General Test Procedure Additions/Clarifications

Regarding comments relating to the definition of the end of the validity or test period, for the AEB LVS and LVD scenarios, NHTSA considers a test run complete when either of the following occurs: (1) the SV contacts the POV; or (2) the SV comes to a complete stop without making contact with the POV. For the AEB LVM test scenario, a test run is considered complete when either of the following occurs: (1) the SV contacts the POV; or (2) the SV speed becomes less than or equal to the POV speed without contacting the POV. For the false positive STP test, the test is

complete when either (1) the SV comes to a stop prior to crossing over the leading edge of the steel trench plate, or (2) when the frontmost part of the SV crosses over the leading edge of the STP.

NHTSA acknowledges that some vehicles are equipped with telltales that alert the driver that an ADAS system is not functional. These cases may include manual system deactivation or detection of system malfunction, which may result from sensor obstruction or saturation due to accumulated snow or debris, sunlight glare, fog, and other environmental conditions. These warnings serve as an indication to the driver that assistance with the driving task is not available. While NHTSA agrees that these warnings are useful to the driver, stipulating the type, function, and performance of a system malfunction warning is out of scope of an NCAP evaluation and is more suitable for rulemaking.

#### 2. FCW

##### a. NHTSA's Proposal for FCW Testing, Including Alternatives

NCAP's current FCW requirements were developed at a time when FCW and AEB functionality were not integrated as part of one frontal crash prevention system. Consequently, when FCW was selected for inclusion in the program in 2008, the Agency adopted a test procedure and performance requirements that served only to evaluate the performance of FCW systems. However, in recent years, there has been a shift towards FCW and AEB system integration to improve real-world safety performance and consumer acceptance. It may be reasonable to combine FCW testing with AEB (and PAEB) testing such that FCW operation is evaluated as part of NCAP's AEB (and PAEB) tests. NHTSA also expects this change would reduce test burden since there will not be an additional suite of tests to conduct solely for the purpose of verifying FCW performance.

##### NHTSA's Proposal for FCW Testing—Integrating FCW Assessments Into CIB Testing

In its March 2022 RFC Notice, NHTSA proposed that the Agency's CIB (and PAEB) tests could be used as an indicant of FCW functionality. Essentially, the Agency would evaluate the functionality of a vehicle's FCW system during the CIB system evaluation by requiring the SV's accelerator pedal to be fully released within 500 ms after the FCW is issued. If no FCW were issued during a CIB test, the SV accelerator pedal would be fully released within 500 ms after the onset

of CIB system braking (as defined in the Agency’s proposal as the instant SV deceleration reached at least 0.5g).<sup>163</sup> If no FCW were issued and the vehicle’s CIB system did not offer any braking, release of the SV accelerator pedal would not be required prior to impact with the POV (*i.e.*, the GVT). Comments were requested on whether this proposed approach was reasonable to assess FCW operation.

NHTSA asserted that it was appropriate to assess the presence of an FCW within CIB (and PAEB) tests because the operation of FCW and AEB/PAEB systems are complementary and fundamentally intertwined in the test scenarios currently assessed by NCAP. Therefore, it seemed appropriate to the Agency to begin to assess FCW timing relative to the intended onset of CIB activation instead of relative to an “absolute TTC,” as in NCAP’s current FCW tests, since the former would be at the discretion of the vehicle manufacturer, which would have explicit knowledge of how the operation of their vehicles’ CIB systems affect the FCW TTC. The Agency proposed to integrate FCW performance assessments into its CIB tests rather than DBS tests because, as mentioned previously, the Agency had considered removing DBS testing from NCAP entirely, and alternatively, weighed performing DBS testing at only a limited number of higher speeds. As such, evaluating FCW functionality during DBS testing did not seem like a viable option at the time.

Alternative 1—Conduct Multiple Separate FCW Assessments

As an alternative to integrating FCW and CIB tests, NHTSA also mentioned that it could maintain the FCW test scenarios currently included in its FCW test procedure if commenters suggested the current testing approach was more appropriate than its consolidation proposal. If the Agency maintained separate FCW and CIB assessments, it

proposed to align the corresponding *maximum* SV test speeds, POV speeds, headway, POV deceleration magnitude, etc., as applicable, for the FCW tests with the included CIB tests (which will be discussed later). More specifically, it proposed to adopt the following for NCAP’s FCW assessments:

- LVS—SV speed of 80 kph (49.7 mph); POV is stationary.
- LVD—SV and POV speed of 50 kph (31.1 mph) or up to 80 kph (49.7 mph), depending on the final test speed adopted for the CIB LVD scenario; a 12 m (39.4 ft.) SV-to-POV headway; and a POV deceleration magnitude of 0.5g.
- LVM—SV speed of 80 kph (49.7 mph); POV speed of 20 kph (12.4 mph).

If the Agency continued to conduct separate FCW assessments that aligned procedurally with those required for CIB, NHTSA also reasoned it would be necessary to revise the prescribed TTCs currently used to assess FCW performance to reflect the revised test scenario and speed combinations.<sup>164</sup> As such, NHTSA sought comment on what TTC would be appropriate for each test scenario.

The Agency also proposed a revised assessment approach for FCW (in lieu of requiring a pass rate of at least five out of seven runs for each FCW test scenario, as is done currently) if FCW assessments were not integrated into those for CIB. The Agency proposed to conduct one test trial per test speed for each FCW test scenario and to increase test speeds in 10 kph (6.2 mph) increments from the minimum test speed to the maximum test speed. In the event of a test failure for instances where the SV has a relative velocity at impact that is equal to or less than 50 percent of the initial SV speed, NHTSA proposed that up to four repeat trials would be performed.

Alternative 2—Perform One Indicant FCW Assessment

Given that most FCW systems are currently able to pass all relevant NCAP

test scenarios, the Agency also suggested that as an alternative to retaining *three* separate FCW test scenarios (to be conducted per the test conditions prescribed for the related CIB tests), it may be feasible for NCAP to perform *one* FCW test (to be conducted per the test conditions prescribed for the comparable CIB test) that could serve as an indicant of FCW system performance. NHTSA reasoned that taking this approach for FCW testing would also reduce test burden, similar to its proposal to integrate FCW and CIB testing. For this alternative proposal, the Agency sought comment on which one of the proposed CIB test scenarios would be most appropriate to adopt for an FCW test to assess the performance of FCW systems.

Assessment Method, Number of Trials, and Pass Rate (for Separate FCW Assessments)

NHTSA also requested comment on whether an alternative assessment method would be appropriate if the decision was made to retain one or more FCW scenarios that would be performed at only a single test speed, such as for the LVS and LVM test conditions. In such instances, the Agency sought comment on whether it should require one trial per test condition (*i.e.*, align with the assessment method proposed for the AEB test conditions) or conduct multiple trials instead, similar to the approach currently prescribed in NCAP’s FCW and AEB tests. If commenters preferred that the Agency adopt multiple trials in such instances, NHTSA asked how many trials would be appropriate, and what would be an acceptable pass rate.

The changes NHTSA proposed for its FCW test procedure as well as possible alternatives are shown in Table 16.

TABLE 16—FCW TEST SCENARIOS AND CONDITIONS—PROPOSALS AND ALTERNATIVES

	Test scenario	SV Speed (kph (mph))	POV Speed (kph (mph))	POV Headway (m (ft.))	POV deceleration (g)
Proposal .....	Evaluate FCW during all CIB testing (release throttle within 500 ms after FCW).				
Alternative 1 .....	LVS .....	80 (49.7)	0	n/a	n/a
	LVM .....	80 (49.7)	20 (12.4)	n/a	n/a
	LVD* .....	80 (49.7)	80 (49.7)	12 (39.4)	0.5
Alternative 2 .....	Evaluate FCW in one CIB test condition only.				

\*For LVD, NHTSA proposed adoption of the highest CIB SV/POV speed for the FCW assessment.

<sup>163</sup> The Agency proposed these test procedural changes for its PAEB tests as well.

<sup>164</sup> To pass a test trial, the vehicle must issue the FCW on or prior to the prescribed time-to-collision

(TTC) specified for each of the three FCW test scenarios.

## Summary of Comments

### Integrating FCW Assessments Into CIB Testing

The majority of commenters (BMW, MEMA, DENSO, GM, HATCI, Intel, Auto Innovators, Rivian, and TRC) supported the consolidation of FCW and CIB tests into a single evaluation. Rivian expressed that combining FCW and CIB is appropriate because FCW and AEB rely on the same inputs, and FCW is designed to work in a sequential manner with AEB. The automaker also mentioned that consolidation of FCW and AEB testing would reduce overall test burden, an assertion also expressed by Auto Innovators, GM, and TRC. Additionally, TRC mentioned that combining assessments for FCW and CIB functionality seemed logical since the timing of FCWs is already collected during the Agency's CIB tests. IDIADA also articulated this assertion.

DENSO also noted that it was appropriate to integrate FCW and CIB testing since voluntary agreements have helped to standardize CIB. The company asserted that this was even more fitting if the Agency was considering higher-speed CIB assessments, since Euro NCAP's AEB Car-to-Car test protocol stipulates assessment of FCW functionality within the CIB assessments at even higher speeds than those utilized to evaluate CIB functionality. NTSB supported harmonizing NHTSA's FCW test protocol with those used by other NCAPs, and consolidating FCW and AEB testing, but expressed concern that the proposed maximum SV test speed of 80 kph (49.7 mph) is inadequate, as it is only slightly higher than the SV speed currently specified in NCAP's FCW test procedure (72.4 kph (45 mph)).

Bosch also supported harmonization with Euro NCAP, suggesting that NHTSA combine assessments for FCW, CIB, and DBS, as they maintained it would be difficult to define acceptable TTCs for FCW alone. Thus, instead of specifying prescribed TTCs for FCW, Bosch favored stipulating when FCWs should be issued prior to AEB braking. Like Bosch, BMW and Auto Innovators stated consolidation of FCW, CIB, and DBS testing was appropriate, since all three systems are designed to work together to achieve the same goal of rear-end crash avoidance or crash mitigation through speed reduction.<sup>165</sup> The commenters recommended that the Agency combine FCW, CIB, and DBS assessments into one test series consisting of multiple test scenarios since this would better assess the safety

rendered by the systems collectively and align with other NCAPs globally. They also noted that FCW system requirements were determined at a time when FCW and AEB functionalities were not necessarily integrated with one another, as they often are currently. GM also supported consolidating FCW and CIB/DBS testing like that employed in test protocols used in other global NCAPs. The automaker expressed that FCW should be assessed as part of the overall system performance since AEB systems are now widely available in current vehicles and provide additional safety benefits compared to FCWs alone.<sup>166</sup>

Both GM and Auto Innovators mentioned two potential ways the Agency could integrate FCW performance assessments into AEB tests, with both affording an overall assessment of system performance. The commenters stated the Agency could trigger activation of the brake robot during DBS testing based on the timing of the FCW, as is done by Euro NCAP. Alternatively, they stated NHTSA could directly assess FCW timing during CIB tests if the Agency's FCW and CIB protocols included the same test conditions, as is the case currently for the LVM 45\_20 condition. The commenters expressed that appropriate FCW TTCs for the other CIB scenarios/conditions could be similarly calculated using the same approach NHTSA used to establish criteria for the LVM 45\_20 condition. Although the respondents suggested the latter option may provide a simpler test method, they preferred that the Agency adopt the methodology employed by Euro NCAP, stating that this method would also provide the best indication of appropriate timing for brake pedal application. The commenters favored combining FCW and CIB assessments over NCAP's current evaluation method, which stipulates separate assessments for each technology. This is because the commenters supported evaluations for the same test scenarios but over a varying range of speeds. If the Agency ultimately chose not to combine FCW and AEB assessments, Auto Innovators suggested that it should continue to conduct all three of the current FCW test scenarios.

Advocates stated they supported consolidating FCW and CIB testing if NHTSA provided data and analysis to support such a decision, and if the Agency was able to ensure the adopted test procedure could adequately assess the functionality for each system independently.

A few commenters, including Honda, Toyota, FCA, and CAS, did not support consolidating FCW and CIB testing. Honda stated that it was more appropriate to instead consolidate FCW and DBS tests, since the two technologies are designed to work in tandem to mitigate or avoid a rear-end collision (*i.e.*, the driver is aware of the impending collision and responds to the FCW by braking), and CIB is designed to operate alone (*i.e.*, the driver is not aware of the impending threat and therefore does not apply the vehicle's brakes in response to an FCW, and as such, is also unlikely to have released the accelerator pedal). FCA and Toyota also supported consolidating FCW and DBS testing for similar reasons. FCA stated that CIB can be executed differently when the attentiveness of the driver is present, and that automatic braking from CIB is more effective at low speeds than manual braking resulting from the combination of FCW and DBS, such that FCW would not necessarily be issued in such situations. Toyota also supported combined FCW and DBS testing because such an approach would be like that used by Euro NCAP. Furthermore, in the case of combined FCW and CIB testing, the automaker relayed that simply releasing the accelerator pedal after FCW activation would not discern the actual effectiveness of the FCW system to alert the driver to brake, since there would be no large deceleration observed by the time the pedal was released. Instead, Toyota asserted that such an approach only serves to demonstrate CIB performance regardless of FCW activation.

CAS asserted that it would only be appropriate to consolidate FCW and CIB testing if FCW is a part of the underlying CIB system (such that it utilizes identical physical components (*e.g.*, sensors and brakes)), if it is provided every time CIB is activated (*i.e.*, uses the same logic and parameters for system execution), and if capabilities for both systems can be "separately appreciated and evaluated" by users.

### Alternative 1—Conduct Multiple Separate FCW Assessments

Honda favored combining FCW and DBS tests but stated if the Agency chose to keep FCW tests separate, it did not support any adjustment to the current FCW tests, unless other commenters suggested differently. Intel proposed to consolidate FCW and CIB testing but asserted TTCs should be revised and "carefully selected" to limit nuisance activations if the Agency chooses to continue to conduct separate FCW assessments. Intel stated this was

<sup>165</sup> Also see Auto Innovators Appendix 1.

<sup>166</sup> See GM Attached A and Table 1.

particularly important for low SV speeds where a high TTC may be particularly annoying since a late reaction from the driver could still be reasonable and practicable.

Like Honda and Intel, Bosch also did not support separate FCW assessments. As mentioned earlier, the company stated it would be challenging to define appropriate TTCs and other performance criteria for FCW only, and specifically requested that the current TTC for the LVD scenario (*i.e.*, 2.4 seconds) be revised because they considered it too difficult for current technology.

Other commenters expressed that test criteria would have to change if the Agency opted to continue with separate FCW assessments. Auto Innovators, which supported the conduct of all three of the current FCW test scenarios if FCW assessments were not consolidated with those for AEB, mentioned that the SV headway should be increased if the current FCW tests were to be conducted at higher speeds. FCA opined that NHTSA should adjust the TTC criteria if it chooses to amend the test speed for the SV, but the automaker did not suggest appropriate TTC values. Likewise, Advocates generally mentioned that the Agency would have to specify TTCs, test speed, headway, etc. and present the data to support its selections to ensure FCW systems continue to elicit the intended driver response.

#### Alternative 2—Perform One Indicant FCW Assessment

If the Agency were to retain separate FCW assessments, FCA and CAS supported retaining all three current FCW test scenarios. CAS added that NHTSA should not reduce the number of test scenarios unless it could prove that doing so would not negatively affect safety. Advocates agreed that any reduction to the number of required tests should be supported by data. Furthermore, the group cautioned the Agency not to “seek convenience or expediency over the promotion of safety.” Instead, Advocates commented that NHTSA should test the range of conditions necessary to ensure FCW systems address the safety need and offer robust performance during real-world driving. They recommended the Agency establish minimum test criteria to ensure a baseline level of safety and use supplemental test criteria (*e.g.*, assessments at higher or lower speeds, shorter headways, etc.) to assign additional credit to higher-performing systems.

GM and Auto Innovators favored consolidating FCW, CIB, and DBS

testing, as is done by other consumer programs, to permit assessment of FCW and AEB systems simultaneously and thus minimize test burden. However, if the Agency opted to assess FCW separately, the commenters favored retaining all three test scenarios (*i.e.*, LVD, LVM, and LVS), as FCA and CAS proposed, to ensure (1) consistency with other NCAPs and that (2) FCW performance continues to align with the rear-end crash problem in the real world.

Similar to GM and Auto Innovators, Honda supported consolidation of FCW and DBS tests. However, the manufacturer also acknowledged not all DBS systems may perform well at certain higher test speeds, such as 80 kph (49.7 mph). Therefore, the manufacturer commented it may be necessary to perform one FCW test scenario independently at the maximum SV speed to appropriately evaluate FCW performance.

Intel suggested the Agency should choose either the LVS or LVM test scenarios if NHTSA decides to require one test for FCW assessment. The company envisioned that procedural changes proposed for the CIB LVD test may be especially challenging for FCW systems as the prescribed headway (12 m (39.4 ft.)) and POV deceleration (0.5g) will shorten the TTC substantially compared to that afforded currently in the FCW LVD test (*i.e.*, 30 m (98.4 ft.) and 0.3 g POV deceleration). BMW also stated that the proposed LVS test scenario was the most appropriate scenario to select to evaluate FCW systems.

#### Assessment Method, Number of Trials, and Pass Rate (for Separate FCW Assessments)

Auto Innovators and FCA recommended that NHTSA should continue to conduct seven trials per scenario and maintain the pass rate of five out of seven trials if the Agency retains separate FCW tests. Intel also supported retaining multiple trials, stating that conducting three trials and adopting a pass rate of two out of three would limit test burden while still ensuring robust assessments. For the assessment method in general, the company proposed an approach that aligned with their comments to PAEB and AEB.

Stating that FCW is not as important as AEB, IDIADA expressed that the Agency should award fewer points for FCW if separate assessments will be conducted for this technology.

#### Accelerator Release Timing (Applicable for FCW Integration)

With respect to the Agency’s proposal for release of the accelerator pedal if it was to integrate FCW and AEB tests, FCA stated a release time of 500 ms after the issuance of the FCW was appropriate. IDIADA also mentioned that a 500 ms pedal release time could be acceptable, as FCWs would “ideally” be issued 1.2 seconds prior to braking. However, Toyota did not agree with releasing the accelerator pedal 500 ms after issuance of the FCW if FCW and CIB testing was combined since, as mentioned previously, the commenter noted this approach would not assess the actual effectiveness of FCW, but rather, would just show the effectiveness of CIB.

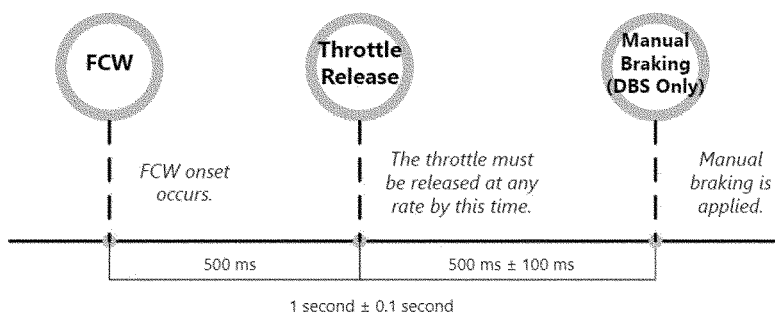
Intel suggested an alternative approach to validate FCW functionality. The company suggested NHTSA pursue a similar approach to that used by the General Safety Regulation (GSR), whereby the Agency would require an FCW be issued 0.8 seconds prior to the start of autonomous braking (as measured by the deceleration reaching a certain level).

Auto Innovators suggested that NHTSA study drivers’ reaction times to determine whether releasing the accelerator pedal 500 ms after an FCW is issued is appropriate. The organization also opined that specifying 0.5g as the threshold indicative of CIB braking in instances where no FCW is issued may be too high, such that the release of the accelerator pedal should potentially occur at a lower deceleration level.

#### Response to Comments and Agency Decisions

Based on the comments received, NHTSA has decided to consolidate FCW and AEB testing such that an assessment of FCW functionality will be assessed during NCAP’s CIB and DBS evaluations using LVD, LVS, and LVM test scenarios. During these evaluations, the SV must issue an FCW prior to the onset of automatic braking (as defined by the instant SV deceleration reaches at least 0.15g) for each trial run performed. If an FCW is issued, the SV’s accelerator pedal will be fully released (at any rate) within 500 ms. For DBS testing, manual (*i.e.*, robotic) braking will then be imparted 1.0 ± 0.1 seconds after issuance of the FCW. If no FCW is issued during a test trial, release of the SV accelerator pedal would not be required prior to impact with the POV (regardless of whether the vehicle’s AEB system offers automatic braking), and the SV will fail the trial run. See Figure

5 for sequence of FCW, throttle release, and brake application in the CIB and DBS evaluation tests.



**Figure 5: FCW, Throttle Release, and Brake Application Sequence in the CIB and DBS Tests**

NHTSA notes that the requirement that an FCW be issued prior to the onset of automatic braking (as defined by the instant SV deceleration reaches at least 0.15g) will not apply to the AEB false positive tests since issuance of an FCW and activation of automatic braking is not expected in these tests. If an FCW is issued in the CIB false positive test, the SV throttle will also be released within 500 ms, as this is an existing requirement for this test scenario. Likewise, per the existing CIB test procedure, if no FCW is issued during the CIB false positive test, the throttle will not be released until the test's validity period (the time when all test specifications and tolerances must be satisfied) has passed. The Agency is also making no changes to throttle release timing or brake application for the DBS false positive test. As currently specified for this test, the SV throttle will be released within 500 ms of the currently prescribed TTC (2.1 seconds) if no FCW is issued by the specified time. If an FCW is issued, the SV throttle will be released within 500 ms of the alert. For both situations in the DBS test, the SV brakes will then be applied at a TTC of 1.1 s, which corresponds to a nominal distance of 24.4 m (80.2 ft.).

#### Integrating FCW Assessments Into AEB Testing

The decision to evaluate FCW functionality during CIB and DBS evaluations using NCAP's LVD, LVS, and LVM test scenarios differs slightly from the Agency's March 2022 proposal. As mentioned earlier, NHTSA had proposed to integrate FCW into CIB testing in NCAP. At the time, the proposed combination of tests appeared to be the only viable option, (if the Agency was to consolidate FCW and AEB testing), since NHTSA had

considered removing DBS testing from NCAP entirely or performing DBS testing at only a limited number of higher speeds. However, since the Agency has decided to retain DBS assessments in NCAP and will continue to perform DBS tests at multiple speeds, as discussed previously, evaluating FCW within DBS testing is also appropriate. NHTSA notes that FCA, Honda, and Toyota supported integrating FCW and DBS testing, suggesting that such an approach was more appropriate than integrating FCW and CIB testing. As Honda stated, FCW and DBS are designed to be complementary systems that operate sequentially to assist a driver in responding appropriately to prevent a rear-end collision. The FCWs the driver to the impending collision, the driver responds by braking, and the DBS system offers additional braking in instances where the driver's braking alone is insufficient to avoid the crash. Therefore, it seems reasonable to evaluate FCW functionality (*i.e.*, notification and timing) during NCAP's DBS testing.

Although CIB systems are designed to operate when the driver is unaware or unresponsive to an impending rear-end crash (*i.e.*, the driver either does not respond to an FCW by braking or does not have time to brake after an FCW is issued), a vehicle should still issue an FCW in such situations. First, the vehicle cannot anticipate what actions the driver will take. Second, the warning serves to warn the driver not only of the crash threat but also of the onset of sudden profound braking, which can be alarming in itself. For these reasons the Agency has also decided to require the FCW be issued prior to automatic braking during NCAP's CIB assessments. While the

Agency acknowledges Toyota's assertion that integrating FCW and CIB assessments "only serves to demonstrate CIB performance regardless of FCW activation," the consolidation of FCW and CIB assessments permits an overall assessment of FCW functionality in situations where the driver may still find an alert to be beneficial.

The requirement that an FCW be issued prior to the onset of automatic braking (as defined by the instant SV deceleration reaches at least 0.15g) will apply for all test speed and scenario combinations used during the conduct of the NCAP's CIB and DBS evaluations, except for the false positive scenarios. By adopting this requirement, it is not necessary to calculate appropriate FCW TTCs for all AEB test conditions, as Auto Innovators and GM suggested. Rather, the presence of FCW will simply be assessed in the context of the AEB system as a whole.

Although FCA expressed that automatic braking from CIB may be more effective at low speeds compared to driver braking and subsequent DBS intervention, NHTSA does not agree with the manufacturer that an FCW is not needed at lower speeds for a particular intervention method (*i.e.*, automatic braking from CIB compared to driver braking and subsequent DBS engagement). For the reasons mentioned previously, an FCW should always be issued prior to automatic braking in the real-world situations represented by the Agency's AEB testing. Additionally, well-designed FCWs can provide significant safety benefits in crash-imminent rear-end crash scenarios. NHTSA encourages vehicle manufacturers to present them so that the driver may be able to respond with sufficient time to avoid a crash (*i.e.*, not to solely rely on CIB activation for crash

avoidance). That being said, the Agency is not prescribing that the FCW be issued at a specific time prior to braking in each test, as several commenters recommended. NHTSA should afford manufacturers with flexibility in this regard so they may design systems that are most appropriate for the complexities of various crash situations, some of which may provide very little time for a driver to take action to avoid a crash. Although the Agency reasons a requirement that an FCW be issued prior to automatic braking is appropriate for pre-defined scenarios during track testing, it does not want to be overly prescriptive such that automatic braking is suppressed in certain situations during real-world driving, such as when a lead vehicle cuts immediately in front of an AEB-equipped vehicle, where it may not be appropriate to delay immediate automatic braking in anticipation of a driver warning.

NHTSA acknowledges BMW's and Auto Innovators' recommendation that the Agency combine FCW, CIB, and DBS assessments into one test series consisting of multiple test scenarios to assess the total safety provided by the systems collectively; however, this is not feasible given the Agency's desire to provide assurance of both CIB and DBS system functionality. Driver-imparted manual braking may not be provided in all real-world situations; thus, it is beneficial to evaluate the performance of CIB systems devoid of DBS intervention. Further, the Agency agrees with FCA's assertion that manufacturers may choose to execute CIB differently when the driver is attentive and responsive (*i.e.*, situations represented by DBS testing) compared to when they are not (*i.e.*, situations represented by CIB testing). The Agency aims to ensure system effectiveness in both situations.

#### Conducting Separate FCW Assessments

The Agency has decided not to conduct separate FCW assessments. NHTSA's decision to expand upon its proposal to evaluate FCW functionality in both CIB and DBS assessments aligns well with recommendations made by many commenters, including Auto Innovators, Bosch, BMW, and GM. Respondents supported integration of FCW, CIB, and DBS testing for various reasons, including harmonization and a reduction in test burden. As mentioned by commenters, FCW is designed to work in a sequential manner with AEB, and AEB provides additional safety benefits compared to FCWs alone. Therefore, NHTSA reasons it is no longer necessary to assess FCW independent of AEB. Although Honda supported FCW and AEB consolidation,

the commenter also asserted it may be necessary to perform one separate FCW test to assess system functionality at higher speeds (*i.e.*, 80 kph (49.7 mph)) since not all DBS systems may perform well when tested. Similarly, NTSB suggested that NHTSA pursue FCW assessments at test speeds in excess of 80 kph (49.7 mph). Since the Agency will perform LVS and LVM DBS assessments for test speeds of 80, 90, and 100 kph (49.7, 55.9, and 62.1 mph), and vehicles will be required to issue an FCW prior to automatic braking for all AEB test conditions to be evaluated (except for the false positive test conditions), it is unnecessary to conduct a separate high-speed assessment specifically to evaluate FCW functionality. Vehicles unable to meet the Agency's FCW requirement will fail an AEB test trial.

#### Accelerator Release Timing

The Agency has decided to proceed with adopting its proposal for accelerator release timing. The SV's accelerator pedal will be fully released at any rate within 500 ms after an FCW is issued during all CIB and DBS evaluations using LVD, LVS, and LVM test scenarios. This timing is consistent with that specified in NCAP's current CIB and DBS test procedures, and the approach (*i.e.*, releasing the throttle after the FCW is issued) matches that prescribed in Euro NCAP's AEB Car-to-Car systems test protocol. The Agency notes Euro NCAP specifies the pedal be released 1.0 second after issuance of the FCW during manual braking tests. Since NHTSA's test laboratories have not experienced difficulties with releasing the accelerator pedal within 500 ms, as currently specified in the current test procedure, the Agency sees no reason to adopt Euro NCAP's requirement instead. Loosening the requirement would only serve to increase the likelihood that an accelerator pedal application may interfere with AEB engagement.

Although NHTSA had also proposed that the SV accelerator pedal would be fully released within 500 ms after the onset of automatic braking (as defined in the Agency's proposal as the instant SV deceleration reaches at least 0.5g)<sup>167</sup> for CIB and DBS tests if no FCW is issued, this additional requirement is seemingly unnecessary since the Agency has decided that a vehicle would fail a trial in such instances. As such, if no FCW is issued during a CIB or DBS evaluations using LVD, LVS, or

<sup>167</sup> NHTSA notes that, pursuant to other changes made in this notice, the onset of automatic braking will be defined as 0.15g instead of 0.5g for NCAP's future AEB tests.

LVM test scenarios, release of the SV accelerator pedal would not be required prior to impact with the POV.

For false positive testing, as stated earlier, the SV accelerator pedal will be released within 500 ms of an FCW if one is issued in the CIB false positive test; however, if no FCW is issued, the accelerator pedal will not be released until the test's validity period has passed. For the DBS false positive test, the SV accelerator pedal will be released within 500 ms of the currently prescribed TTC (2.1 seconds) if no FCW is issued by the specified time; if an FCW is issued, the SV throttle will be released within 500 ms of the alert.

#### Defining the Onset of Automatic Braking

While there is no need to define the term "onset of automatic braking" for the purpose of releasing the accelerator pedal (given the decisions made herein), a definition of the term is needed to determine whether a vehicle's FCW timing meets the adopted requirements for passing performance. Instead of defining the onset of automatic braking as 0.5g, as proposed, the Agency has decided to define the onset of automatic braking as a deceleration of 0.15g. NHTSA agrees with Auto Innovators that a 0.5g threshold may be too high. The Agency now reasons a 0.15g threshold is appropriate based on its experience conducting AEB testing for NCAP. This value has proven to be a reliable marker for AEB onset during the program's track testing.<sup>168</sup> As will be discussed, a vehicle cannot pass an NCAP AEB LVS, LVM, or LVD test trial unless the required FCW is presented prior to the onset of automatic braking (*i.e.*, CIB), as defined by the instant SV deceleration reaches at least 0.15g.

Since NHTSA has decided to integrate FCW and AEB testing rather than conduct separate FCW assessments, the Agency does not see the need to address comments received in this regard that are specific to an appropriate assessment method, number of trials, and pass rate solely for FCW.

#### b. FCW Signal Modalities

Currently, NHTSA gives credit to vehicles having FCW systems that send visual, auditory and/or haptic warning signals that meet the TTC requirements outlined in NCAP's FCW test procedure. The Agency's research has provided mixed results surrounding warning signal effectiveness. In one study, the Agency found that presenting drivers with an auditory warning in medium or

<sup>168</sup> <https://www.regulations.gov/document/NHTSA-2021-0002-0002>.



high urgency situations significantly reduced crash severity relative to visual and tactile (or haptic) warnings.<sup>169</sup> However, in other research studying the response of distracted human subjects to FCWs in forward collision crash scenarios on a test track, NHTSA found that 15 of the 17 total crashes that were successfully avoided (88 percent) occurred during trials performed with a seat belt pretensioner-based haptic alert. Only one crash was avoided during a trial performed with a beep-based auditory-only alert.<sup>170</sup> Research conducted by other entities has also suggested that haptic warning signals may increase consumer acceptance of FCW technologies compared to auditory alerts.<sup>171</sup>

Based on these findings, the Agency sought comment on whether it should give credit to vehicles equipped with FCW systems that only provide a passing auditory warning or whether it should also give credit to those FCW systems that only provide passing haptic signals (if it chose to retain one or more separate FCW tests).<sup>172</sup> NHTSA questioned whether haptic warning signals can be accurately and objectively assessed, and if so, whether certain haptic signal types should be excluded from consideration (if the Agency was to award credit to vehicles with haptic warnings that pass NCAP tests) because they may be a nuisance to drivers such that they would be more likely to disable them. NHTSA further questioned whether, for separate FCW evaluations, it should no longer give credit to FCW-equipped vehicles that offer only visual FCW signals. Finally, the Agency sought comment on what type(s) of FCW signal(s) would be

acceptable for use in defining the timing of the release of the SV accelerator pedal if the Agency decided to assess the sufficiency of an FCW in the context of CIB (and PAEB) tests in lieu of separate FCW assessments.

#### Summary of Comments

##### Allow All Warning Signal Modalities

Those in favor of not restricting the type of FCW signal modality permitted during Agency testing included CAS, HATCI, and Intel. HATCI stressed the importance that NHTSA be flexible with respect to warning signal type(s), contending that “[current] flexibilities allow industry to optimize and adjust the alerts based on the multitude of ADAS technology installed, the interaction between the technologies, and research and development findings.” The manufacturer warned that restricting system warning signals to specific modalities may limit future alert strategies (e.g., combinations, locations) and have unintended consequences (e.g., reduced alert effectiveness) as ADAS technology evolves and other systems are introduced. Instead of prescribing alert types, HATCI suggested that NHTSA work with industry and/or established standards bodies (e.g., Society of Automotive Engineers, or SAE) to define process-based and/or performance-based methods to assess alert effectiveness.

Intel mentioned that modality should not be restricted since credit should be based on warning effectiveness (i.e., a warning resulting in passing performance is effective, regardless of the signal modality). CAS agreed that any effective implementation of warning signal type(s) should be considered acceptable since FCW activation during real-world driving should rarely occur.

##### Restrict Warning Signal Modalities

A few commenters recommended the Agency award credit only to certain FCW signal modalities. MEMA, FCA, Bosch, and Subaru stated that credit should be awarded for only auditory or haptic warnings. Although Bosch supported awarding credit for both auditory and haptic warnings and considered itself to be “technology agnostic” in general, the company also reasoned that haptic warnings are more likely to seize the attention of the driver. If a specific haptic warning (e.g., steering wheel vibration) is implemented for a specific technology (e.g., FCW), Bosch asserted strongly that the same haptic warning (e.g., steering wheel vibration) should not also be

paired to a different technology (e.g., BSW) to avoid confusing the driver.

Subaru stated that credit should be awarded to auditory and haptic FCW signals since they are the most effective. The company cited the Agency’s research findings pertaining to the effectiveness of auditory warnings versus visual and haptic warnings referenced in its March 9, 2022, RFC Notice<sup>173</sup> (and above) as justification to award credit to auditory warnings.

NTSB supported awarding credit to vehicles offering auditory unimodal FCW or bimodal FCWs that include an auditory component. In general, the commenter did not support awarding credit to vehicles offering haptic FCW signals as the group noted that there is large variation in the implementation of haptic warnings (e.g., seat, steering wheel, seat belt); therefore, it would not be prudent to assume equivalent effectiveness without supporting research. Finally, ZF Group suggested the Agency should award credit to haptic seatbelt warnings when considering approved warning signal modalities, as their research has shown them to be highly effective.

##### Add Requirements to Visual Warning Signals or Require Multiple Modalities

Several commenters, including NTSB and DRI, remarked that visual-only warnings should not be considered acceptable to earn FCW credit. NTSB cited the low effectiveness of visual-only warnings as the reason not to award credit to visual FCWs.<sup>174</sup> The group also referenced several crash investigations where visual warnings failed to capture drivers’ attention when the vehicle was operating in partial automation mode at the time of the crash.<sup>175</sup>

DRI also suggested the Agency discontinue the acceptance of visual warnings or “alternatively prescribe minimum characteristics of the alerts (size, color, brightness, location)” to gain the driver’s attention. The test laboratory stated that in many FCW systems, the visual warning signal, which is typically a telltale in the instrument panel that changes color, is “too small,” appears in “non-attention-capturing colors (e.g., white),” or is otherwise inconspicuous. The company also reasoned that a distracted driver’s gaze would likely not be forward-looking, such that a visual warning located in the instrument panel would

<sup>173</sup> 87 FR 13477.

<sup>174</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-1530>. See footnote 15.

<sup>175</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-1530>. See footnote 16.

<sup>169</sup> Lerner, N., Robinson, E., Singer, J., Jenness, J., Huey, R., Baldwin, C., & Fitch, G. (2014, September), *Human factors for connected vehicles: Effective warning interface research findings* (Report No. DOT HS 812 068), Washington, DC: National Highway Traffic Safety Administration.

<sup>170</sup> Forkenbrock, G., Snyder, A., Heitz, M., Hoover, R. L., O’Harra, B., Vasko, S., and Smith, L. (2011, July), *A Test Track Protocol for Assessing Forward Collision Warning Driver-Vehicle Interface Effectiveness* (Report No. DOT HS 811 501), Washington, DC: National Highway Traffic Safety Administration.

<sup>171</sup> Flannagan, C., LeBlanc, D., Bogard, S., Nobukawa, K., Narayanaswamy, P., Leslie, A., Kiefer, R., Marchione, M., Beck, C., and Lobes, K. (2016, February), *Large-scale field test of forward collision alert and lane departure warning systems* (Report No. DOT HS 812 247), Washington, DC: National Highway Traffic Safety Administration.

<sup>172</sup> NHTSA proposed that it would give credit to FCW systems that have both passing auditory and haptic alerts if both alert types were available. However, if a vehicle with such a system provided only a passing haptic alert and the Agency decided only to give credit to systems that provided passing auditory alerts, then the vehicle would not receive credit as having met the Agency’s FCW test requirements.

not capture the driver's attention as well as an auditory or haptic warning. However, DRI suggested that a large, bright visual warning in an attention-capturing color, such as red, may suffice. DRI further surmised that a visual FCW is often intended to be an indicator to a driver regarding the "real" alert, which may be auditory or haptic, such that it serves to "communicate visually to the driver why they are hearing a warning beeping, rather than [the visual alert] being a warning in and of itself." As such, the laboratory, along with an anonymous commenter, opined that visual FCWs are not effective at warning the driver unless they are combined with an auditory or haptic warning signal. IDIADA agreed that visual warnings alone are insufficient to capture the driver's attention since they may not be looking at the instrument panel, and as such, recommended the Agency award credit to vehicles offering a combination of visual and auditory warnings.

GM stated that multimodal (*e.g.*, visual plus directional auditory or directional haptic) warnings are necessary for "imminent" crash warnings, but visual-only signals are acceptable for "cautionary" crash alerts. The manufacturer suggested that multimodal warnings may increase consumer acceptance and limit instances of drivers turning off FCW systems due to annoyance. However, GM opined that NHTSA should only provide credit to vehicles in NCAP testing offering multimodal FCWs that include both a visual and haptic or auditory signals. Like DRI, GM also suggested the Agency impose additional requirements for visual warning signals, recommending that visual alerts should explain the nature of the warning and should be located such that they "draw the driver's attention to the general direction of the crash threat." This directional requirement, referenced previously, was also suggested for haptic and auditory components of multimodal warnings. The manufacturer suggested that acceptable visual FCWs should include a "red flashing imminent alert and be placed in the lower, center portion of the driver's forward field-of-view," like a translucent red flashing alert reflected on the lower part of the vehicle's windshield, to draw the driver's attention forward, in the direction of the crash threat, stating this may facilitate a rapid, appropriate response by the driver.

With respect to haptic warnings, GM suggested the Agency should award additional credit to their Safety Alert Seat (SAS) vibration alerts, and to other

haptic alerts shown to support equivalent rationale.<sup>176</sup> According to GM, SAS vibration alerts are triggered simultaneously with an auditory alert by the same ADAS signal and can be detected by various means during testing (*e.g.*, voltage readings, vibration sensors, auditory microphone, etc.). GM explained they allow non-visual crash alerts to be detected by hearing-impaired drivers, thus improving accessibility. GM further stated a large-scale telematics-based study funded by NHTSA found that, compared to auditory warnings, SAS warnings produced braking at the same time after issuance of an FCW, were preferred by drivers, and increased usage of not just the FCW system overall, but also the most conservative alert timing setting (*i.e.*, "Far").<sup>177</sup>

Several other commenters (BMW, Subaru, Rivian, and Auto Innovators) also favored systems offering multimodal warning strategies, specifically auditory or haptic warning signals in combination with visual signals. Auto Innovators suggested that vehicles having haptic or auditory warnings could receive a greater number of points than those offering only visual warnings if the Agency was to implement a rating system for FCWs. Similarly, Subaru supported awarding more points to FCW systems that provide a combination of warning signal modalities. Rivian suggested that drivers could be given the option to turn off either the auditory or haptic warning to suit their preference. To limit driver nuisance, the commenter stated NHTSA should provide a recommended decibel level for auditory warnings and a recommended type and location for haptic warning signal presentation, but not restrict system designs. As stated previously, NTSB also implied that bimodal auditory warnings (*i.e.*, auditory plus visual) would be preferred.

#### Other Related Comments

Auto Innovators requested that the Agency clarify what constitutes an alert. Specifically, the group asked whether alerts at the steering wheel, driver's seat, and pedal qualify as haptic alerts, in addition to system-induced vehicle braking at low deceleration levels (*i.e.*, partial braking). The commenter mentioned that, per Euro NCAP's 2023 update, the organization now considers partial braking to be an approved haptic warning. DRI posed a similar question.

<sup>176</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-3856>. See Appendix 2 for rationale and supporting data.

<sup>177</sup> DOT HS 812 247.

The commenter cited section 11.5.2.4 of the Agency's FCW test procedure, which states, "The FCW system shall provide a warning to the driver by presenting an auditory alert, visual alert, haptic vibration, haptic vehicle cue (*e.g.*, braking vibration, steering vibration, or seat vibration)," and asked whether the Agency intended to include "a brake tug," defined as a short (0.3 seconds) system-supplied braking at a low, 0.2 g deceleration, as a valid warning modality. DRI stated it considers "a brake tug" to be an effective FCW that should be accepted.

Advocates recommended that the Agency conduct research to identify which FCW warning signal modalities will increase use, reduce dissatisfaction, and be most effective at reengaging the driver and eliciting a safe, timely, and appropriate response. The organization also suggested there may be further benefit realized from standardizing warnings, especially for drivers that use multiple vehicles.

#### Response to Comments and Agency Decisions

##### FCWs Must Include Auditory and Visual Signals

Based on the comments received and the general support for use of a multimodal FCW strategy, the Agency has decided that a vehicle must present a forward collision warning consisting of auditory and visual warning signals to the vehicle operator to receive credit in each of NCAP's LVD, LVM, and LVS AEB tests.

Use of a multimodal FCW will ensure most drivers will perceive the warning as soon as it is presented, allowing the most time for the driver to take evasive action to mitigate or, if possible, avoid a crash. Further, a multimodal FCW strategy is consistent with the recommendations of multiple U.S. and international organizations, including Euro NCAP, the ISO, and SAE International. ISO recommends a multimodal approach in both ISO 15623, "Forward vehicle collision warning systems—Performance requirements and test procedures," and ISO 22839, "Forward vehicle collision mitigation systems—Operation, performance, and verification requirements" (which applies to light and heavy vehicles). SAE addresses the topic of a multimodal FCW strategy in both information report J2400 2003–08, "Human Factors in Forward Collision Warning Systems: Operating Characteristics and User Interface Requirements," and J3029, "Forward Collision Warning and Mitigation Vehicle Test Procedure and Minimum

Performance Requirements—Truck and Bus (2015–10; Work in Progress currently).”

While no one signal combination was preferred by commenters, NHTSA’s decision to impose a standardized auditory plus visual alert strategy for NCAP is appropriate given most of these organizations’ recommendations specify an FCW consisting of auditory and visual signals, though ISO 15623 specifies that an FCW include a visual warning as well as an auditory or haptic signal. Euro NCAP also defines an FCW as an audio-visual warning.<sup>178</sup> The Agency’s decision to adopt a combined auditory/visual bimodal alert aligns well with its “Human factors design guidance for driver-vehicle interfaces” report,<sup>179</sup> which contains best practice information for implementation of various alerts, including those for FCW. Based on cited research, the report suggests “collision avoidance performance for both forward and side object collisions may be best when a bimodal auditory/visual warning system is used, which extends across driving scenarios, types of collisions, and driver populations.” Requiring a bimodal auditory/visual alert also seems reasonable considering FCWs comprised of auditory and visual signals are prevalent in current U.S. vehicle models, thus limiting manufacturer burden.

The Agency recognizes that multiple commenters sought flexibility for automakers to use an FCW of their own preference in lieu of one prescribed by NHTSA to optimize warning strategies for other technologies in the future. However, as Advocates suggested, standardizing FCW signal modalities may simplify a consumer’s understanding of these warnings while hastening a driver’s recognition, and thus, response, to them. As commenters provided no data concerning consumers’ degree of understanding of the wide variety of FCW implementations currently—they simply made generalized statements about consumer familiarity—NHTSA does not view these arguments as sufficient to overcome the value of standardization as a means of ensuring consumer familiarity with FCWs. FCW components that differ by manufacturer and across models may cause confusion for drivers, especially when driving

new, unfamiliar, or rental vehicles. Consistency of alerts to the extent possible should improve a driver’s ability to quickly comprehend the nature of the alert and the reason behind any AEB intervention. Although NHTSA acknowledges that studies exist which suggest that, depending on design, alternative warning types (*i.e.*, visual and haptic, auditory and haptic, or haptic-only) can also be effective, without overwhelming data to suggest that one of these alert types/ combinations is more effective than a combined auditory/visual FCW, ensuring standardization of a familiar alert option would best serve consumers.

#### Option To Include Supplementary Haptic Signal

Although the Agency will require a combined auditory/visual FCW, a vehicle may additionally present a haptic signal to warn of an impending collision without penalty. As several commenters noted, some vehicle manufacturers incorporate a haptic component into their products’ FCWs. These may include vibrations in the steering wheel, driver’s seat, and/or pedal, “tugs” on the driver’s seat belt, or system-induced vehicle braking at low deceleration levels (*i.e.*, partial braking), including “brake tugs.”<sup>180</sup> There is no current evidence to show that haptic FCW signals themselves are detrimental to safety. In fact, Euro NCAP awards extra human machine interface (HMI) credit to systems offering supplementary haptic alerts that meet certain criteria.<sup>181</sup> Thus, the Agency does not want to discourage manufacturers from incorporating haptic alerts as an optional addition if they so choose. That said, NHTSA advises vehicle manufacturers to carefully implement haptic signals such that they will not be confused with those currently used for other crash avoidance technologies, such as those related to lane keeping or blind spot detection. The issuance of an FCW will not be considered complete during NCAP tests until both auditory and visual components are provided.

#### Warning Signal Timing

During DBS tests performed with LVD, LVM, and LVS scenarios, release of the SV’s accelerator pedal will not be initiated (and thus, the brake will not be

applied) until after issuance of the required auditory and visual signals. However, a vehicle cannot pass a DBS test trial unless the two required FCW signals are presented prior to the onset of automatic braking (*i.e.*, CIB), as defined by the instant SV deceleration reaches at least 0.15g.<sup>182</sup> In other words, if automatic braking stemming from CIB occurs prior to the issuance of either signal (auditory or visual) from the required bimodal FCW, the vehicle will fail a test trial even if it does not make contact with the vehicle test device. However, if automatic braking from CIB occurs prior to the application of manual braking used to assess DBS but after the required FCW signals are presented, the vehicle can pass a test trial if it does not contact the POV. NHTSA reasons that this procedural requirement not only aligns with the intent of DBS tests (*i.e.*, for an inattentive driver to respond to the FCW by braking prior to CIB system intervention), but it should also make certain that the driver is presented with a warning with sufficient time to react to an impending rear-end crash even if CIB intervention begins relatively soon after the FCW is issued. In addition, it should ensure a vehicle’s FCW affords real-world effectiveness. If one or more of the required components of the bimodal FCW are not issued, release of the SV accelerator pedal would not be required prior to impact with the vehicle test device (*i.e.*, POV).

NHTSA is requiring that both FCW signals be issued before the accelerator pedal is released in DBS tests because, as DRI asserted with respect to visual cues, for bimodal alerts, one FCW signal often serves as a secondary, confirmatory indication that explains to the driver what the primary signal is intended to communicate (*i.e.*, a forward crash-imminent situation). Therefore, it seems reasonable to require both signals be issued to provide a timely response so the driver can recognize the purpose of the FCW, release the accelerator, and brake.

While the Agency’s CIB test represents a different real-world situation compared to its DBS test, adopting a similar test approach for CIB is reasonable. As mentioned, NHTSA’s DBS tests represent situations where an inattentive driver re-engages in the driving task in response to an FCW (or simply in response to noticing a crash-imminent situation) and applies the brakes to avoid or mitigate a rear-end

<sup>178</sup> T<sub>FCW</sub> is determined by the auditory portion of the warning in Euro NCAP’s test procedure.

<sup>179</sup> Campbell, J.L., Brown, J.L., Graving, J.S., Richard, C.M., Lichty, M.G., Sanquist, T., . . . & Morgan, J.L. (2016, December). Human factors design guidance for driver-vehicle interfaces (Report No. DOT HS 812 360). Washington, DC: National Highway Traffic Safety Administration.

<sup>180</sup> These examples of “haptic vehicle cues” are currently permitted under Section 11.5.2.4 of NCAP’s current FCW test procedure. See Docket No. NHTSA–2006–26555–0134.

<sup>181</sup> Euro NCAP Assessment Protocol—Safety Assist, Collision Avoidance, Version 10.4. December 2023.

<sup>182</sup> NHTSA clarifies that FCW onset would be determined via measurement of the FCW auditory signal sound output within the vehicle cabin and the illumination of the FCW visual signal. CAN bus information would not be used to assess FCW onset.

crash. On the other hand, the Agency's CIB tests are designed to represent situations in which the driver does not brake. For instance, the driver may respond to the FCW by releasing the throttle but still fail to manually apply the brake pedal. Since the vehicle cannot anticipate what actions the driver will or will not take in a crash-imminent situation, the Agency expects that an FCW would/should always be issued. In situations where the driver does not respond by braking (such as those represented by NHTSA's CIB tests), the alert serves to inform the driver that the vehicle is going to intervene. As such, for NHTSA's LVD, LVM, and LVS CIB testing, like for its DBS tests, the Agency will release the SV's accelerator pedal after the issuance of both FCW components (*i.e.*, the visual and auditory signal), and a vehicle will fail a CIB test trial (even if it does not contact the vehicle test device) if both FCW signals are not issued prior to the onset of automatic braking (*i.e.*, CIB), as defined by the instant SV deceleration reaches at least 0.15g. Furthermore, if one or more of the two required alert signals from the bimodal FCW are not issued, release of the SV accelerator pedal would not be required prior to impact with the vehicle test device (*i.e.*, POV).

#### Additional Requirements for Specific Warning Signal Types

At this time, the Agency is not prescribing additional requirements for visual or auditory warning signals (*e.g.*, color, location, decibel level, type, etc.) as some commenters suggested, and it is not standardizing FCW beyond defining signal types, as requested by Advocates. It is outside the scope of NCAP (a consumer information program) to be prescriptive in this regard.

#### c. Adjustable Setting for FCW/AEB

NCAP's current FCW test procedure states that if an FCW system provides a warning timing adjustment setting for the driver, at least one timing setting must meet the TTC warning criteria specified in the procedure. Therefore, if a vehicle is equipped with a warning timing adjustment, only the most conservative (*i.e.*, earliest) warning setting is presently tested. However, in its March 2022 RFC notice, the Agency acknowledged that while selecting the most conservative setting is beneficial for track testing where the driver of the SV must steer and/or brake to avoid a crash with the POV after the FCW is issued, another setting may be more appropriate for NCAP evaluation.

NHTSA recognized that many consumers may not adjust the warning

timing setting for FCWs, and those that do may be unlikely to select the earliest setting since this setting is most likely to result in false positive warnings (*i.e.*, nuisance warnings) during real-world operation.<sup>183</sup> The Agency also expressed that selecting the earliest (*i.e.*, most conservative) FCW setting may allow a vehicle to pass NCAP's FCW test, whereas later warning settings may not earn NCAP credit. Accordingly, NHTSA voiced concern that its FCW test results for such vehicles may not accurately represent drivers' real-world experiences.

Based on these considerations, the Agency proposed to test the middle (or next latest) FCW system setting when performing FCW (and AEB/PAEB) NCAP tests on vehicles that offer multiple FCW timing adjustment settings. Selection of the middle or next latest warning setting for testing would harmonize with Euro NCAP's AEB Car-to-Car systems test protocol, thus potentially driving costs down for manufacturers and attempting to ensure that consumers in both the U.S. and European markets benefit from similar FCW system settings.<sup>184</sup> The Agency noted that the proposed procedural change would uphold the mandate in the BIL that NHTSA consider harmonization with third-party safety rating programs when practicable. NHTSA requested comments on whether testing the middle (or next latest) FCW system setting was acceptable or whether another setting would be more appropriate.

#### Summary of Comments

##### Middle or Next Latest Timing Setting

Many commenters (FCA, Honda, Bosch, NTSB, Advocates, and NYC DOT/NYC DCAS, Vision Zero Task Force) suggested that the middle (or next latest) FCW system setting should be utilized for testing. Honda stated this setting was "the best compromise" to evaluate system capabilities. AAA also asserted the middle setting was most appropriate because it should be less likely to "bias system response relative to endpoint settings." That said, the commenter also opined that if the system automatically reverts to a certain setting with each key cycle, that setting should be utilized for testing instead.

<sup>183</sup> Nodine, E., Fisher, D., Golembiewski, G., Armstrong, C., Lam, A., Jeffers, M.A., Najm, W., Miller, S., Jackson, S., and Kehoe, N. (2019, May), *Indicators of driver adaptation to forward collision warnings: A naturalistic driving evaluation* (Report No. DOT HS 812 611), Washington, DC: National Highway Traffic Safety Administration.

<sup>184</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB Car-to-Car systems, Version 4.3*. See section 7.4.1.1.

NYC DOT/NYC DCAS, Vision Zero Task Force favored the middle (or next latest) FCW setting to "eliminate grade inflation" and ensure systems perform well under conditions consumers would expect them to. Advocates favored the middle or next latest setting to harmonize with Euro NCAP test protocols if such an approach did not negatively affect FCW safety benefits, such as if the vehicle exhibited a significant degradation in performance when an alternative alert setting was chosen, particularly if that setting was favored by the majority of consumers.

Some commenters did not favor assessments that utilized the middle FCW setting. Intel stated that by choosing the middle setting, TTC thresholds may increase, which may be perceived as a nuisance by many drivers such that they would turn off the FCW system. The commenter suggested that the Agency could utilize the middle setting if it reduced the TTC requirements for the FCW tests. GM contended that if NHTSA was to select the middle setting for testing, automakers would alter FCW system designs accordingly to align current default settings to the test settings (*i.e.*, middle) to limit the possibility of unexpected performance differences.

If NHTSA was to choose the middle setting for testing, HATCI asked for clarification on what setting would be used if the vehicle has only two settings.

##### Factory Default Timing Setting

Several commenters stated that the Agency should select the factory default setting for testing purposes when driver configuration is available. BMW and Rivian mentioned that such system settings are rarely changed and therefore the default setting is most likely to be the one enabled. BMW commented that vehicle manufacturers should inform NHTSA of the default setting, and if such information is not provided, the Agency should utilize the middle (or next latest) setting during testing. As mentioned previously, Tesla also favored testing with the factory default setting (for any configurable FCW or AEB setting), contending that the default setting is the most-used setting by drivers, "best represents the vehicle manufacturer's intended system performance," and would best ensure consistency across vehicle models. The automaker mentioned that different settings may result in a 1.0 second variation (earlier or later compared to other settings) which would have varying impacts on performance.

HATCI also proposed that NHTSA utilize the default system settings during testing. HATCI noted their

research has shown that most Hyundai and Kia customers do not change ADAS settings after purchasing a new vehicle, and that changing the settings for testing purposes would likely not be most representative of most real-world driving situations.<sup>185</sup> The automaker recommended that the Agency conduct a comparable fleet-wide study and use those findings for system settings to guide future test procedural changes.

Similar to HATCI, GM asserted that testing with a setting other than the factory default setting would not best represent real-world customer selection. In a 2016 study of FCWs, the automaker found their default setting (*i.e.*, “Far”) was utilized 59 percent of the time compared to 17 percent for the “Medium” setting and 15 percent for the “Near” setting.<sup>186</sup> In 9 percent of cases, customers had turned the FCW system off even though a range of alert settings was available. From this, GM gleaned that the default setting aligns

well with their customer preferences, and if customers had not been provided with a range of alert settings, more would have likely turned the FCW system off. Based on these findings, GM opined that utilizing the factory default setting for NCAP testing would challenge vehicle manufacturers to provide NCAP levels of performance at the setting choice most likely to be used by consumers while also limiting nuisance alerts.

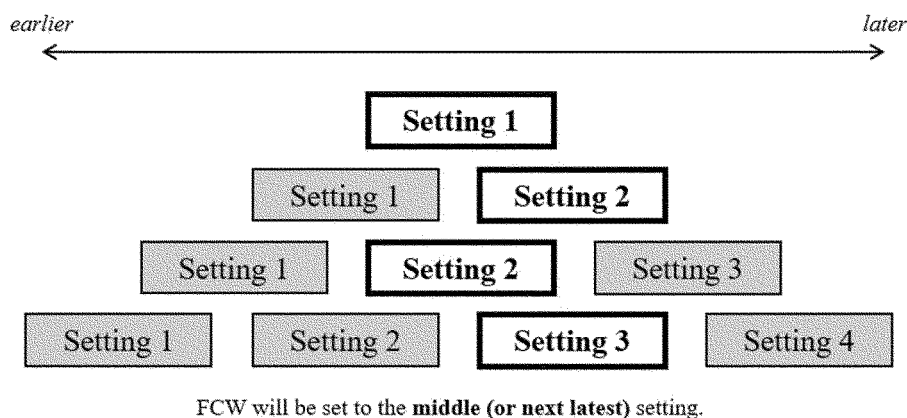
#### Alternative Timing Settings

Some respondents, like CAS, mentioned that selecting the setting that is “least sensitive” is most appropriate since it would provide consumers with a sense of the “worst-case” protection offered by the system, while Auto Innovators recommended that the Agency allow the manufacturer to decide the setting to be tested to promote flexibility with respect to system design. Like Intel, the group asserted that requiring a specific setting

may impact the upper and lower bounds of system performance and sensitivity and thus affect customer satisfaction. Auto Innovators stated that by allowing automakers to specify the test setting, consumer acceptance would not be affected, and the Agency could still be assured that at least one setting meets system performance requirements.

#### Response to Comments and Agency Decisions

The Agency has decided to adopt its March 2022 proposal for FCW timing settings in NCAP testing and will set FCW presentation timing to the middle (or next latest) setting during its AEB evaluations (see Figure 6). For FCW systems that have only two settings, as HATCI mentioned, the Agency will select the later setting for NCAP testing. NHTSA will apply a similar requirement to vehicles separately offering adjustments for AEB (*e.g.*, early versus late intervention).



**Figure 6: Forward Collision Warning (FCW) Settings Used for NCAP Testing**

Although many commenters recommended that the Agency select the default setting for its AEB tests, generally citing that it is the setting most likely to be utilized in real-world driving, selecting the middle (or next latest) setting is most appropriate for NCAP’s AEB testing program for several reasons. First, while there may be merit in selecting default settings for test evaluations, as noted in the Agency’s initial proposal, harmonization with other third-party safety rating protocols, most notably Euro NCAP, is desirable whenever practicable. Also, it is a

reasonable expectation that the setting most preferred or often used by consumers would (or rather should) be the default setting and that this setting should generally fall in the middle of the range of driver setting preferences that span either earlier or later alert settings. In essence, the default setting for FCW systems is expected to correspond to the middle alert setting. As such, NHTSA is not concerned that vehicle manufacturers may choose to alter FCW system designs to align current default settings to the test settings (*i.e.*, middle), as GM asserted. In

fact, the Agency encourages this. As AAA mentioned, this should limit designs that bias system response toward either earlier or later settings. Along these lines, the Agency has decided against choosing the latest setting for NCAP’s AEB testing, as CAS suggested, even though it may identify worst-case performance. NHTSA does not want to encourage acceptable performance for only more aggressive settings that may be preferred by a limited number of drivers. Similarly, it has not opted to retain the most

<sup>185</sup> In a 2017–2019 study of nine focus groups involving 24 participants (58 percent female and 42 percent male) from the Chicago, IL area, market research, and an online review focused on

consumer perception of ADAS technologies, HATCI found that approximately 62 percent of consumers did not access or make changes to ADAS settings.

<sup>186</sup> DOT HS 812 247, “Large-Scale Field Test of Forward Collision Alert and Lane Departure Warning Systems,” 2016.

conservative (or earliest) setting for NCAP's tests.

This is not to suggest that manufacturers should provide other FCW or AEB system settings which will afford little to no benefit, nor should any other setting negatively impact the performance of FCW and/or AEB. However, as NCAP is a consumer information program, NHTSA must provide comparable results in order for consumers to make informed purchasing decisions. Accordingly, it is selecting one timing setting for FCW and AEB systems, the middle (or next latest) setting, for NCAP's AEB testing. Also, for vehicles that have an ESC off switch, NHTSA will keep ESC engaged for the duration of the test.

As previously mentioned, NHTSA has decided to evaluate FCW in tandem with CIB and DBS. To pass a test trial in the Agency's CIB or DBS evaluations that use LVD, LVM, and LVS scenarios, the SV must issue the required FCW signals (*i.e.*, auditory and visual) prior to the onset of automatic braking (as defined by the instant SV deceleration reaches at least 0.15g). After the required FCW signals are issued, the SV's accelerator pedal will be fully released (at any rate) within 500 ms. Additionally, for DBS test conditions, manual braking will be imparted  $1.0 \pm 0.1$  seconds after the complete, bimodal FCW is presented. Effectively, to perform well in the Agency's AEB evaluations, the vehicle must issue the FCW in a timely manner so that the accelerator pedal can be released, and the brake can be applied (either automatically or manually), with sufficient time to allow the vehicle to avoid contacting the POV. By integrating FCW assessments in this way, NHTSA expects, as GM opined with respect to default settings, that vehicle manufacturers will inherently strive to limit nuisance alerts during real-world driving for the FCW timing setting preferred by most drivers while also performing well in NCAP's AEB tests at this preferred setting. In essence, the Agency's effort to integrate testing should help to eliminate the concern expressed by Intel that TTC thresholds (and inherently nuisance alerts) may increase if the middle timing setting is selected for testing. Since the functionality of FCW and AEB will be assessed holistically, manufacturers should ultimately be afforded more flexibility with respect to system design. They may establish the upper and lower bounds of the FCW system's performance, deciding whether to either increase or reduce FCW TTCs to address customer satisfaction, and thus will effectively set the timing for the FCW

setting to be tested (albeit the middle setting), as Auto Innovators requested. The resultant FCW and AEB system performance is markedly at their discretion.

NHTSA also notes that, to receive credit for AEB, forward collision warning and automatic emergency braking technologies (*i.e.*, FCW and AEB systems) must appear 'Default ON' during each ignition/key cycle. While the Agency is not prohibiting a disabling function for these technologies in its NCAP evaluation, it does not expect that the testing requirements imposed herein should result in reduced consumer satisfaction. Instead, NHTSA expects drivers will adjust their vehicle's FCW and AEB system settings to meet their personal preferences instead of disengaging the systems altogether.

### 3. Additional FCW and AEB Test Scenarios and Conditions

#### a. Other FCW Scenarios or Test Conditions

In its March 2022 RFC notice, NHTSA also requested comment on whether there were additional or alternative test scenarios or test conditions that it should consider incorporating into an updated FCW test procedure for NCAP. More specifically, the Agency sought comment on whether it should adopt tests for FCW that were more complex or at higher speeds compared to those tests/conditions proposed for CIB evaluations, and if so, whether or how NHTSA should amend the current FCW performance criteria (*i.e.*, TTCs) and/or test scenario specifications.

#### Summary of Comments

Intel, Honda, Auto Innovators, and GM recommended that the Agency not adopt any additional or alternative test scenarios or conditions for NCAP's FCW assessments. GM and Auto Innovators asserted that adding more complicated tests would increase test variation without providing meaningful performance distinctions, thus hampering consumers' ability to use results to compare performance across vehicles. Auto Innovators further stated that the current scenarios align well with crash data and other NCAPs. FCA also suggested that NHTSA retain the current test scenarios and did not offer suggested changes.

In contrast, some respondents stated that the current FCW test conditions are not sufficient. Specifically, Adasky supported adopting tests for FCW (and CIB/DBS) that would assess system performance at higher speeds, at nighttime, and while turning. The

commenter further stated that thermal cameras are currently available and can perform well under such conditions. NTSB also recommended incorporation of other test scenarios, including those involving cross traffic, vehicle cut-in situations, and additional targets (*e.g.*, different types or orientations of vehicles, roadway hardware, such as crash attenuators, etc.).<sup>187</sup> CAS encouraged the Agency to aim to optimize safety rather than simply encourage compliance.

#### Response to Comments and Agency Decisions

As NHTSA has decided to integrate FCW testing into its AEB assessments as part of this upgrade to NCAP, and commenters were generally not supportive of retaining separate FCW assessments, the Agency will not incorporate any additional FCW test scenarios or test conditions at this time. However, the Agency currently has plans to conduct research that aligns with some of the commenters' recommendations, including nighttime AEB assessments and AEB testing with motorcycles and bicycles. NHTSA will continue to add scenarios to NCAP's roadmap in the future as research data becomes available, as detailed, objective test procedures are drafted, and as technologies mature to address the safety need.

#### b. Additional AEB Test Scenarios and Test Surrogates

As mentioned previously, in its March 2022 RFC notice, NHTSA discussed findings from a 2019 IIHS study<sup>188</sup> of 2009–2016 crash data from 23 states which suggested that the increasing effectiveness of AEB technology in certain crash situations is changing the rear-end crash problem. The study identified types of rear-end crashes in which striking vehicles involved in rear-end crashes were more likely to be equipped with AEB.<sup>189</sup> These included rear-end crashes: (1) where the striking vehicle was turning relative to when it was moving straight; (2) when the struck vehicle was turning or changing lanes relative to when it was slowing or stopped; (3) when the struck vehicle was not a passenger

<sup>187</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-1530>. See footnote 14.

<sup>188</sup> Cicchino, J.B. & Zuby, D.S. (2019, August), Characteristics of rear-end crashes involving passenger vehicles with automatic emergency braking, *Traffic Injury Prevention*, 2019, VOL. 20, NO. S1, S112–S118. <https://doi.org/10.1080/15389588.2019.1576172>.

<sup>189</sup> In this instance, over-represented means a higher frequency as a percentage for AEB-equipped vehicles versus non-AEB-equipped vehicles on a normalized basis.

vehicle or was a special use vehicle relative to a passenger car; (4) on snowy or icy roads; or (5) on roads with speed limits of 112.7 kph (70 mph) relative to those with 64.4 to 72.4 kph (40 to 45 mph) speed limits.

Findings from the study suggested that tests used to evaluate the performance of AEB systems by the Agency's NCAP and other consumer information programs are influencing the development of countermeasures capable of minimizing the crash problems they were intended to address. However, the results also implied that, while current AEB systems are effective at addressing the most common rear-end crashes, they have not yet been optimized to address more atypical crashes where the SV is the striking vehicle.

Given IIHS's findings, NHTSA requested comment on if (and how) it should alter its current AEB tests to not only address the "changing" rear-end crash problem, but also discourage system performance degradation in more typical crash situations, create unintended safety consequences, or adversely affect AEB use due to nuisance activations. The Agency also sought comment on future suggestions for AEB generally (*i.e.*, beyond any near-term upgrade), including the adoption of additional AEB tests.

## Summary of Comments

### Capture Front Impact Events

Rivian and NTSB stated the Agency should add "cut-in" scenarios, while CAS expressed that NHTSA should add "lead vehicle maneuvers." Similar to Rivian and CAS, and in line with findings from its 2019 study, IIHS suggested adding scenarios to capture lead vehicles that were changing lanes or turning, and tests where the lead vehicle is a non-passenger vehicle (*e.g.*, medium- or heavy-duty truck) or motorcycle in order to improve the real-world effectiveness of AEB systems. Further, the organization suggested incorporating tests where the SV is turning (*i.e.*, cross traffic) or travelling on roads with speed limits of 112.7 kph (70 mph) or more. IIHS explained, as the Agency acknowledged in its March 2022 RFC notice, that these situations were over-represented in real-world rear-end crashes involving an AEB-equipped striking vehicle.<sup>190</sup> Although the group acknowledged that the majority of the crash types mentioned were "rare," those where an AEB-equipped vehicle struck a large truck or motorcycle accounted for approximately 40 percent

of fatal rear-end crashes, thus suggesting that a test scenario simulating this crash type should be given thoughtful consideration for adoption. Adasky also supported AEB testing for turning scenarios.

Other commenters also favored incorporation of certain scenarios recommended by IIHS. Intel, for example, expressed support for including oncoming and crossing traffic test scenarios, similar to those recently adopted by Euro NCAP. IDIADA, along with several public commenters, mentioned the need for higher-speed assessments. Since testing becomes more difficult at higher speeds, the test laboratory suggested the Agency should incorporate a requirement that AEB systems must be operational up to 120 kph (74.6 mph). NTSB also favored the addition of cross-traffic scenarios, assessments for various vehicle types and orientations, and assessments for "common roadway obstacles" like "roadway hardware" (*e.g.*, crash attenuators, concrete median barriers, etc.) that many vehicles do not currently detect.<sup>191</sup>

Finally, ZF Group supported adding an Emergency Steering Support (ESS) test, which it stated would assure vehicles provide steering (or added steering, in the case that the driver is already steering) to avoid a collision with the vehicle in front of it if there is not enough time for CIB to intervene effectively before a crash occurs. Examples of these scenarios include situations where vehicles are travelling at a high rate of speed and "scenarios with low overlap."

### Capture Backing Events

There were commenters, including TRC and Consumer Reports, who mentioned that the Agency should add rear automatic emergency braking (RAB). Consumer Reports suggested that the Agency adopt a rear cross-traffic warning (RCTW) test.

### Add Motorcycle or Other Powered 2-Wheeled Test Device

Some commenters stated, like IIHS, that the Agency should adopt AEB test scenarios for motorcycle test devices. DRI proposed AEB testing with a motorcycle and/or scooter test device because: (1) "motorcycle fatalities reached an all-time high" in 2020,<sup>192</sup> (2) the number of registered on-road motorcycles has been steadily

increasing,<sup>193</sup> and (3) NHTSA data shows that more than a quarter of motorcycle accidents involve rear-end crashes. FCW testing involving a motorcycle test device that was conducted by DRI showed that motorcycle detection rates varied widely compared to vehicle detection rates. The laboratory remarked that in many cases the SV either did not detect the motorcycle test device or detected it much later compared to the vehicle test device.

NTSB also supported AEB (and FCW) test assessments using a motorcycle test device.<sup>194</sup> Similarly, Intel suggested the Agency consider incorporation of the test device used in Euro NCAP's powered two-wheeler (PTW) tests.

### Add Additional AEB Test Scenarios Based on Real-World Data

Several commenters (Auto Innovators, BMW, FCA, and GM) specifically stated the Agency should not adopt any additional AEB test scenarios for NCAP unless real-world data supports their inclusion. FCA, GM, and Auto Innovators commented that current AEB systems have shown significant safety benefits in reducing rear-end crashes, such that according to GM and Auto Innovators, it is expected that adopting additional rear-end AEB test scenarios would likely offer little additional benefit.<sup>195</sup> The two commenters stated that any additional AEB performance assessments should be centered around new crash types (depending on system capabilities) and supported by crash data trends. In addition, Auto Innovators asserted that potential new scenarios, such as those involving turning by an SV or lead vehicle, a lead vehicle lane change, or alternative test targets, may require vehicles to have cameras offering a larger field of view, additional radars (such as on the vehicle front corners), and algorithm changes to permit detection of the added targets. As such, the organization reiterated their opinion that crash data should dictate the need for these tests, which should be harmonized with Euro NCAP. CAS also mentioned that crash statistics should be considered when considering new tests for NCAP and suggested that market penetration of the various

<sup>193</sup> IIHS data showed 4.2 million registrants in 2002 compared to 8.3 million in 2018.

<sup>194</sup> Safety Recommendation H-18-29, currently classified "Open—Acceptable Response."

<sup>195</sup> GM cited Leslie, A.J., Kiefer, R.J., Flannagan, C.A., Owen, S.H., & Schoettle, B.A. (2022). Analysis of the Field Effectiveness of General Motors Model Year 2013–2020 Advanced Driver Assistance System Features. UMTRI-2022-2 as a source of data considered for its conclusion.

<sup>190</sup> Cicchino & Zuby, 2019.

<sup>191</sup> Safety Recommendation H-20-1, currently classified "Open—Acceptable Response."

<sup>192</sup> According to DRI, there were 5,579 motorcycle fatalities in 2020 compared to 1,260 cyclist fatalities.



system types (e.g., camera, radar) should guide priority for future testing.

MEMA did not offer explicit suggestions for NHTSA to consider with respect to additional test scenarios that may be viable for inclusion, but the commenter did express support for the Agency's decision to "focus resources on emerging trends with the potential for future updates as the crash problem evolves." NTSB recommended that the Agency add tests (for all technologies) that assess higher speeds and increased complexities to evaluate "advanced capabilities." State Farm and NYC DOT/NYC DCAS, Vision Zero Task Force also expressed support for higher test speeds in general and tests to reflect real-world driving conditions and crashes.

#### Response to Comments and Agency Decisions

##### Capture Front Impact Events

While the LVS, LVM, and LVD scenarios cover a substantial number of frontal impact events, there are other frontal impact scenarios that will not be directly assessed by NHTSA's NCAP testing as adopted in this final notice.

Several commenters to the March 2022 RFC requested the addition of various intersection crash scenarios. The Agency agrees that, while the scenarios adopted for NCAP's AEB testing cover a large portion of crashes, there is a safety need for scenarios which cover intersection-specific interactions, such as left turn across path and straight crossing path conditions. As mentioned in the NCAP Roadmap section, NHTSA plans to consider the inclusion of these scenarios in the future. Pending necessary research, the Agency may implement these additional scenarios for model year 2032 vehicles.

Regarding AEB testing at higher speeds, NHTSA acknowledges that there is further safety potential to be realized by assessing CIB and DBS performance at speeds greater than those adopted for NCAP in this final notice. Indeed, NHTSA is aware, from a review of owner's manuals, that many vehicle manufacturers have equipped their vehicles with AEB systems that function at speeds much higher than those which will be evaluated by NCAP. Given the practical limitations of testing (e.g., safety of test personnel, vehicle and test equipment damage, etc.), test speeds are currently restricted. That said, the Agency expects that, with further evolution of test methods, vehicle systems, and equipment, test speeds could be increased in the future. The NCAP Roadmap currently incorporates a plan for further enhancement to the

adopted AEB tests with evaluations beginning with model year 2033 vehicles.

At this time, NHTSA is not incorporating ESS testing as ZF Group suggested. The Agency must further study the capabilities and limitations of systems meant to support the driver during these maneuvers prior to incorporating assessments in its NCAP testing. The Agency may decide to include an evaluation of ESS systems in the future, particularly if it moves to evaluating performance at higher speeds than those adopted in this final decision notice.

Additional recommendations included assessments using a variety of other objects as targets, such as crash attenuators, median barriers, and other roadway hardware. Large trucks were also proposed as possible impact targets for AEB evaluation. NHTSA does not have current research planned to evaluate these scenarios, but it may consider these, and other, assessments for the future.

##### Capture Backing Events

The Agency will not include backing scenarios, such as those mitigated by RAB or RCTW, in NCAP's AEB testing at this time. As noted in the March 2022 notice, NHTSA is currently amending its RAB test procedure to account for earlier comments received. Once this work is completed, NHTSA hopes to add the related assessments to NCAP. As noted in the NCAP Roadmap section, NHTSA's plan is to evaluate RAB systems starting with model year 2028 vehicles.

##### Add Motorcycle or Other Powered 2-Wheeled Target

In the March 2022 RFC notice, NHTSA stated that it was conducting additional research to evaluate vehicle AEB performance when approaching cyclists and motorcyclists. The Agency acknowledges, as did DRI, that motorcyclist fatalities have risen in recent years. Euro NCAP performs car-to-motorcyclist AEB testing under its AEB/Lane Support System (LSS) VRU Test Protocol.<sup>196</sup> Specifications for the motorcyclist test device used in Euro NCAP's testing can be found in Motorbike Users Safety Enhancement (MUSE) Deliverable 2.1, Motorcyclist Target Specifications.<sup>197</sup> <sup>198</sup> The test

<sup>196</sup> European New Car Assessment Programme (Euro NCAP) Test Protocol—AEB/LSS VRU systems, Implementation 2023. Version 4.5, December 2023.

<sup>197</sup> <https://www.utac.com/wp-content/uploads/2023/04/MUSE-d2-1-motorcyclist-target-specifications.pdf>.

device represents an average human adult motorcyclist on a motorcycle with dimensions based on average values of most registered motorcycles in Europe with a cylinder capacity of greater than 500 cc. Euro NCAP's AEB testing includes several scenarios, including rear stationary, rear braking, and front turn across path scenarios, all in daylight conditions.

Preliminary results of NHTSA's motorcycle research testing using five vehicles have shown that many factors, such as lane position of the test device, lighting condition, and speed may influence vehicle braking performance, and there was no discernable pattern across the five vehicles tested. Further, some concerns were noted with the motorcyclist surrogate design used. Thus, NHTSA has further research underway and planned. A report summarizing this initial research, which was conducted in both daylight and darkness conditions, is expected to be available in 2024.

NHTSA has expedited its follow-on research on AEB for other VRUs, namely bicyclists and motorcyclists. The Agency's research to develop and evaluate test procedures and surrogate targets for certain crash scenarios to address bicyclist and motorcyclist injuries in crashes with light vehicles is expected to be completed in 2024. As noted in the mid-term updates to NCAP in the NCAP roadmap finalized in this notice, NHTSA has included evaluation of AEB for mitigating crashes with bicyclists and motorcyclists starting with model year 2028 vehicles.

##### c. Additional AEB Environmental Test Conditions

In its March 2022 RFC notice, NHTSA noted that 51 percent of fatalities and 80 percent of MAIS 1–5 injuries caused by rear-end crashes occurred under daylight conditions. Further, nearly 92 percent of fatalities and 88 percent of injuries caused by such crashes occurred in clear weather.<sup>199</sup> However, IIHS's rear-end crash study concluded that AEB-equipped vehicles are over-represented for crashes occurring in certain weather conditions, such as

<sup>198</sup> When published, Euro NCAP will replace the specifications provided with those in ISO/AWI 19206–5, "Road vehicles—Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 5: Requirements for Powered Two-Wheeler targets". At the time of this publication, ISO/AWI 19206–5 is Under Development in Stage 20.00 (Preparatory, New project registered in TC/SC work programme).

<sup>199</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

snow and ice.<sup>200</sup> Given these findings and the fact that the Agency's proposal for PAEB systems encompassed testing under less-than-ideal environmental conditions (specifically in darkness), NHTSA sought comment on whether it should pursue research to assess AEB system performance under less-than-ideal environmental conditions, and if so, what environmental conditions would be appropriate. This research would subsequently inform further updates to NCAP testing.

#### Summary of Comments

Commenters were generally in favor of the Agency conducting research to support inclusion of evaluations for different environmental conditions to encourage improved AEB performance. However, responses were varied, with suggestions spanning lighting conditions, road surface conditions, atmospheric conditions, etc. There were also a few commenters who did not support additional research into alternative environmental test conditions.

#### Lighting Conditions

Several respondents, including ASC, Rivian, State Farm, and TRC, suggested that NHTSA add test scenarios that include different lighting conditions. ASC, CAS, Consumer Reports, and Uhnder favored assessments for dark, nighttime conditions as well as conditions that may cause glare or temporary driver blindness, such as those resulting from travelling directly toward the sun at dawn or dusk.

Bosch, Adasky, and The Lidar Coalition commented that they support testing in low light conditions. Similar assertions were expressed by public commenters who mentioned that current AEB systems are problematic because they do not perform well in low light. The Lidar Coalition commented that testing in low light (with no overhead lighting and use of only the lower beam headlamps) is necessary because of performance differences observed for various sensor types. The commenter asserted that: cameras have high resolution but do not work well (*i.e.*, cannot "see") in low light conditions; radar works well (*i.e.*, can "see") in such conditions but lacks the resolution to detect slow-moving or stationary objects and to distinguish between objects that are close together; and lidar can both "see" in low light

conditions and has high resolution, thus affording advantages where the other sensors independently cannot. Adasky stated that thermal cameras can perform well in dark conditions.

Although Auto Innovators, in general, did not support the consideration of alternative environmental conditions to assess AEB systems currently, they did express modest support for adding low light evaluations in the near-term. However, the group, in addition to TRC, cautioned that the GVT would likely have to be modified to permit taillight illumination (TRC) and "replicate the vehicle lighting or light reflection characteristics of real vehicles at night" (Auto Innovators).

#### Road Surface Conditions

Other commenters, including Rivian and CAS, recommended the Agency add test scenarios that evaluate performance on wet surfaces. CAS and Consumer Reports stated that assessments for icy conditions may also be appropriate, and IIHS suggested adding evaluations for "surfaces with reduced friction." IIHS stated that crash data shows that AEB-equipped vehicles are over-represented in rear-end crashes on "slippery roads" such that encouraging AEB systems through testing to adjust brake force and intervene earlier on slippery roads compared to dry roads should promote improved AEB performance in the real world. IIHS further mentioned that their testing has shown that "AEB systems initiate automated braking with the same force and time on 'slippery' roads as on snowy roads," suggesting that only one test condition would be necessary. Advocates also supported incorporating testing for various roadway conditions.

#### Atmospheric Conditions

Other respondents encouraged pursuing research to assess AEB performance in various atmospheric conditions that cause reduced driver visibility such as fog, smoke, ash, rain, hail, and snow (ASC and Uhnder). Uhnder remarked that fog alone causes more than 600 fatalities and over 16,300 injuries per year in the U.S.<sup>201</sup> and yet digital radar, which is "agnostic to lighting conditions" and functions in "degraded visibility environments," is available and could provide safety benefits.

Honda stated that NHTSA should first test in "normal" rain followed by fog, "heavy" rain, and snow. Although the automaker acknowledged that AEB

performance may be limited in heavy rain and snow conditions due to tire traction, the company stated that assuring effective AEB functionality in conditions representing "normal" rain was reasonable and appropriate. State Farm also supported testing in snow and over a range of fog and rain conditions since sensors are known to operate differently. Likewise, Consumer Reports supported testing in heavy rain and snow as well as in low-visibility conditions, such as those found in fog and smoke, and Adasky supported assessments for heavy rain, snow, fog, and sleet. Adasky asserted that such conditions are "typical and predictable;" therefore, AEB systems should function reliably. Conversely, Auto Innovators explicitly stated that they did not support testing in heavy rain and snow because of the loss of tire traction previously mentioned by Honda.

Several public commenters also expressed support for testing in inclement weather in general, stating current AEB systems are less reliable in such conditions. Additionally, Advocates stated that evaluating system performance under different weather and temperature conditions seems appropriate, since these are normal vehicle operating conditions. The group also stated that this testing will be essential to address inadequacies in system performance to assure the success of automated vehicles (AVs), as many of these technologies will serve as the building blocks for future AV development. Advocates, along with The League, suggested that NHTSA adopt those conditions that prove to be the most "problematic" for technologies during Agency research.

#### Use Real-World Data

BMW, FCA, Auto Innovators, and GM stated that NHTSA should use real-world crash data to guide development of future test conditions.

With respect to environmental conditions, Auto Innovators asserted that, if the Agency decides to pursue future research to assess AEB performance for varying environmental conditions, it should prioritize those conditions that occur more frequently in the real world before proceeding with assessments that simulate less frequently encountered conditions. The group cautioned that, at this time, the Agency should add only those conditions that are justifiable (*i.e.*, will result in large safety benefits) because adding "complex . . . variations in environmental conditions may require more sophisticated sensors and/or research and development that can

<sup>200</sup> Cicchino, J.B. & Zuby, D.S. (2019, August), Characteristics of rear-end crashes involving passenger vehicles with automatic emergency braking, *Traffic Injury Prevention*. 2019, VOL. 20, NO. S1, S112–S118, <https://doi.org/10.1080/15389588.2019.1576172>.

<sup>201</sup> "Low visibility." *Low Visibility—FHWA Road Weather Management*. [https://ops.fhwa.dot.gov/weather/weather\\_events/low\\_visibility.htm](https://ops.fhwa.dot.gov/weather/weather_events/low_visibility.htm).

ultimately affect affordability.” Likewise, BMW added that NHTSA should consider incorporating those environmental conditions that contribute to a higher percentage of accidents, critical injuries, and fatalities. That said, the manufacturer also stated they were not currently aware of any environmental condition that would be appropriate for inclusion. Similarly, GM remarked that real-world data shows that for those crashes with the highest Functional Years Lost that are relevant to the ADAS technologies the Agency is considering adopting in NCAP, the environmental conditions were typically clear and dry, such that there is not a strong need to include alternative assessments.

#### Repeatability and Reproducibility Concerns

Several commenters (Auto Innovators, Bosch, GM, Intel, and TRC) cautioned NHTSA that repeatability and reproducibility is a concern for assessments involving environmental conditions. In fact, Intel, GM, and Auto Innovators stated they did not support the inclusion of less-than-ideal environmental conditions in NCAP assessments for this reason. GM added that testing additional environmental conditions would be “inherently difficult and expensive to precisely control,” and Auto Innovators stated that, except for possible low light conditions, it would add “unnecessary test complexity.” Both commenters further stated that the limited assessments conducted by NCAP would pale in comparison to the vast range of conditions and overall performance considerations that must be factored in during product design and development.

#### Add Changes to Test Conditions to NCAP Roadmap

Some commenters (Auto Innovators, BMW, Bosch, and Consumer Reports) requested that NHTSA include any planned research into environmental conditions, along with expected completion dates, in the NCAP roadmap so that industry would have time to prepare for such changes.

#### Response to Comments and Agency Decisions

At the moment, the Agency has decided to continue its research on AEB technologies. Further enhancements to AEB with additional scenarios and test conditions will be considered in the long-term updates to NCAP for the period 2029 to 2033.

### V. Adding Pedestrian Automatic Emergency Braking (PAEB) Technology

NHTSA is committed to improving the safety of VRUs and acknowledges the rapidly growing safety risk to pedestrians, with 7,388 pedestrians killed in 2021 and 60,577 injured in traffic crashes in the U.S.<sup>202</sup> NHTSA notes that between 2012 and 2021, pedestrian fatalities rose from 14 to 17 percent of all traffic fatalities. From 2020 to 2021 alone, pedestrian fatalities increased 13 percent, and pedestrian injuries increased 11 percent. PAEB has the potential to mitigate this risk, with a recent Swedish study finding that in daylight and twilight conditions, the presence of PAEB reduced pedestrian crash risk by 18 percent.<sup>203</sup> Given this substantial safety need, NHTSA is adopting PAEB evaluation as part of this NCAP upgrade.

By way of background, PAEB systems function like AEB systems but detect pedestrians instead of vehicles. PAEB systems use information from forward-looking sensors to warn the driver and actively apply the vehicle’s brakes when a pedestrian (or, sometimes, cyclist, scooter-rider, motorcyclist) is in the path of the vehicle and the driver has not acted to avoid the crash. Current PAEB systems typically use cameras to determine whether a pedestrian is in imminent danger of being struck by the vehicle. However, some systems use a combination of cameras, radars, and/or possibly lidar sensors.

#### A. Proposed Pedestrian Automatic Emergency Braking Test Procedures

Most pedestrian crashes occur when a pedestrian is in the forward path of a driver’s vehicle. Four common pedestrian crash scenarios include when the vehicle is:

1. Heading straight and a pedestrian is crossing the road;
2. Turning right and a pedestrian is crossing the road;
3. Turning left and a pedestrian is crossing the road; and
4. Heading straight and a pedestrian is walking along or against traffic.

These four crash scenarios are defined as Scenarios S1–S4, respectively, by the Crash Avoidance Metrics Partnership

<sup>202</sup> National Center for Statistics and Analysis. (2023, June). *Pedestrians*. (Traffic Safety Facts, 2021 Data. Report No. DOT HS 813 458), Washington, DC: National Highway Traffic Safety Administration.

<sup>203</sup> Kullgren, A., Amin, K., & Tingvall, C. (2023) Effects on crash risk of automatic emergency braking systems for pedestrians and bicyclists, *Traffic Injury Prevention*, 24:sup1, S111–S115, DOI: 10.1080/15389588.2022.2131403.

(CAMP) Crash Imminent Braking (CIB) Consortium.<sup>204</sup>

NHTSA’s draft research PAEB test procedure, published on November 21, 2019, and referenced herein as the 2019 PAEB test procedure, included two scenarios, S1 and S4, which were identified when combined as the two most frequent, injurious, and fatal crash scenarios involving pedestrians in the U.S.<sup>205</sup> Scenario S1 represents a pedestrian crossing the road in front of the vehicle, and the S4 scenario represents a pedestrian moving with or against traffic along the side of the road in the path of the vehicle. Both test scenarios are expanded into multiple test conditions representing multiple pedestrian impact locations. A short description of each test condition (*e.g.*, S1a, S4b) described in the 2019 PAEB test procedure is presented below for each test scenario (S1 and S4):

- S1
  - S1a—The SV travels in a straight, forward direction at 16 kph (9.9 mph) or 40 kph (24.9 mph). An adult pedestrian mannequin crosses perpendicular to the vehicle’s line of travel at 5 kph (3.1 mph). The SV encounters the mannequin walking from the right (*i.e.*, the passenger’s side of the vehicle) with 25 percent overlap of the vehicle.<sup>207</sup> See Figure 7(a) for a scenario diagram.
  - S1b—The SV travels in a straight, forward direction at 16 kph (9.9 mph) or 40 kph (24.9 mph). An adult pedestrian mannequin crosses perpendicular to the vehicle’s line of travel at 5 kph (3.1 mph). The SV encounters the mannequin walking from the right with 50 percent overlap of the vehicle. See Figure 7(b) for a scenario diagram.
  - S1c—The SV travels in a straight, forward direction at 16 kph (9.9 mph) or 40 kph (24.9 mph). An adult pedestrian mannequin crosses perpendicular to the vehicle’s line of travel at 5 kph (3.1 mph). The SV encounters the mannequin walking from the right with 75 percent overlap

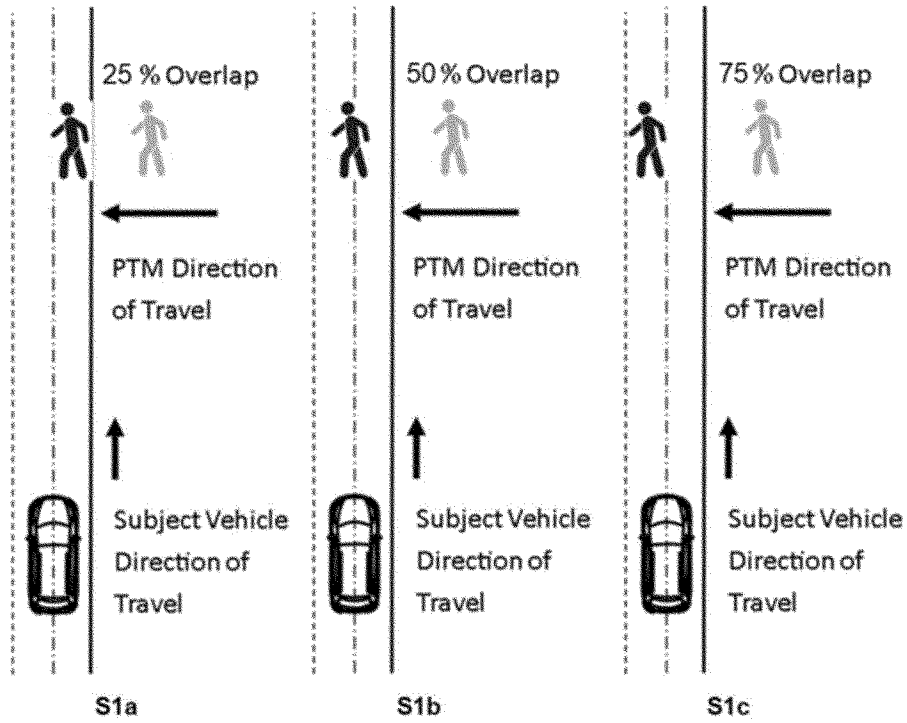
<sup>204</sup> Carpenter, M.G., Moury, M.T., Skvarce, J.R., Struck, M. Zwicky, T.D., & Kiger, S.M. (2014, June). *Objective tests for forward looking pedestrian crash avoidance/mitigation systems: Final report* (Report No. DOT HS 812 040), Washington, DC: National Highway Traffic Safety Administration.

<sup>205</sup> Yanagisawa, M., Swanson, E., Azeredo, P., & Najm, W.G. (2017, April). Estimation of potential safety benefits for pedestrian crash avoidance/mitigation systems. (Report No. DOT HS 812 400). Washington, DC: National Highway Traffic Safety Administration.

<sup>206</sup> 84 FR 64405 (Nov. 21, 2019).

<sup>207</sup> Overlap is defined as the percent of the vehicle’s width that the pedestrian would traverse prior to impact if the vehicle’s speed and pedestrian’s speed remain constant.

of the vehicle. See Figure 7(c) for a diagram.

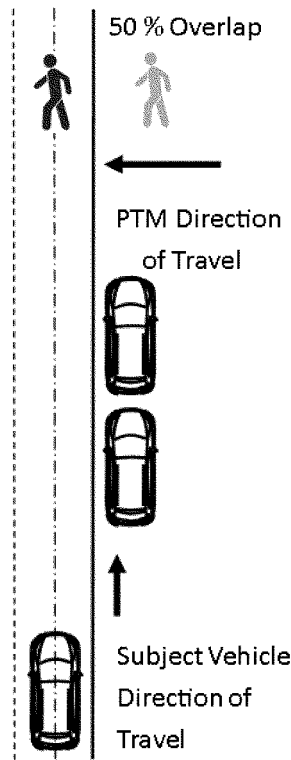


**Figure 7: Adult Pedestrian Crossing Path Conditions S1a (a), S1b (b), and S1c (c)**

○ S1d—The SV travels in a straight, forward direction at 16 kph (9.9 mph) or 40 kph (24.9 mph). A child pedestrian mannequin crosses

perpendicular to the vehicle's line of travel at 5 kph (3.1 mph). The SV encounters the child mannequin running from behind parked cars on

the right with 50 percent overlap of the vehicle. See Figure 8 for a diagram.

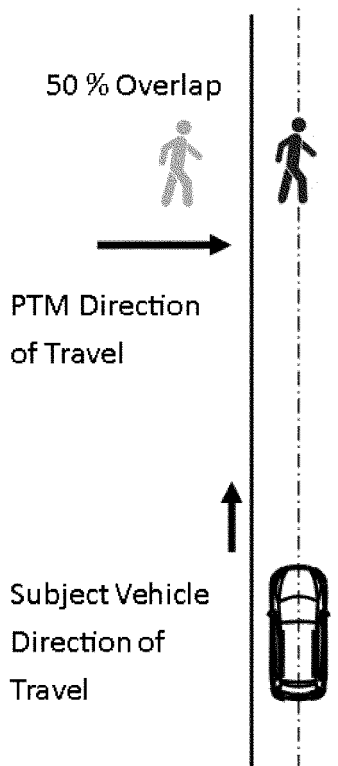


**Figure 8: Child Pedestrian (Obstructed) Crossing Path Condition S1d**

○ S1e—The SV travels in a straight, forward direction at 40 kph (24.9 mph). An adult pedestrian mannequin crosses perpendicular to the vehicle’s

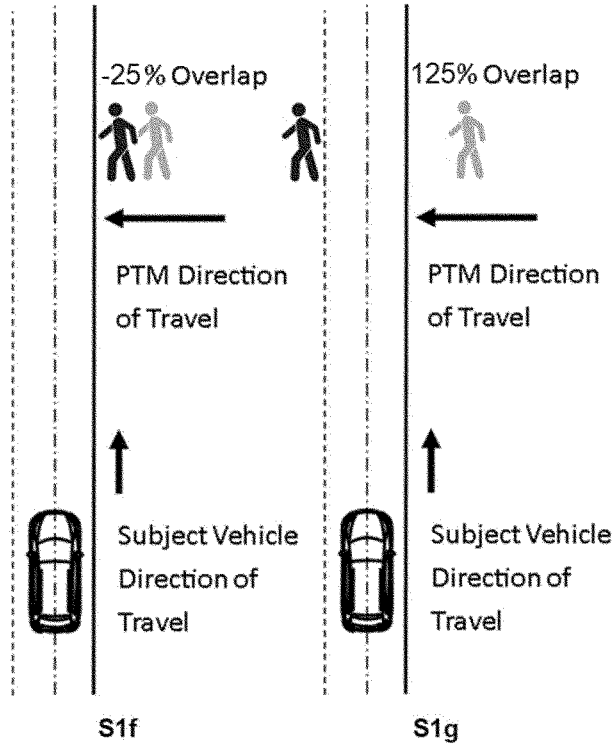
line of travel at 8 kph (5.0 mph). The SV encounters the mannequin walking from the left (*i.e.*, the driver’s side of the vehicle) with 50 percent

overlap of the vehicle. See Figure 9 for a diagram.



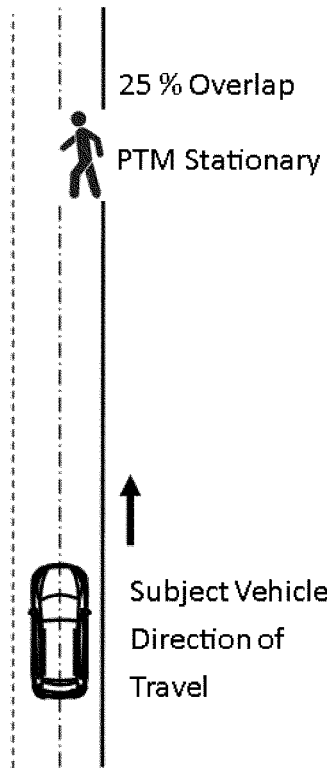
**Figure 9: Adult Pedestrian Crossing Path Condition S1e**

- S1f—The SV travels in a straight, forward direction at 40 kph (24.9 mph). An adult pedestrian mannequin moves perpendicular to the vehicle’s line of travel toward the vehicle’s right at 5 kph (3.1 mph), but it stops
- S1g—The SV travels in a straight, forward direction at 40 kph (24.9 mph). An adult pedestrian mannequin crosses perpendicular to the vehicle’s line of travel toward the vehicle’s right at 5 kph (3.1 mph). The mannequin clears the SV’s path (125 percent overlap). See Figure 10(b) for a diagram.



**Figure 10: Adult Pedestrian False Positive Crossing Path Conditions S1f (a) and S1g (b)**

- S4
- S4a—The SV travels in a straight, forward direction at 16 kph (9.9 mph) or 40 kph (24.9 mph). An adult pedestrian mannequin is stationary in front of the SV at 25 percent overlap.
- S4b—The SV travels in a straight, forward direction at 16 kph (9.9 mph) or 40 kph (24.9 mph). An adult pedestrian mannequin is stationary in front of the SV at 25 percent overlap. The mannequin is facing toward the SV on the right hand side of the road.

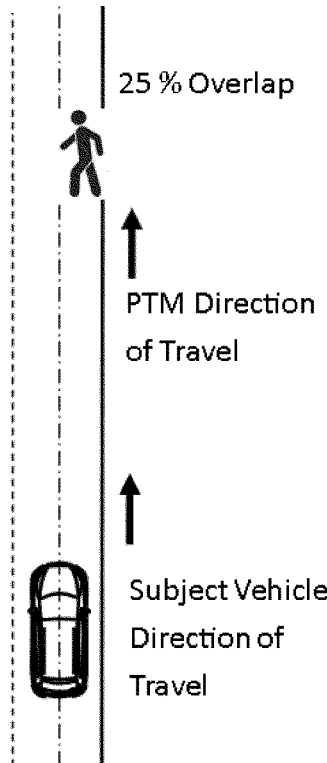


**Figure 11: Adult Pedestrian Stationary In-Path Conditions S4a (Pedestrian Facing Away from SV) and S4b (Pedestrian Facing Toward SV)**

○ S4c—The SV travels in a straight, forward direction at 40 kph (24.9 mph). An adult pedestrian mannequin

is walking away from the approaching SV at 5 kph (3.1 mph), parallel to the flow of traffic. The mannequin is

located on the right hand side of the road at 25 percent overlap. See Figure 12 for a diagram.



**Figure 12: Adult Pedestrian Moving In-Path Condition S4c**



The proposed 2019 PAEB test procedure required that all testing take place during daylight hours with good atmospheric visibility and the use of possible pedestrian mannequins.

As detailed in the March 2022 RFC Notice, the Agency proposed several changes to the 2019 PAEB test procedure involving the pedestrian mannequins, test conditions, test

variants for SV speed, specified lighting conditions, and the number of test trials required to be conducted for each test variant. The RFC included the following:

1. Use of articulated pedestrian mannequins with moving legs, instead of the possible child and adult pedestrian mannequins;
2. SV test speeds from 10 kph (6.2 mph) to 60 kph (37.3 mph) in

increments of 10 kph (6.2 mph) for each test condition (S1a, S1b, S1c, S1d, S1e, S4a, S4b, and S4c)

3. PAEB evaluation in darkness lighting conditions with the vehicle's lower beam headlamps switched on, in addition to daylight conditions.

The test matrix of the proposed PAEB evaluations is summarized in Table 17.

TABLE 17—TEST MATRIX OF PROPOSED PAEB EVALUATIONS IN THE MARCH 2022 RFC NOTICE

Test cond.	Size	Test speeds (kph (mph))		Movement classification	Path origin	Overlap (%)	Obstruction	Light condition
		SV	Pedestrian					
S1a	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Walk	Right	25	No	Daylight Darkness—Lower Beam.
S1b	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Walk	Right	50	No	Daylight Darkness—Lower Beam.
S1c	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Walk	Right	75	No	Daylight Darkness—Lower Beam.
S1d	Child	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Run	Right	50	Yes	Daylight Darkness—Lower Beam.
S1e	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	8 (5.0)	Run	Left	50	No	Daylight Darkness—Lower Beam.
S4a	Adult (Facing Away).	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	0	Stationary	Right	25	No	Daylight Darkness—Lower Beam.
S4b	Adult (Facing Toward).	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	0	Stationary	Right	25	No	Daylight Darkness—Lower Beam.
S4c	Adult (Facing Away).	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Walk	Right	25	No	Daylight Darkness—Lower Beam.

*B. Linking Proposed PAEB Test Scenarios With Real-World Crashes*

A review of pedestrian crashes from the 2011–2012 GES and FARS data sets where a light vehicle's front struck the pedestrian as the first event and there was no avoidance maneuver<sup>208</sup> found that, on average, the S1 and S4 pre-crash scenarios represent approximately 10,431 (17 percent) of the 62,917 real-world crashes involving pedestrians annually. The two pre-crash scenarios also account for 3,889 (30 percent) of the 13,058 MAIS 2+ and 2,739 (40 percent) of the 6,770 MAIS 3+ injured pedestrians. In these real-world crashes represented by S1 and S4 scenarios, there were, on average, 2,016 fatal vehicle-to-pedestrian crashes annually, representing 60 percent of the 3,337 fatal vehicle-pedestrian crashes.

More specifically, the researchers from the study found that for the S1 scenario, approximately 7,481 (12 percent) and 1,396 (42 percent) real-world crashes involving pedestrian injuries and fatalities occurred annually, respectively. These resulted in, on average, 2,682 (21 percent) of MAIS 2+ injured pedestrians and 1,879 (28 percent) of MAIS 3+ injured pedestrians

yearly. For the S4 scenario, approximately 2,950 (5 percent) and 620 (19 percent) of real-world crashes involving pedestrian injuries and fatalities occurred annually, respectively. These resulted in, on average, 1,207 (9 percent) of MAIS 2+ injured pedestrians and 860 (13 percent) of MAIS 3+ injured pedestrians yearly.

The above figures include both daytime and nighttime crashes. Though the 2019 PAEB test procedure specified daylight conditions, there is a demonstrated safety need for the Agency and industry to jointly address nighttime pedestrian crashes in addition to those crashes that occur in the daytime. The Volpe study of 2011–2015 FARS and GES crash data showed that 75 percent of pedestrian fatalities and 38 percent of pedestrian injuries occurred in dark conditions, including darkness illuminated by overhead lighting.<sup>209</sup> A study of California, North Carolina, and Texas crash data revealed that pedestrians struck in the dark were five times more likely to be killed than those struck during the day.<sup>210</sup> Various

factors make low-light driving inherently more dangerous for pedestrians than driving during daylight hours, including a reduction in pedestrian visibility, night vision deterioration as an individual ages,<sup>211</sup> an increased likelihood of driver drowsiness at nighttime,<sup>212</sup> and an increased likelihood that both pedestrians and drivers are under the influence of drugs or alcohol in darkness compared to daylight.<sup>213</sup> Furthermore, both IIHS and AAA have shown performance issues with current PAEB systems in dark conditions.<sup>214</sup>

With regard to SV speeds, a review of 2011–2015 FARS and GES crash data sets showed that, for crashes where posted speed limit was known, 8 percent of pedestrian fatalities and 36 percent of pedestrian injuries resulted from crashes that occurred on roadways with posted speeds of 40.2 kph (25 mph) and less (*i.e.*, at speeds equivalent

Traffic Injury Prevention, 23:7, 434–439, DOI: 10.1080/15389588.2022.2100362.

<sup>211</sup> <https://www.nsc.org/road/safety-topics/driving-at-night>.

<sup>212</sup> <https://www.nhtsa.gov/sites/nhtsa.gov/files/808707.pdf>.

<sup>213</sup> <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/58726/99831.pdf?sequence=1&isAllowed=y>.

<sup>214</sup> Cicchino, J.B (2022, February), *Effects of automatic emergency braking systems on pedestrian crash risk*, Insurance Institute for Highway Safety, <https://www.iihs.org/api/datastoredocument/bibliography/2243>.

<sup>208</sup> Yanagisawa, M., Swanson, E., Azeredo, P., & Najm, W.G. (2017, April), *Estimation of potential safety benefits for pedestrian crash avoidance/mitigation systems* (Report No. DOT HS 812 400), Washington, DC: National Highway Traffic Safety Administration.

<sup>209</sup> Yanagisawa, M., Swanson, E., Azeredo, P., & Najm, W.G. (2017, April), *Estimation of potential safety benefits for pedestrian crash avoidance/mitigation systems* (Report No. DOT HS 812 400), Washington, DC: National Highway Traffic Safety Administration.

<sup>210</sup> Ferenchak, Nicholas N., Gutierrez, Risa E., & Singleton, Patrick A. (2022), *Shedding light on the pedestrian safety crisis: An analysis across the injury severity spectrum by lighting condition*,

to those covered by NHTSA's 2019 PAEB test procedure), whereas 38 percent of fatalities and 76 percent of injuries occurred as a result of crashes on roadways with posted speeds of 56.3 kph (35 mph) and less.<sup>215 216</sup> By adopting a higher maximum test speed than the one in the 2019 draft PAEB procedure, the Agency could address an additional 30 percent of fatalities and 40 percent of injuries. Since speeding was a reported factor in only 5 percent of the fatal pedestrian crashes and 2 percent of the injurious pedestrian crashes, NHTSA reasoned that the posted speed may correlate closely with the travel speed of the vehicle prior to impact with the pedestrian.<sup>217 218</sup>

Finally, roadway alignment and grade for real-world pedestrian crashes in Volpe's 2011–2015 data set were found to be comparable to those prescribed in the Agency's 2019 PAEB test procedures. Of those pedestrian crashes where roadway alignment was known, 94 percent of both fatal and injurious crashes occurred on a straight roadway, and 84 percent and 88 percent of fatal and injurious pedestrian crashes, respectively, occurred on a level roadway.

### C. PAEB Installation Rates and Research Tests

#### 1. PAEB Installation Rates

New vehicles equipped with PAEB systems, like those equipped with AEB systems, are currently broadly available. In the five years between model years 2018 and 2023, the percentage of the fleet fitted with standard PAEB systems rose from 19 percent to 91 percent. Not only has the presence of PAEB increased, but system performance has improved substantially. In model year 2019, 21 percent of vehicles tested by IIHS for PAEB performance received a "Superior" score, 27 percent received "Advanced," 5 percent received "Basic," and 4 percent received no credit. The remaining 44 percent did not have the technology available. By

<sup>215</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>216</sup> The posted speed limit was either not reported or was unknown in 4 percent of fatal pedestrian crashes and 29 percent of pedestrian crashes that resulted in injuries.

<sup>217</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>218</sup> In 4 percent of fatal and 11 percent of injurious pedestrian crashes, it was unknown or not reported whether speeding was a factor.

contrast, in model year 2022, only 12 percent of vehicles did not have PAEB available; 54 percent received "Superior" ratings and 30 percent received "Advanced" ratings.<sup>219 220</sup> The Agency has observed similar improvements in PAEB performance over this period during its research testing, as discussed in the sections to follow.

#### 2. Model Year 2019 and 2020 Research Testing

As described in the March 2022 RFC notice, the Agency conducted a series of tests on the same 11 model year 2019 and 2020 vehicles used in the CIB testing series to assess the operational range and performance of then-current PAEB systems. For the purpose of this study, the Agency used the 2019 PAEB test procedure but employed the articulating mannequins in lieu of possible mannequins and expanded the test procedure specifications to include higher vehicle test speeds of 60 kph (37.2 mph) for the S1b, S1d, and S1e test conditions and 80 kph (49.7 mph) for the S4a and S4c conditions.<sup>221</sup> For each test, the SV speed was incrementally increased to identify when each SV reached its operational limits and did not respond to the pedestrian mannequin. When no or late intervention occurred for a vehicle and test condition (*i.e.*, combination of test scenario and speed), NHTSA repeated the test condition at a test speed that was 5 kph (3.1 mph) lower. This reduced speed defined the system's upper capabilities. NHTSA also chose to alter the lighting conditions from the 2019 PAEB test procedure specifications and conducted tests in both daylight and dark conditions using the vehicles' lower or upper beam headlamps as the only light source to illuminate the pedestrian mannequin. For most of the darkness tests, no overhead ambient light source was provided in either condition; however, for two of the model year 2020 vehicles, limited testing was also conducted using the vehicles' lower beam headlamps and overhead lights to investigate possible performance differences when using

<sup>219</sup> IIHS's vehicle-to-pedestrian rating is a points-based assessment. A maximum of six points is possible, and points are assigned based on average amount of speed reduction afforded in each of three test scenarios, with bonus points awarded for vehicles that warn a driver at least 2.1 seconds prior to impact in a test condition similar to NHTSA's S1a.

<sup>220</sup> <https://iihs.org/ratings/>.

<sup>221</sup> These test speeds represent the maximum test speeds potentially utilized for a given test condition. The actual speeds used for a given vehicle and test condition depended on observed PAEB system performance.

overhead lighting. These vehicles were subjected to PAEB conditions S1b, S1d, S1e, S4a, and S4c at test speeds of 16 kph (9.9 mph) and 40 kph (24.9 mph).

The Agency's characterization testing showed that many model year 2019 and 2020 vehicles were able to repeatedly avoid impacting the pedestrian mannequins at higher test speeds for S1 and S4 than those specified in the 2019 PAEB test procedure, and several vehicles repeatably achieved full crash avoidance at speeds up to 60 kph (37.3 mph) or higher.<sup>222</sup> These findings suggested that PAEB system performance at the time exceeded most of the testing requirements outlined in NHTSA's 2019 PAEB test procedure. Specific to testing in dark lighting conditions, PAEB system performance generally degraded in dark conditions compared to daylight conditions, results which align well with IIHS's system effectiveness study for 2017–2020 model year vehicles. IIHS found that although PAEB systems were associated with a 32 percent reduction in pedestrian crashes occurring during daylight and a 33 percent reduction in pedestrian crashes for areas with artificial lighting during dawn, dusk, or at night, there was no evidence that PAEB systems were effective at nighttime without street lighting.<sup>223</sup> With regard to overhead lighting, NHTSA's data suggested that a vehicle's PAEB system performs only slightly better with overhead lighting versus no overhead lighting.

#### 3. Model Year 2021 and 2022 Research Testing

Subsequently, NHTSA conducted a series of PAEB research tests to further assess current fleet performance.<sup>224</sup> This testing, which generally aligned well with NHTSA's proposal for NCAP PAEB assessments, involved 12 model year 2021 and 2022 light vehicles and included PAEB testing for the following PAEB test conditions: S1a, S1b, S1c, S1d, S1e, S4a, S4b, and S4c. Testing was conducted under both daylight and darkness lighting conditions. For darkness conditions, NHTSA evaluated

<sup>222</sup> See Docket No. NHTSA–2021–0002–0002. There are embedded reports titled, "PEDESTRIAN AUTOMATIC EMERGENCY BRAKING SYSTEM RESEARCH TEST" for each of the 11 vehicle make/models.

<sup>223</sup> Cicchino, J.B. (2022, February), *Effects of automatic emergency braking systems on pedestrian crash risk*, Insurance Institute for Highway Safety, <https://www.iihs.org/api/datastoredocument/bibliography/2243>.

<sup>224</sup> National Highway Traffic Safety Administration (2023, March). 2022 Light Vehicle Pedestrian Automatic Emergency Braking Test Summary. Washington, DC: National Highway Traffic Safety Administration.

the PAEB systems using lower beam headlamps, but for select conditions (S1b, S4a, and S4c), NHTSA also evaluated systems using upper beam headlamps. NHTSA utilized both adult

and child articulated mannequins for this series. The goal of this research was to assess NHTSA’s PAEB proposals (outlined in subsequent sections) and to gain further knowledge regarding

capabilities of the current vehicle fleet. See Table 18 below for nominal test parameters used in this series of research tests.

TABLE 18—NOMINAL TEST PARAMETERS FOR MODEL YEAR 2021–2022 PAEB RESEARCH TESTING

Test condition	Size	Test speeds (kph (mph))		Movement classification	Path origin	Overlap (%)	Obstruction	Light condition
		SV	Pedestrian					
S1a	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Walk	Right	25	No	Daylight. Darkness—Lower Beam.
S1b	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Walk	Right	50	No	Daylight. Darkness—Lower Beam. Darkness—Upper Beam.
S1c	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Walk	Right	75	No	Daylight. Darkness—Lower Beam.
S1d	Child	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	5 (3.1)	Run	Right	50	Yes	Daylight. Darkness—Lower Beam.
S1e	Adult	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	8 (5.0)	Run	Left	50	No	Daylight. Darkness—Lower Beam.
S4a	Adult (Facing Away).	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	0	Stationary	Right	25	No	Daylight. Darkness—Lower Beam. Darkness—Upper Beam.
S4b	Adult (Facing Toward).	10, 20, 30, 40, 50, 60 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3).	0	Stationary	Right	25	No	Daylight. Darkness—Lower Beam.
S4c	Adult (Facing Away).	10, 20, 30, 40, 50, 60, 65 (6.2, 12.4, 18.6, 24.9, 31.1, 37.3, 40.4).	5 (3.1)	Walk	Right	25	No	Daylight. Darkness—Lower Beam. Darkness—Upper Beam.

Like the Agency’s AEB characterization research, testing for each PAEB scenario advanced from the lowest SV speed to the highest, with one initial trial conducted per test speed. If the SV did not contact the pedestrian mannequin during the initial trial for a given speed, the SV speed was increased by 10 kph (6.2 mph) and the next trial was conducted. This iterative process continued until the maximum test speed was reached.<sup>225</sup> However, if the SV contacted the pedestrian mannequin for the initial trial conducted for test speeds of 20 kph (12.4 mph) or greater, and the SV speed at the time of impact was at least 50 percent less than the initial SV speed, the Agency performed up to four additional trials at the same SV speed.<sup>226</sup> If the SV speed at the time of impact was 50 percent or greater than the initial SV speed, testing for that scenario ended. Relevant outcomes of this research are detailed throughout the applicable sections of this notice. Overall, vehicle performance in this test series was shown to have improved from the already relatively strong model year 2019–2020 research test series.

*D. Summary of Comments, Response to Comments, and Agency Decisions Pedestrian Automatic Emergency Braking Technology Inclusion in General*

Broadly, commenters were in favor of evaluating PAEB systems on new vehicle models. Many noted that pedestrian and cyclist fatalities are rising quickly relative to vehicle occupant fatalities. NSC presented data to show that in 2020, an estimated 6,721 pedestrians were killed, a 33-year high. On a local level, several city governments, transportation departments, and advocacy groups submitted pedestrian crash data from their own cities to support inclusion of PAEB evaluations in NCAP (Portland, OR; Minneapolis, MN; Boston, MA; Philadelphia, PA; New York, NY; and Bike Anchorage, among others). Data supplied by Bosch showed that an estimated 21,300 crashes with injuries and/or fatalities could be eliminated each year assuming full fleet penetration of PAEB.<sup>227</sup> Bosch also presented data from IIHS that showed the presence of a PAEB system results in a 25 to 27 percent reduction in the risk of overall pedestrian crashes and a 29 to 30 percent reduction in risk of injurious pedestrian crashes.<sup>228</sup> Advocates stated

that the research, analyses, and justification laid forth in the March 2022 RFC notice were detailed and sound, and CR suggested that the Agency should take action as quickly as possible given the rapid rise in crashes involving VRUs.

NSC also noted that VRU protection is one of the “largest gaps” in the current NCAP. In general, commenters strongly favored a paradigm shift in NHTSA’s vehicle ratings program. NCAP ratings currently address safety of the vehicle occupants only; however, many wished to see the safety information provided expand beyond the vehicle and extend to VRUs in the wider community. Some individuals indicated that they do not feel safe as a VRU. Commenters often stated that only vehicle purchasers (*i.e.*, not VRUs) can choose vehicles that are designed to protect VRUs. Aptiv stated that vehicle-to-VRU scenarios should be treated with greater stringency than vehicle-to-vehicle scenarios because of the risk of severe injury and/or fatality to those outside of the vehicle. NTSB stated it has previously called on NHTSA to implement performance tests for evaluating PAEB systems<sup>229</sup> and to incorporate them into NCAP,<sup>230</sup> noting that these actions might incentivize vehicle manufacturers to include and improve PAEB systems.

<sup>225</sup> For S4 scenarios, after 60 kph (37.3 mph), the next, and final, test speed was 65 kph (40.4 mph).

<sup>226</sup> Vehicle-to-pedestrian contact at the lowest test speed of 10 kph (6.2 mph) was noted but did not result in a cessation of testing at the next highest test speed.

<sup>227</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-3613>. See attachment 4.

<sup>228</sup> Cicchino, J.B. (2022, February), *Effects of automatic emergency braking systems on pedestrian crash risk*, Insurance Institute for

Highway Safety, <https://www.iihs.org/api/datastoredocument/bibliography/2243>.

<sup>229</sup> Safety Recommendation H–18–42.

<sup>230</sup> Safety Recommendation H–18–43.

Comments received in response to NHTSA's proposal are summarized below, along with the corresponding Agency decision.

#### 1. Test Conditions for S1 and S4, Including False Positive Assessments S1f and S1g and Varying Lighting Conditions

Because the Agency is committed to reducing test burden whenever appropriate, NHTSA proposed to include Scenarios S1a–e and S4a–c in its upcoming NCAP assessment but sought comments on the necessity of running each test condition to adequately address the safety problem. Further, NHTSA did not propose to include PAEB false positive test conditions (*i.e.*, S1f and S1g) in NCAP in its March 2022 notice. However, it requested comment on whether the omission of these test conditions is acceptable.

In addition to performing PAEB testing in daylight conditions, NHTSA's proposal for PAEB in NCAP included executing scenarios S1a–e and S4a–c in dark lighting conditions to simulate nighttime pedestrian encounters. As detailed in the RFC notice and by many commenters, nighttime travel is risky for VRUs.<sup>231</sup> In 2021, most pedestrian fatalities occurred in the dark (77 percent).<sup>232</sup> NHTSA sought comment on this approach.

#### Summary of Comments

Several commenters stated that the Agency should move forward with the proposed PAEB test conditions. Specifically, Uhnder, CAS, FCA, AAA, ASC, Intel, and one individual submitted comments in support of moving forward with test conditions S1a–e and S4a–c. CAS and the individual commenter noted that reducing test burden without empirical evidence supporting this decision will not adequately address the safety problem. AAA asserted that inclusion of the proposed test plan would “characterize system response to variations of kinematic characteristics realistically encountered in the naturalistic environment.” To reduce test burden while maintaining real-world relevance and test stringency, Intel reasoned that, since these test conditions are all well-known to

<sup>231</sup> As detailed in the March 2022 RFC notice, Volpe's 2011–2015 FARS data set showed that 36 percent of pedestrian fatalities occurred in the dark with no overhead lights.

<sup>232</sup> National Center for Statistics and Analysis. (2023, June). *Pedestrians*. (Traffic Safety Facts, 2021 Data. Report No. DOT HS 813 458). Washington, DC: National Highway Traffic Safety Administration.

industry and have been defined in existing international regulations, NHTSA could require OEMs to self-report predicted performance data and the Agency could “spot-check” results, reflecting Euro NCAP's methodology. As an alternative approach to reduce burden, Toyota posed that NHTSA could determine a subgroup of certain scenarios (and/or test speeds) that will ensure adequate performance across a range of conditions/speeds and run this subgroup of tests rather than the full battery. Instead of reducing the test matrix at this time, Uhnder and ASC suggested NHTSA could re-evaluate the necessity for each test condition on a regular basis; at that time, tests could be reduced if there is no longer a need.

Several other commenters provided general input on which test conditions should be selected for inclusion. Mercedes-Benz and Advocates noted that test conditions selected should reflect real-world conditions and needs, and those needs should be supported by statistically significant data. Advocates added that NHTSA should select test conditions which give the Agency confidence that the system will operate as intended by the manufacturer.

Some commenters recommended specific reductions for the proposed test conditions. Pertinent comments are summarized below.

#### S1 Test Conditions

Many commenters requested the Agency reduce the test plan proposed for the S1 scenario. HATCI, Honda, Auto Innovators, MEMA, GM, and BMW supported removal of S1b, a test condition involving an adult-sized pedestrian mannequin entering the roadway from the nearside with 50 percent overlap of the vehicle at point of contact. HATCI's rationale for removal of S1b was that the 25 percent (S1a) and 75 percent (S1c) overlap conditions address the 50 percent condition adequately; therefore, the S1b test condition would be redundant. Bosch, Honda, MEMA, BMW, and Auto Innovators agreed with HATCI's sentiments. GM supported this rationale for a pass/fail scoring system; however, the manufacturer recommended that the Agency adopt a wider range of test conditions if NCAP ratings would be assigned according to a points-based system. Some of the same commenters supporting a reduction in the test matrix for the S1 scenario (Honda, Auto Innovators, BMW) asserted that S1c should also be removed because they considered the S1a (25 percent overlap) condition to be the most stringent test case. TRC also stated that S1c was redundant and could be removed for

similar reasons; the laboratory did not mention removal of S1b. Mercedes-Benz supported harmonization with international test protocols for the PAEB crossing conditions whenever possible. Similarly, Bosch recommended harmonization with Euro NCAP's PAEB evaluation.

#### S4 Test Conditions

For the S4 scenarios, Mercedes-Benz, Auto Innovators, Subaru, and BMW recommended NHTSA remove both S4a and S4b from its test plan. S4a and S4b both involve the use of a stationary pedestrian mannequin situated on the nearside of the road at a 25 percent overlap facing away from (S4a) or towards (S4b) the SV. Mercedes-Benz was unsupportive of the use of stationary targets, citing data from three resources: a Volpe study, which did not identify any stationary scenarios;<sup>233</sup> an ISO standard, which does not prescribe the use of any stationary pedestrian tests due to low occurrence;<sup>234</sup> and a Mercedes-Benz study of German In Depth Accident Study (GIDAS) data, which revealed that only 4 percent of pedestrians struck were stationary.<sup>235</sup> Subaru recommended that NHTSA focus on the S4c test condition, showing FARS data from 2016–2020 that indicated 61% of pedestrians struck alongside a roadway were walking in the direction of traffic. Auto Innovators, Honda, GM, and BMW reasoned that S4b is redundant with S4a since the only difference is the direction of the pedestrian, but Auto Innovators and BMW went on to state, similar to Subaru, that S4a and S4b may both be eliminated since S4c scenarios are more common in the real world. MEMA, Bosch, and Toyota were in favor of including either S4a or S4b, but not both, with Bosch encouraging the Agency to harmonize with the corresponding PAEB test procedures used by Euro NCAP. NACTO did not offer support for specific in-path condition, but the group noted that it is important for PAEB systems to detect stationary pedestrians.

#### Removal of Select Test Conditions

IIHS took a different approach in its comments, stating that its consumer information program includes scenarios S1a, S1d, and S4c. S1d is a test scenario in which a child-sized pedestrian

<sup>233</sup> Carpenter, M.G., Moury, M.T., Skvarce, J.R., Struck, M. Zwicky, T.D., & Kiger, S.M. (2014, June), *Objective tests for forward looking pedestrian crash avoidance/mitigation systems: Final report* (Report No. DOT HS 812 040). Washington, DC: National Highway Traffic Safety Administration.

<sup>234</sup> ISO/CD 19237:2017.

<sup>235</sup> NHTSA–2021–0002–3847.

mannequin enters the roadway from the nearside behind parked vehicles with 50 percent overlap of the vehicle. IIHS recommended that NHTSA focus on expediting rulemaking efforts for AEB/PAEB, stating that model year 2021 vehicles examined by the group performed exceedingly well.<sup>236</sup> Should the Agency pursue PAEB rating in NCAP, the group suggested removal of the three tests that it currently conducts (S1a, S1d, and S4c) to reduce unnecessary test burden, indicating that any consumer confusion could be mitigated by explaining that the two programs are meant to be complementary.

#### False Positive Test Conditions (S1f and S1g)

Regarding false positive test conditions S1f and S1g, most commenters suggested that false positive tests should not be conducted in NCAP for PAEB. Bosch, Toyota, Honda, FCA, AAA, GM, Auto Innovators, BMW, and IIHS were not in favor of including S1f and S1g. Toyota submitted data to show that, due to tolerance overlap between the “off” and “on” conditions, there is a risk of leaving PAEB off when it should remain on. Bosch, Auto Innovators, Honda, and BMW echoed this sentiment. For instance, Bosch noted the unpredictability of pedestrians and suggested that it is safer for a vehicle to stop if there is a chance that the pedestrian will enter the vehicle’s path. Bosch suggested that NHTSA should be cautious not to incorporate scenarios that may prompt a vehicle to continue driving when a pedestrian may continue into the vehicle’s path, as this may erode consumer confidence and trust in PAEB systems. Similarly, AAA stated that automakers should not be “pressured to minimize false positives at the possible expense of reduced system efficacy.” Along these lines, FCA asserted that designing for S1f and S1g conditions may negatively affect tuning and calibration. IIHS and GM both noted that stakeholders could collect data on false activations by monitoring real-world field performance data. They claimed that this will be more useful since the test conditions outlined by the Agency will not address the full variety

<sup>236</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-4068>. “Of 186 systems on vehicles from 29 automakers that we examined in 2021, 46% were superior, 34% were advanced, 5% were basic, 1% received no credit, and 13% were not available with pedestrian detection. Of those rated advanced or superior, 68% were standard equipment rather than optional features. Systems receiving a superior rating can avoid or substantially reduce the impact speed in almost all, if not all, three scenarios.”

of situations in which false activations may occur in the field. They also noted that manufacturers have a vested interest in minimizing false positives to improve customer satisfaction.

Conversely, a few commenters were in favor of adding false positive test conditions S1f and S1g to the battery of NCAP PAEB tests. TRC noted that vehicles still brake during these false positive tests, and thus reasoned that manufacturers may continue to increase system robustness if included in NCAP. Rivian stated that false positive conditions should be included since these situations occur in the field and braking unnecessarily and on short notice can contribute to the rear-end crash problem. CAS cited concern for various groups of VRUs, such as children, compromised adults, and animals, in its support for false positive testing. Like Bosch (above), CAS mentioned that these VRUs may first stop at the edge of the roadway but then continue crossing or reverse direction. Unlike Bosch, however, CAS suggested that the Agency should conduct false positive testing to ensure PAEB systems include additional safety margins and provide adequate protection. Adasky stated that false positive results serve as an indication of a lack of system robustness and are therefore important to include. Aptiv also noted that fused sensor technology should minimize false positive activation. Intel was not opposed to the inclusion of scenarios S1f and S1g, but it also suggested that test parameters and criteria should be reviewed carefully. In Intel’s opinion, warnings or short braking intervals may be acceptable to the driver since the miss distance for the false positive scenarios is relatively small. The group noted that this especially holds true for cases where the SV speed is high and the pedestrian is crossing the path, as the driver may not be sure that there is enough time for the pedestrian to cross safely. Intel stated it would like to see the miss distance reviewed and road markings considered.

#### Overall Need for PAEB Testing in Darkness Lighting Conditions

Respondents from a variety of backgrounds approved of NHTSA’s decision to conduct PAEB testing in dark lighting conditions. Many suggested that PAEB testing in dark lighting conditions was critical given the real-world safety problem. Generally, commenters were concerned about the current effectiveness of PAEB systems, citing studies that showed PAEB systems do not work as well in low light as they do in daylight. These groups and individuals reasoned that

NHTSA must evaluate PAEB systems in dark conditions to encourage improvements in system performance.

Auto Innovators and HATCI requested more information from NHTSA regarding PAEB test procedures in dark lighting conditions and real-world nighttime crash conditions. Auto Innovators asked that NHTSA more clearly define nighttime parameters in its test procedure so that test repeatability could be guaranteed. Should NHTSA decide not to harmonize with Euro NCAP nighttime test procedures, HATCI reasoned that NHTSA should study U.S. areas prone to nighttime crash events to determine precise lux levels and other environmental conditions which might be representative of these high-incident areas. These specifications should then be incorporated into NCAP’s test procedures, increasing test repeatability. The automaker provided pedestrian-related crash data gathered from Ann Arbor, MI, including recorded lux measurements for areas with the highest pedestrian crash risk. Similarly, Advocates suggested that NHTSA evaluate real-world data to determine which kinds of crashes are occurring most frequently in low light and dark conditions. The group mentioned that this data could help inform testing practices and may also suggest that other technologies, including LDW/LKA and BSW/BSI, should be evaluated under nighttime conditions as well.

Two commenters, Toyota and Auto Innovators, asserted there was not a need for the Agency to conduct condition S1d runs at night. Both groups referred to an accident analysis that showed the percentage of pedestrian impacts with vehicle obstacles present is low and therefore suggested that NHTSA eliminate the nighttime assessment of this scenario.

#### Response to Comments and Agency Decisions

The Agency plans to adopt specific test conditions from the S1 and S4 test scenarios included in its 2019 PAEB test procedure for NCAP’s PAEB assessments. In particular, the Agency is adopting S1a, S1b, S1d, and S1e for crossing path conditions and S4a and S4c for in-path conditions. NHTSA will perform assessments for each of these test conditions in both daylight and darkness.

The Agency recognizes that this decision conflicts with IIHS’s request that NHTSA consider removal of select test conditions, notably S1a, S1d, and S4c, because they are performed by IIHS. While NHTSA suggests that consumers review all available,

reputable safety information to make purchasing decisions, the Agency's safety information program should be informative enough to stand alone. Since NHTSA cannot guarantee that any information currently available from other entities will remain available in the same capacity indefinitely, the Agency should not omit certain test conditions simply because comparable ratings information is currently provided by another consumer program. However, NHTSA has decided to omit a few of the test conditions it proposed in its RFC from NCAP's final PAEB test matrix based on comments received and recent Agency research.

### S1 Test Conditions

As noted earlier, in 12 percent of pedestrian crashes involving injuries and 42 percent of crashes involving pedestrian fatalities, a light vehicle is traveling straight while a pedestrian enters the vehicle's path from either the left or right side.<sup>237</sup> These real-world crashes can be represented by the S1 crossing path scenario. More specifically, the S1a–c test conditions involve an adult pedestrian walking into the roadway and into the SV's path from the right side. For each of these three S1 test conditions, S1a, S1b, and S1c, the pedestrian mannequin begins its crossing maneuver at different times prior to collision, thus resulting in 25, 50, and 75 percent overlap, respectively, with the vehicle's front end.

Several commenters suggested that NHTSA include the 25 and 75 percent overlap assessments only (*i.e.*, S1a and c, respectively). Euro NCAP assesses vehicles in these two test conditions, represented by their Car-to-Pedestrian Nearside Adult 25 percent (CPNA–25) and Car-to-Pedestrian Nearside Adult 75 percent (CPNA–75) conditions, and does not perform a CPNA test at 50 percent overlap. Commenters stated that the 25 and 75 percent overlap conditions sufficiently cover the 50 percent overlap condition, making the S1b assessment superfluous. However, this assertion was not found to be accurate in the Agency's model year 2021–2022 research testing. One vehicle contacted the pedestrian mannequin in the S1b test at 60 kph (37.3 mph) but did not contact the mannequin for any of the other test speeds included for either the S1a or S1c conditions during daylight testing. Thus, if the Agency had not conducted S1b for this vehicle, the

failure would not have been captured. Additionally, for a second vehicle, contact was observed at 50 kph (31.1 mph) in the S1b test conducted during daylight but was not observed until 60 kph (37.3 mph) in the S1a test. Similarly, during darkness testing with lower beam headlamps, three vehicles subjected to the S1b test condition contacted the pedestrian mannequin at 50 kph (31.1 mph), whereas contact was not observed for the S1a test condition until 60 kph (37.3 mph). Given these findings, it is beneficial to adopt the S1b test condition.

The Agency is also retaining the S1a condition from its proposal because doing so should ensure the system has an adequate operational field of view and is able to identify pedestrians that are not at the center of the travel path. In addition, this test condition was generally found to be more stringent, as several commenters suggested, with the only exceptions observed being the two vehicles previously mentioned for the S1b test. Although IIHS also performs tests that correspond to NHTSA's S1a test, adopting this test condition for NCAP would be advantageous at this time given the results observed during the Agency's model year 2021–2022 research testing. Specifically, only four of the twelve vehicles tested were able to avoid contacting the pedestrian mannequin for every test speed assessed for the S1a test condition in daylight. This number was reduced to two during darkness testing with lower beam headlamps, with performance degradation generally beginning around 40 kph (24.9 mph). While these results show this condition may be challenging for current PAEB systems, they also show that passing performance is practicable for all adopted test speeds.

Although NHTSA has decided to retain the S1a and S1b test conditions for NCAP PAEB testing, it does not plan to adopt the S1c test condition (*i.e.*, Euro NCAP's CPNA–75 test). Because of the larger amount of overlap at the point of impact (75 percent) for the S1c condition, the vehicle is afforded an increased amount of time for the PAEB system to sense and react to the crossing pedestrian. NHTSA's model year 2021–2022 research testing showed that vehicles which contacted the pedestrian mannequin in the S1c test condition also contacted the mannequin in either S1a or S1b at the same speed or at a lower speed for both daylight and darkness testing. Therefore, the Agency agrees with those commenters that stated that S1c is the least stringent of the S1a–c crossing path test conditions. The Agency also acknowledges Toyota's recommendation that it should seek to

reduce test burden in situations where it can remove a test condition and still ensure adequate performance across a range of conditions. Since system performance observed for the 75 percent overlap condition appears to be sufficiently addressed by the 25 percent and 50 percent overlap conditions, NCAP sees no need to also adopt the S1c test condition.

The Agency has also decided to adopt the S1d test condition, which was particularly challenging for vehicles in the Agency's recent testing series. Because the child mannequin emerges from behind an obstruction (parked vehicle along the SV's path), the SV's PAEB system has less time to detect and react to the pedestrian. No vehicle out of the 12 tested in the model year 2021–2022 test series achieved full avoidance for every test speed assessed for this test condition in either daylight or dark lighting condition. For daylight testing, four vehicles contacted the pedestrian mannequin in the first trial for the 60 kph (37.3 mph) test at a speed less than 50 percent of the initial speed (less than 30 kph, or 18.7 mph), but none demonstrated full avoidance in at least three of the four retries. However, three vehicles were able to repeatedly avoid contact up to and including 50 kph (31.1 mph). An additional vehicle contacted the pedestrian mannequin at 10 kph (6.1 mph) in daylight but avoided contacting again until the 60 kph (37.3 mph) test was conducted. Most often, for the other vehicles in the test series, performance degradation at higher speeds began occurring around 40 kph (24.9 mph) during the daylight runs. During darkness testing, no vehicle was able to achieve full avoidance for three or more trials at test speeds of 40 kph (24.9 mph) or greater. Five vehicles exhibited contact with the pedestrian mannequin at the lowest test speed of 10 kph (6.1 mph). For the remaining seven vehicles, four contacted the mannequin with speed reductions of less than 50 percent at an SV initial speed of 40 kph (24.9 mph), two models contacted at 30 kph (18.6 mph), and one model contacted at 20 kph (12.4 mph).

While subpar performance was observed for the S1d test condition, there is merit in including it in NCAP's final PAEB test matrix for both daylight and dark lighting conditions. Several commenters mentioned that the real-world occurrence rate of this condition is relatively low in comparison to some of the other adopted test conditions, particularly with respect to the darkness variant. However, NHTSA notes that because of the shorter daylight time in fall and winter, it is possible for

<sup>237</sup> Yanagisawa, M., Swanson, E., Azeredo, P., & Najm, W.G. (2017, April). *Estimation of potential safety benefits for pedestrian crash avoidance/mitigation systems* (Report No. DOT HS 812 400), Washington, DC: National Highway Traffic Safety Administration.

children to be walking after events, such as an evening soccer practice, in relatively dark lighting conditions. It is important to adopt the S1d condition for NCAP testing since it involves a child pedestrian and is one with which current vehicles especially struggle. NHTSA received a substantial number of comments in response to the RFC regarding child safety.

Finally, NHTSA will adopt the test scenario S1e, which represents an adult pedestrian running into the vehicle's path from the far, or left-hand, side. NHTSA received few comments regarding the applicability of this test condition. During the Agency's model year 2021–2022 daylight testing series, two vehicles achieved full crash avoidance at all test speeds in the S1e condition, and an additional two only contacted the pedestrian mannequin during the 60 kph (37.3 mph) test speed. Nearly the same observations were made for the Agency's lower beam headlamp darkness testing; two vehicle models avoided contact with the pedestrian mannequin at all assessed test speeds, and one additional model only contacted the mannequin at the 60 kph (37.3 mph) test speed. Several vehicles that only experienced contact at higher test speeds during the S1b condition (where the pedestrian mannequin approaches the test vehicle from the right side at 50 percent overlap) did not perform as well for S1e, when the pedestrian entered at a faster speed from the left-hand side with the same overlap at the point of impact (50 percent). This was true for both daylight and darkness testing with lower beams.

It is critical to assess PAEB performance when the pedestrian is crossing from the left side as well as from the right, and while both walking and jogging. As several vehicles were able to perform well when subjected to the S1e condition in daylight, and two vehicles were able to provide complete avoidance for all test speeds in darkness with lower beams, NHTSA will include the S1e condition in NCAP at this time.

#### S4 Test Conditions

NHTSA has decided to include scenarios S4a and S4c in NCAP's updated test matrix for both lighting variants. The in-path scenario, S4, which includes test conditions S4a, S4b, and S4c, represents a pedestrian standing alongside the roadway facing away from the vehicle (S4a) or towards the vehicle (S4b), or walking along with traffic away from the vehicle on the side of the roadway with a 25 percent overlap (S4c). Overall, the S4 scenario comprises 5 percent of pedestrian

crashes involving injuries and 19 percent of pedestrian fatalities.<sup>238</sup>

Regarding commenters' concerns surrounding redundancy between the proposed stationary mannequin conditions (*i.e.*, S4a and S4b), in its model year 2021–2022 research tests, NHTSA found that, when comparing daylight results for each vehicle, the S4a test condition, where the stationary mannequin was facing away from the SV, resulted in more frequent vehicle-to-pedestrian contact across the incremented test trials compared to the S4b test condition, where the stationary mannequin was facing toward the SV. This same trend was observed for the Agency's darkness testing. Given these findings, NHTSA agrees with commenters that adding both S4a and S4b test conditions is not necessary to achieve improved PAEB performance. Thus, the Agency has chosen not to adopt the seemingly less stringent test condition for the stationary mannequin, S4b, for NCAP to reduce testing burden.

While the Agency is removing one of the in-path stationary mannequin tests from NCAP's PAEB test matrix (*i.e.*, S4b), it will not remove both stationary mannequin conditions, as some commenters requested. The Agency agrees with NACTO that stationary pedestrians should be accounted for when conducting PAEB testing; consumers expect PAEB systems to operate regardless of the pedestrian's movement, or lack thereof. Testing using a stationary pedestrian may also help to mitigate crashes in which a law enforcement officer or other first responder is standing in the roadway. Based on the results of the Agency's model year 2021–2022 research testing, in-path assessments for both stationary and moving pedestrian mannequins are necessary to ensure robust PAEB system performance. When comparing daylight results from the S4a tests to those for S4c, five vehicles contacted the mannequin at the uppermost test speed (60 kph (37.3 mph)) when the pedestrian was stationary (S4a), but not when it was moving (S4c). Furthermore, four vehicle models contacted the mannequin at the lowest test speed (10 kph (6.2 mph)) for the moving mannequin test (S4c) but not for either stationary test (S4a or S4b). Similar findings were observed during the Agency's darkness testing. Results for the S4a stationary mannequin condition with lower beam headlamps showed

contact at 60 kph (37.3 mph) for three vehicles which was not similarly observed for the moving pedestrian condition. Furthermore, at 10 kph (6.2 mph), seven vehicles contacted the moving mannequin target during the S4c darkness tests but did not contact the stationary mannequin target at this same test speed in the S4a tests. In addition, five of these seven vehicles exhibited no reduction in speed. This is concerning because, as the Agency has mentioned previously, even low-speed pedestrian crashes can be fatal. Further, as Subaru and others suggested, recent FARS data shows that the S4c test condition is representative of a common, fatal real-world crash. This is unsurprising since the pedestrian is facing away from the vehicle in these crashes and therefore may be unaware that a vehicle is approaching; if the driver of the vehicle is inattentive, it is even more likely that the vehicle may collide with the pedestrian. These results show that at very low and high speeds, PAEB systems may have trouble properly classifying moving and stationary pedestrians, respectively. Therefore, both stationary and moving targets should be assessed in NCAP's PAEB tests in daylight and dark lighting conditions and will proceed with adopting the S4a and S4c test scenarios accordingly.

Although many vehicles exhibited contact at higher and/or lower speeds for the S4a and S4c test conditions, three vehicles offered complete crash avoidance for all test speeds, up to and including 60 kph (37.3 mph) for both conditions during the Agency's daylight assessments, thus showing that robust performance is practicable. Further, although no vehicles were able to completely avoid contact with the pedestrian mannequin for all test speeds during darkness testing for the NCAP-adopted S4a and S4c scenarios, one vehicle only contacted the pedestrian mannequin at 10 kph (6.2 mph) for both conditions (*i.e.*, S4a and S4c). In fact, of the 10 vehicles exhibiting contact at 10 kph (6.2 mph) in at least one of the two S4 test conditions in dark lighting being adopted, four avoided contacting the mannequin again completely during higher-speed tests in the scenario and three avoided contact until 60 kph (37.3 mph). These results demonstrate the achievability of future iterations of PAEB systems to fully avoid pedestrians for in-path stationary and moving pedestrian test conditions during assessments in both daylight and dark lighting conditions, making adoption of scenarios S4a and S4c in NCAP's

<sup>238</sup> Yanagisawa, M., Swanson, E., Azeredo, P., & Najm, W. G. (2017, April). *Estimation of potential safety benefits for pedestrian crash avoidance/mitigation systems* (Report No. DOT HS 812 400). Washington, DC: National Highway Traffic Safety Administration.



updated test matrix reasonable for both lighting variants.

#### False Positive Test Conditions (S1f and S1g)

Regarding the false positive test conditions S1f and S1g, the Agency will not adopt these test conditions for NCAP's PAEB testing at this time. Despite the risk of drivers disabling PAEB if too many unnecessary activations occur, comments received regarding NCAP's inclusion of false positive testing negatively affecting system efficacy is also of concern, especially given the inherently vulnerable nature of those outside the vehicle. Data submitted by Toyota demonstrated that there is a potential overlap in the S1b and S1f cases up to 0.8 seconds TTC. As a result, systems may either falsely activate when it is not appropriate, or they may not activate when it is necessary to do so. Fewer false positive activations should not come at the expense of increased false negatives. Further, pedestrian behavior can be unpredictable, as Bosch noted. If there is a reasonable chance that the pedestrian will enter the vehicle's path, the vehicle's PAEB system should be prepared to react accordingly. The Agency reasons, as Intel suggested, that drivers will accept false activations in cases where the miss distance is small, especially at higher vehicle speeds, since the driver may not be certain that the individual will indeed avoid the vehicle's path. Additionally, NHTSA agrees that manufacturers have an interest in maintaining customer satisfaction. The lack of false positive testing does not prevent a manufacturer from optimizing its designs and improving sensor technology and system robustness. Nevertheless, the Agency plans to monitor real-world performance data to ensure that nuisance activations do not become problematic, especially given the numerous situations that may occur in the field. As mentioned for AEB, vehicles that have excessive false positive activations may pose an unreasonable risk to safety and, as such, may be considered to have a safety-related defect.

The Agency acknowledges that its decision not to add false positive tests for PAEB is a departure from its treatment of false positive testing for AEB. NHTSA expects that a vehicle should encounter near-miss pedestrians relatively less frequently than it encounters near-miss situations with other vehicles. Therefore, a deficient PAEB system design should produce fewer unnecessary activations than a deficient AEB system. However, it is the

Agency's intent to periodically revisit its review of the crash problem and adjust scenarios and test conditions accordingly, not only for false positive testing and PAEB assessments but for all ADAS testing.

#### Need for PAEB Assessments in Daylight and Dark Lighting Conditions

Given the significant safety need described earlier in this notice, the proven feasibility of conducting PAEB testing in dark lighting conditions, and the ability for current systems to meet requirements, assessments in both daylight and dark lighting conditions are suitable for the adopted NCAP PAEB test conditions.

For the adopted S1 crossing path test conditions (*i.e.*, S1a, S1b, S1d, and S1e), one vehicle in the Agency's model year 2021–2022 research testing was able to achieve full crash avoidance from 10 kph to 60 kph (6.2 mph to 37.3 mph) in all but one test condition, S1d, during testing in both daylight and dark lighting conditions using the vehicle's lower beam headlamps. For the S1d dark lighting test condition, the vehicle afforded full crash avoidance up to and including 30 kph (18.6 mph). Additionally, although eight of the 12 vehicles contacted the pedestrian mannequin in each of the four crossing path conditions being adopted for NCAP's assessments in dark lighting conditions, three of these eight were able to achieve full avoidance in at least one crossing path test condition during daylight testing. These results show that excellent PAEB response in S1 dark lighting test conditions can be achieved, like those observed for testing in daylight, but for many vehicle models, there are further gains to be made specifically for PAEB performance under dark lighting conditions.

For the adopted S4 in-path conditions and test speeds (*i.e.*, S4a and S4c), five of the 12 models were able to fully avoid the mannequin target during daylight testing for at least one in-path condition; three of these five afforded full crash avoidance for both S4a and S4c test conditions. While none of the vehicles achieved full crash avoidance in either of the two adopted in-path test conditions during testing in the dark lighting condition using the vehicle's lower beam headlamps, many performed well between 20 kph and 50 kph (12.4 mph and 31.1 mph) for both S4 test conditions. Furthermore, although eight out of 12 vehicle models failed to avoid the pedestrian mannequin in the S4c test condition at 10 kph (6.2 mph) in the dark lighting condition (with lower beam headlamps), only five of these same models failed

this test condition variant during the corresponding tests in daylight. These results suggest that robust performance is achievable in both daylight and darkness assessments for the selected in-path test conditions; however, performance in one lighting condition does not necessarily translate to the other lighting condition.

While the Agency acknowledges that its model year 2021–2022 PAEB testing demonstrated that current systems provided wide-ranging system capabilities during darkness testing for the adopted test conditions, it sees no reason to reduce the test matrix for testing in dark lighting condition, other than for the speed maximum speed to be assessed for the S1d condition, as will be discussed in the next section. NHTSA's research test results suggest that installation of improved sensing capabilities should allow for improved nighttime PAEB performance that more closely mirrors the performance observed during daylight. Further, the Agency reasons there is no reason to conduct only testing in darkness and forgo testing in daylight. As mentioned earlier, a significant number of pedestrian crashes occur in both lighting conditions. As such, the Agency must ensure system changes made to improve performance in darkness do not affect performance in daylight, and vice versa. In addition, because of the vast differences in current PAEB system capabilities, it is most reasonable to offer PAEB credit for performance in daylight separate from that of performance in darkness. By proceeding in this manner, the Agency expects it can more quickly award partial PAEB credit to current systems that may require relatively minor changes (*i.e.*, to software) to perform successfully for all test variants in daylight.

#### 2. Test Speeds

Like its plan for AEB, NHTSA proposed to assess PAEB system performance over a range of test speeds for each of the test scenarios considered for inclusion. Specifically, NHTSA proposed to increase the SV test speed in 10 kph (6.2 mph) increments from a minimum test speed of 10 kph (6.2 mph) to a maximum test speed of 60 kph (37.3 mph) for each test condition, performing one trial per speed. To achieve a passing result for each speed, the Agency stipulated that the test trial must be valid (all test specifications and tolerances satisfied), and the SV must not contact the pedestrian mannequin. As will be discussed later, similar to its research testing of model year 2021 and 2022 vehicles, the Agency further suggested that it would conduct up to

four additional trials for any specific test speed that resulted in a test failure (*i.e.*, contact) as long as the SV had a relative velocity at impact equal to or less than 50 percent of the initial SV test speed. In such instances, NHTSA proposed that the SV must not contact the pedestrian mannequin for at least three out of the five total trials conducted to pass the test condition (*i.e.*, combination of test scenario and test speed).

The Agency believed it was appropriate to increase the maximum SV test speed from the 40 kph (24.9 mph) specified in its 2019 PAEB test procedure to 60 kph (37.3 mph) for all PAEB test conditions proposed for inclusion in NCAP for several reasons. First, as detailed in the real-world data section earlier, NHTSA reasoned that adopting a higher maximum PAEB test speed was necessary to drive improved PAEB system performance and address a larger portion of real world injuries and fatalities.<sup>239</sup> Second, the Agency found that performing PAEB testing at 60 kph (37.3 mph) was reasonable, as NHTSA's model year 2019–2020 (and subsequent model year 2021–2022) research testing showed that robust PAEB system performance across various test conditions was achievable at this higher test speed. Further, Euro NCAP prescribes a maximum vehicle speed of 60 kph (37.3 mph) in its PAEB testing for test conditions similar or identical to those proposed; in particular, S1a, S1c, S1d, S1e and S4c. Harmonizing test speeds with Euro NCAP should reduce manufacturer burden while also fulfilling mandates stipulated in the Bipartisan Infrastructure Law, which requires that the Agency take steps to harmonize with existing consumer information rating programs where possible and when appropriate.

The Agency's reasons for proposing the minimum test speed of 10 kph (6.2 mph) for the planned PAEB test conditions were similar to those used to

justify the proposed maximum test speed: harmonization and real-world relevance. Although the minimum test speed proposed is lower than the minimum speed prescribed in NHTSA's 2019 PAEB test procedure and in its characterization testing (*i.e.*, 16 kph (9.9 mph)), the Agency noted that it aligns with the minimum test speed specified in Euro NCAP's pedestrian tests, except for Euro NCAP's Car-to-Pedestrian Longitudinal Adult (CPLA) scenario. The minimum vehicle test speed for the CPLA scenario, which is similar to the Agency's PAEB S4c test condition, is 20 kph (12.4 mph). NHTSA also believed that reducing the minimum test speed to 10 kph (6.2 mph) would ensure PAEB system functionality for very low speed crashes that may still cause injuries. Such injuries incurred from low-speed pedestrian collisions often result from secondary impacts with the ground.

NHTSA also proposed to adopt Euro NCAP's approach to assessing vehicles' PAEB system performance by incrementally increasing the SV speed from the minimum test speed for a given scenario to the maximum. The Agency reasoned that such an approach would (1) harmonize with other consumer information programs on vehicle safety, (2) address comments received in response to NHTSA's December 2015 notice to expand the applicability of PAEB tests to include a broader range of test speeds, thus addressing a broader range of crash speeds driving pedestrian injuries and fatalities, and (3) ensure future PAEB systems effectively manage the inherent trade-off between a wider field-of-view needed for lower speed impacts and a narrower field-of-view necessary for distance detection in higher speed crashes. The Agency proposed 10 kph (6.2 mph) increments for the test speed progression.

The Agency sought comment on whether the proposed speeds and overall assessment approach were appropriate or whether alternatives should be considered.

#### Summary of Comments

Many commenters agreed with the Agency's plan to set lower and upper bounds for SV test speed in PAEB testing to 10 kph (6.2 mph) and 60 kph (37.3 mph), respectively. Toyota, Advocates, MEMA, NYC DOT/ NYC DCAS Vision Zero Task Force, IDIADA, AAA, ASC, FCA, Rivian, Uhnder, BMW, Intel, HATCI, and ZF Group stated that this range of speed was appropriate. Some of those in favor mentioned that this speed range is representative of urban driving conditions to which pedestrians are typically exposed (roads with speed limits of 35 mph or less)

(NYC DOT/ NYC DCAS Vision Zero Task Force, IDIADA, ASC, Uhnder, and Intel). Others (FCA and Rivian) noted that this speed range would lessen the testing burden for manufacturers because it aligns with Euro NCAP's PAEB speed range. Advocates, AAA, and Rivian cited the need to ensure that the technology works across a spectrum of vehicle speeds to address both lower- and higher-speed pre-impact scenarios, but Advocates added that NHTSA should continue to evaluate whether the proposed speed ranges will be adequate to protect all VRUs.

Although Toyota agreed with the test speed range proposed by the Agency, it noted that physical intervention at higher speeds may interfere with a driver's ability to intentionally maneuver to avoid the collision since the vehicle must begin braking earlier. In addition, Toyota suggested that if there is a test speed (or subgroup of speeds) at which system performance is most representative of the entire speed spectrum, testing at that speed would be the most preferable solution as it would be the most efficient method to disseminate information to the public. Auto Innovators and GM also remarked that tests with SV speeds higher than 60 kph (37.3 mph) are more likely to damage test equipment. State Farm was generally supportive of higher vehicle speeds and conditions representative of real-world cases.

#### Minimum Test Speed Changes

A few commenters disagreed with the lower boundary of NHTSA's proposed speed range. GM requested that the Agency begin testing PAEB S1 and S4 scenarios at 20 kph (12.4 mph). The automaker noted that the speed range of 20 kph (12.4 mph) to 60 kph (37.3 mph) is supported by other global consumer metrics and is referenced in a NHTSA-supported project.<sup>240</sup> Auto Innovators and Honda requested that NHTSA allow vehicle manufacturers to select the minimum speed for PAEB testing, reasoning that modern AEB sensors are designed to prioritize functionality at higher, more injurious speeds. Since the speed differential between the SV and the pedestrian is lower at lower speeds, the pedestrian enters the AEB sensor field-of-view at a wider angle than at higher speeds. IDIADA also echoed this sentiment. Both groups noted that Euro NCAP and Japan New Car Assessment

<sup>239</sup> The Agency hesitated to draw conclusions based solely on the travel speed data due to its significant limitations. The travel speed was either not reported or was unknown in 59 percent of fatal pedestrian crashes and 72 percent of pedestrian crashes that resulted in injuries. That being said, this data did show similar trends to that observed for posted speeds. For crashes that occurred on roadways where the travel speed was known, 14 percent of pedestrian fatalities and 70 percent of pedestrian injuries were reported for travel speeds of 40.2 kph (25 mph) and less, whereas 36 percent of fatalities and 85 percent of injuries occurred for travel speeds of 60 kph (37.3 mph) and less. Like the posted speed data, the known travel speed data, although limited, also showed that adopting the higher maximum test speed of 60 kph (37.3 mph) would allow the Agency to capture additional fatalities and injuries, 21 percent and 15 percent, respectively.

<sup>240</sup> Carpenter, M.G., Moury, M.T., Skvarce, J.R., Struck, M., Zwicky, T.D., & Kiger, S.M. (2014, June). *Objective tests for forward looking pedestrian crash avoidance/mitigation systems: Final report* (Report No. DOT HS 812 040). Washington, DC: National Highway Traffic Safety Administration.

Program (JNCAP) allows manufacturers to select the minimum speed.

#### Maximum Test Speed Changes

The upper speed range was also questioned by several commenters. Vision Zero Network, NTSB, CAS, League of American Bicyclists, and a number of individuals commented that they would like the Agency to run PAEB testing at speeds higher than 60 kph (37.3 mph). NTSB disagreed with NHTSA regarding its logic for selecting the upper test speed, stating that test specifications should not be based on current system capabilities but instead should drive systems toward ideal performance. CAS suggested that NHTSA determine the upper limits for each model's PAEB system to discourage designing to the test and to allow consumers to identify vehicles with superior performance. Vision Zero Network cited an IIHS study which found that PAEB is not efficient in areas with speed limits of 80.5 kph (50 mph) or greater. The League of American Bicyclists did not provide a preferred upper speed limit; however, the advocacy group did provide pedestrian fatality data to support upper speeds anywhere from 56.3 kph (35 mph) to 88.5 kph (55 mph). Advocates, while supporting the speed range overall, also suggested that NHTSA evaluate whether the upper test speed limit is sufficient to capture the full range of real-world incidents. ZF Group supported increasing the test speed for test scenario S4c up to 80 kph (49.7 mph), as it could evaluate system capability in a pre-crash scenario involving a pedestrian walking along a rural road or highway with a higher speed limit. Comments from individuals were mostly in favor of increasing the speed range to anywhere from 64.3 kph (40 mph) to 120.7 kph (75 mph).

#### Incremental Speed Changes

Regarding speed intervals between the minimum and the maximum, some (HATCI, ZF Group, and one individual) specifically offered support for 10 kph (6.2 mph) speed intervals. ASC recommended that NHTSA use three test speeds to evaluate the range of performance more efficiently: 10 kph (6.2 mph), 35 kph (21.7 mph), and 60 kph (37.3 mph). Adasky suggested that NHTSA drop to three test speed increments instead of six to allow resources to test a wider range of scenarios.

#### Response to Comments and Agency Decisions

NHTSA will begin testing for each of the adopted PAEB test conditions at a

minimum SV speed threshold of 10 kph (6.2 mph) and will increase the SV speed in 10 kph (6.2 mph) increments until a maximum speed threshold is reached, as long as the test vehicle does not make contact with the pedestrian mannequin during each progressive speed tested. For test conditions S1a, S1b, S1e, S4a, and S4c, the Agency is adopting a maximum SV speed threshold of 60 kph (37.3 mph) for both daylight and dark testing. For test condition S1d, the Agency is adopting a maximum SV speed threshold of 60 kph (37.3 mph) for daylight testing and 40 kph (24.9 mph) for dark testing. Travel speeds adopted for the pedestrian mannequins align with those proposed—5 kph (3.1 mph) for the walking adult test conditions (S1a, S1b, and S4c) and the running child test condition (S1d), 8 kph (4.9 mph) for the running adult test condition (S1e), and 0 kph (0 mph) for the standing adult test condition (S4a). Should vehicle-to-mannequin contact occur at any speed, the test laboratory will discontinue the PAEB test series for the relevant lighting condition.

Citing real-world relevance, testing feasibility, and reduced test burden due to harmonization, commenters generally favored the lower speed threshold (*i.e.*, 10 kph (6.2 mph)) proposed by NHTSA. A few commenters, however, requested that NHTSA adopt an alternative minimum speed threshold, either one dictated by vehicle manufacturers' preference or 20 kph (12.4 mph) to align with other consumer testing programs. NHTSA reasons it is inappropriate to allow vehicle manufacturers to select the minimum speed for testing simply because some vehicles may currently prioritize functionality at higher, more injurious speeds, as Honda and Auto Innovators asserted. A vehicle striking a pedestrian at low speeds, such as 10 kph (6.2 mph), can still result in serious injuries or a fatality. Also, the minimum PAEB test speed of 10 kph (6.2 mph) is acceptable for NCAP's test matrix because it aligns with the lower-most test speed utilized by Euro NCAP for its CPNA, CPNCO, and CPFA tests, which are comparable to the Agency's S1a and S1c, S1d, and S1e tests, respectively.<sup>241</sup> Adopting a minimum speed threshold of 10 kph (6.2 mph) allows the Agency to best achieve its goal to pursue harmonization, where reasonable, to reduce manufacturer burden and better fulfill the BIL's mandate that NHTSA consider the benefits of consistency

<sup>241</sup> Euro NCAP prescribes a 20 kph (12.4 mph) lower speed threshold for its CPLA scenario, which is comparable to NHTSA's S4c test.

with other U.S. and international rating systems.

The Agency is also selecting 10 kph (6.2 mph) as the minimum speed threshold because system performance at speeds below 10 kph (6.2 mph) does not appear to be practical at this time. The Agency's recent research testing for model year 2021 and 2022 vehicles showed that many vehicles were unable to prevent contact with the SV at 10 kph (6.2 mph), even though these same models achieved acceptable performance at incrementally higher test speeds (*i.e.*, 20, 30, 40 kph (12.4, 18.6, 24.9 mph), etc.). This was observed for each of the various test conditions and lighting specifications.

NHTSA is establishing a maximum speed threshold of 60 kph (37.3 mph), as proposed, for nearly all of the test conditions adopted herein, with the exception of S1d testing conducted in darkness. A 60 kph (37.3 mph) upper speed limit is generally appropriate for several reasons. Adopting this speed for the upper limit of the test speed range would permit safe test conduct and repeatability, as the pedestrian surrogates the Agency plans to use for testing allow impact speeds of 60 kph (37.3 mph). As mentioned above, a 60 kph (37.3 mph) SV speed is also consistent with that prescribed in Euro NCAP's AEB/LSS VRU systems test protocol for the comparable AEB test conditions (*i.e.*, CPFA, CPNA, CPNCO, and CPLA).<sup>242</sup> In addition, adopting a 60 kph (37.3 mph) upper limit for the SV speed range allows the Agency to mitigate a large portion of the safety problem involving pedestrians. Recall that nearly 40 percent of all pedestrian fatalities and approximately three out of four pedestrian injuries occur in areas where the posted speed limit is 60 kph (37.3 mph) or lower.<sup>243</sup>

A 60 kph (37.3 mph) maximum speed threshold has also proven practical for most of the PAEB test condition variants. The Agency's recent model year 2021–2022 research testing showed that while PAEB performance was generally inconsistent across the tested fleet, particularly for higher test speeds and dark conditions, at least one vehicle was able to completely avoid contacting the pedestrian mannequin at all test speeds from 10 kph (6.2 mph) up to and including 50 kph (31.1 mph) and exhibited a speed reduction greater than 50 percent at 60 kph (37.3 mph) for all but one of the adopted test condition

<sup>242</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB/LSS VRU systems, Version 4.5*.

<sup>243</sup> See "Linking Proposed PAEB Test Scenarios with Real-World Crashes" section of this notice.

variants, S1d in darkness. For the S1d dark lighting variant, four vehicles were able to prevent contact with the test vehicle at all test speeds from the minimum test speed of 10 kph (6.2 mph) up to and including 30 kph (18.6 mph); however, when tested in darkness at 40 kph (24.9 mph), only two of these four vehicle models offered a speed reduction greater than 50 percent. As such, the next incremental test speed, 50 kph (31.1 mph), was not assessed to prevent damage to the test vehicle and equipment.

Given these findings, a 60 kph (37.3 mph) upper speed limit is practical for current NCAP evaluation for all test condition variants except for the S1d darkness variant. By adopting 60 kph (37.3 mph) for the upper bound of the SV speed range, the Agency reasons it will mitigate as much of the safety problem as possible while not compromising test repeatability and safe test conduct. While NHTSA acknowledges that no one vehicle was able to provide complete crash avoidance for each of the test variants adopted herein, test vehicles' aggregate performance for available production PAEB systems is not indicative of shortcomings in the overall capability of PAEB technology. Instead, current systems are simply designed to meet a lower level of performance. It is noteworthy that IIHS's analogous testing for the S1d condition, the perpendicular child scenario, is currently conducted at 20 kph and 40 kph (12.4 mph and 24.9 mph), whereas the Agency is adopting test speeds for daylight testing ranging from 10 to 60 kph (6.2 to 37.3 mph) for this test condition.<sup>244</sup> As such, the Agency reasons further improvements in PAEB system performance are possible as manufacturers optimize perception system hardware and software to meet the requirements stated in this notice. NHTSA observed a similar trend with the deployment of AEB technology approximately six years ago, when performance was inconsistent in NCAP for its AEB scenarios. AEB systems failed to meet all performance levels established for NCAP at that time, but AEB performance quickly improved as manufacturers updated and improved system software.

For the S1d darkness variant, it is appropriate to adopt an upper speed threshold of 40 kph (24.9 mph) at this time. While no vehicle was able to prevent contact with the pedestrian mannequin for this test variant during NHTSA's recent research testing at this

test speed, two vehicle models provided a significant speed reduction (*i.e.*, a speed reduction greater than 50 percent of the initial SV speed). Furthermore, the Agency recognizes, as mentioned earlier, that this test condition is performed by Euro NCAP at 60 kph (37.3 mph) at night, albeit with overhead lights in addition to the vehicle's lower beam headlamps. Therefore, it is practical, given minor software changes to improve system performance, for future iterations of existing systems to prevent contact with the pedestrian mannequin at a 40 kph (24.9 mph) test speed during S1d assessments in dark lighting conditions that utilize only vehicles' lower beam headlamps. As systems exhibit improved performance during testing, the Agency may then consider increasing the upper test speed for this test variant as part of future updates to the program.

NHTSA acknowledges that there were a fair number of commenters who asserted that it should perform PAEB testing at speeds exceeding 60 kph (37.3 mph) (*i.e.*, at speeds ranging from 80 kph (49.7 mph) to 120.7 kph (75 mph)). These commenters cited the ineffectiveness of current PAEB systems at higher speeds as well as pedestrian injury and fatality data that shows a safety need to curtail pedestrian-involved crashes at speeds exceeding the upper limit proposed by NHTSA. As mentioned, NTSB and CAS also encouraged NHTSA not to limit assessments to lower maximum speed thresholds dictated by current (NTSB) or average (CAS) system capabilities. Instead, these commenters suggested that NHTSA set upper test speed limits to drive system capabilities to meet ideal performance expectations or to identify superior performing systems.

While there is merit to these suggestions and underlying rationale, NHTSA reasons that, given other decisions it is making to increase the stringency of its proposal, adopting a maximum speed of 60 kph (37.3 mph) for the selected PAEB test scenarios is appropriate at this time. As detailed later, NHTSA has decided to implement a testing approach that requires (1) no contact with the pedestrian mannequin to prevent real-world injuries and (2) no repeated trials at a given test speed to ensure system robustness. Furthermore, a vehicle will not receive credit for passing NHTSA's PAEB test protocol unless it is able to meet these performance requirements for all test speeds across all test conditions for a given lighting condition. As evidenced in NHTSA's recent research testing, few PAEB systems were able to meet these

requirements; therefore, it is expected that many may not receive PAEB credit for several years after the program changes take effect. Yet, it is important that NCAP provides consumers with useful information to guide their purchasing decisions. Steps taken to further increase the stringency of PAEB testing at this time will likely thwart this goal. Furthermore, the Agency should assess the implications of the anticipated changes on overall fleet performance to limit the effect of any unintended consequences before adopting more rigorous requirements. For instance, as Toyota noted, system intervention at high speeds may impede the driver's response to an impending collision. In addition, the Agency recognizes that, given PAEB system capabilities for the current vehicle fleet, increasing test stringency too quickly may spur an increase in false positives and thus consumer dissatisfaction. NHTSA expects that future system designs may include the use of long range lidar or other technology, which should improve overall system performance. As the state of technology advances, the Agency may consider raising the maximum test speed for one or more of the PAEB test condition variants (*e.g.*, S4c in darkness) as part of future program enhancements upon conducting additional research to assess test feasibility, system advancements, and re-evaluation of the safety problem.

The Agency also recognizes it is not feasible to proceed as Toyota suggested and select one test speed (or a subgroup of speeds, which other respondents also suggested) that would be most representative of system performance. While these alternative approaches may improve testing efficiency in one regard, since fewer runs would be required, they may also hinder it in another. If the Agency were to select one "representative" speed for testing, it would choose the highest speed since it would generally be expected to be the most stringent and the one most likely to discern system performance for more injurious and fatal pedestrian crashes. However, evaluating system performance at only the highest test speed instead of at an incremental progression of speeds places both test equipment and the SV at greater risk for damage. Damage to test equipment or test vehicles not only introduces costly repairs but also delays testing. On the other hand, incrementally increasing speeds should often, though not always, reveal performance degeneration at more moderate speeds, thus limiting overall risk during testing and improving test efficiency. NHTSA also

<sup>244</sup> Insurance Institute for Highway Safety (IIHS) (January 2024), *Pedestrian Autonomous Emergency Braking Test Protocol, Version IV*.

reasons that conducting several additional runs for each test condition will have little impact on overall test efficiency or burden and seems inconsequential when considering the benefits ensuing from ensuring system robustness. An incremental testing approach should adequately ensure that PAEB systems which receive NCAP credit for passing requirements offer equivalent performance (*i.e.*, no contact) across a range of speeds, as several commenters suggested. This is particularly important since pedestrians, who lack inherent protection from an impacting vehicle, may incur injuries and fatalities even at low vehicle speeds. However, NHTSA's latest research testing showed that not all PAEB systems that provide passing performance at higher speeds also perform well at lower speeds. As mentioned, some vehicles' systems failed to activate at speeds of 10 kph (6.2 mph) but prevented SV-to-pedestrian mannequin contact at many higher test speeds, including the highest test speed assessed for a particular condition. The Agency also asserts that an incremental testing approach is appropriate for NCAP's PAEB assessments because it aligns with that adopted for the program's AEB tests and the testing methodology employed by Euro NCAP for its comparable VRU testing. Notwithstanding, NHTSA may also consider a reduction in the number of speed increments in the future, as Adasky suggested, if it looks to add test scenarios or conditions to the PAEB test matrix and fleet performance for PAEB systems has generally improved.

As the Agency did not receive comments on the proposed walking and running speeds of the pedestrian mannequins stipulated for each test condition, it will adopt the speeds proposed. For the walking adult test conditions (S1a, S1b, and S4c) and the running child test condition (S1d), NHTSA is adopting a pedestrian mannequin speed of 5 kph (3.1 mph). For the running adult test condition (S1e), the pedestrian mannequin speed will be 8 kph (4.9 mph), and for the standing adult test condition (S4a), the pedestrian mannequin will be stationary (*i.e.*, 0 kph (0 mph)). These speeds are consistent with those used in NHTSA's PAEB characterization study, the 2019 draft NHTSA PAEB test procedures, and Euro NCAP's AEB/LSS VRU systems test protocol for the comparable test conditions.<sup>245</sup> They were also determined to be appropriate for PAEB

testing based on research conducted by Directorate-General for Research and Innovation and published in 2014.<sup>246</sup>

### 3. PAEB Testing in Darkness—With Lower Beams and Use of Advanced Lighting Systems; With Upper Beams, in Lieu of or in Addition to Lower Beams, and With Overhead Lights; Other Technologies To Evaluate in Dark Lighting Conditions

To evaluate PAEB performance in darkness, NHTSA planned to perform all proposed scenarios with the lower beam headlamps as the only source of illumination. However, if the vehicle is equipped with advanced lighting features, such as semiautomatic headlamp beam switching, adaptive driving beam (ADB), and/or high beam assist (HBA) headlighting systems, the Agency noted that these features would be engaged to function during the test as well. NHTSA requested comment on whether such a testing approach (*i.e.*, a lower beam assessment that only allows automatic engagement of advanced lighting systems) was appropriate or whether it should additionally, or alternatively, consider testing in darkness that would allow manual activation of a vehicle's upper beams. In seeking comment on upper beam headlamp assessments, NHTSA noted that it is not guaranteed that upper beam headlamps will be used during real-world nighttime driving since the driver may need to manually activate them.

NHTSA also asked whether it should utilize a secondary overhead lighting source, such as overhead streetlights, during PAEB testing. Overhead lighting is common in urban and suburban areas but scarcer along rural roads and highways. NHTSA notes that Euro NCAP's nighttime PAEB protocol specifies the use of overhead lighting for scenarios CPNA–25, CPNA–75, CPNCO–50, and CPFA–50 (which are similar to U.S. NCAP's S1a, S1c, S1d, and S1e, respectively) with the SV's lower beams activated. Euro NCAP's nighttime in-path scenario, the CPLA scenario (25 and 50 percent overlaps), which is similar to U.S. NCAP's S4c test, is performed with no overhead lighting and with the SV's upper beams engaged. As previously mentioned, NHTSA performed limited PAEB testing in darkness using lower beam headlamps and overhead streetlights, and the resulting data indicated only a slight improvement in PAEB system performance with overhead lighting compared to no overhead lighting.

In devising its proposal, NHTSA reasoned that testing with the SV's lower beams engaged without overhead lights represents the presumed worst-case, real-world scenario, particularly at higher test speeds. Conditions such as these represented 36 percent of pedestrian fatalities, with 39 percent of fatalities in pedestrian crashes associated with low light conditions with overhead lights per FARS data from 2011–2015.<sup>247</sup> The Agency reasoned that PAEB systems that meet the performance test specifications under dark lighting conditions with no overhead lights are likely to meet the performance specifications under dark lighting conditions with overhead lights, effectively addressing both conditions. NHTSA believed that assessing vehicles in the proposed manner (*i.e.*, under dark conditions with no overhead lights and with the vehicle's lower beams) would encourage vehicle manufacturers to make design improvements to address a significant portion of crashes that currently result in pedestrian fatalities.

Beyond its current and proposed procedures, the Agency also sought further comment on (1) other technologies in development which may mitigate the significant nighttime pedestrian crash problem and (2) information available for evaluation under dark lighting conditions.

### Summary of Comments

#### Use of High Beam, Low Beam, and/or ADB/Advanced Lighting Features

Some respondents favored testing vehicles in dark lighting conditions utilizing lower beams only (*i.e.*, with no advanced lighting system enabled), regardless of the scenario. Lidar Coalition, Velodyne, NYC DOT/NYC DCAS, Aptiv, and one individual suggested that the theoretical worst-case scenario would be the one with the least illumination. Lidar Coalition stated that this test procedure specification was “critical” because each technology used for detecting pedestrians has its own advantages and limitations. The group said that these procedures would drive the need for updated sensor types that achieve good performance across all driving conditions, particularly ones in which the human eye fails to identify a pedestrian. Velodyne provided data to support the Agency's accounting for scenarios where current systems

<sup>245</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB/LSS VRU systems, Version 4.5*.

<sup>246</sup> <https://cordis.europa.eu/docs/results/285/285106/final1-aspecss-publishable-final-report-2014-10-14-final.pdf> at pg. 19.

<sup>247</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W. G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745). Washington, DC: National Highway Traffic Safety Administration.

underperform; the Governor's Highway Safety Association (GHSA) found that 75 percent of pedestrian fatalities occur at night. NYC DOT/ NYC DCAS noted that in NHTSA's testing, vehicles were repeatedly able to avoid crashing into the pedestrian mannequin while utilizing only the vehicle's lower beams, indicating that it is possible to achieve this level of performance. Aptiv suggested that vehicles should not be tested with any advanced lighting features enabled because they can be disabled by the consumer. In light of this, the commenter deduced that vehicles would be evaluated on a level playing field if no advanced lighting systems are enabled. One commenter, Vayyar, suggested that NHTSA run a test with no headlamp illumination at all, stating this will allow NHTSA to evaluate how well PAEB sensors work in total darkness.

There were also commenters, however, that recommended testing vehicles using the vehicle's lower beams along with advanced lighting systems in certain instances. Some reasoned that advanced lighting systems should only be used when they are enabled by default or enabled at key-on. CAS, Advocates, Tesla, AAA, Uhnder, Adasky, and IDIADA suggested this approach as a possibility. HATCI mentioned that vehicles should be tested in their default configurations during ADAS testing and that advanced lighting systems should be enabled during PAEB testing under dark lighting conditions. However, the automaker did not specifically state that advanced lighting systems must be on by default to be included in the test protocol. CAS, Uhnder, and Adasky stated that advanced lighting systems should be enabled only if they cannot be disabled by the user. They reasoned that it is important to evaluate the worst-case scenario, which in their opinion is use of lower beams with the adaptive driving beam/advanced lighting features disabled, where possible. Uhnder added that drivers often turn off advanced features when they can and that drivers often do not utilize upper beams appropriately while driving. ZF Group also shared this assertion.

Many commenters stated that advanced lighting systems should always be enabled, regardless of whether they are standard or automatically enabled by default. Advocates, Intel, FCA, BMW, Honda, Toyota, ASC, Rivian, Bosch, Subaru, Auto Innovators, The League, Vayyar, ZF Group, GM, and several individuals supported the use of advanced lighting systems during PAEB testing in dark conditions. BMW suggested that

separate tests should be conducted with lower beams and with the advanced lighting systems enabled, adding that NHTSA should weight one over the other. Alternatively, BMW stated that only testing with advanced lighting systems for those vehicles equipped could lower the testing burden. Honda noted that advanced lighting systems are meant to work with PAEB systems at night and should be enabled to capture the system's intended performance. Rivian echoed Honda's sentiment. Subaru and Auto Innovators pointed out that ADB is not required to function below 32.2 kph (20 mph), so tests should begin at this speed.

Advocates, Tesla, Toyota, Bosch, Subaru, Auto Innovators, The League, and GM stated that manufacturers may be encouraged to include advanced lighting systems in their vehicles if they are able to be used during PAEB testing in dark lighting conditions. Subaru suggested that NHTSA offer extra credit for vehicles equipped with advanced lighting capabilities. IIHS and one individual requested that NHTSA focus on adding an advanced lighting requirement to all new vehicles, citing safety benefits.

For vehicles not equipped with ADB, HBA, or other advanced lighting technologies, Honda, Rivian, Subaru, FCA, and The League expressed that NHTSA should assess at least some scenarios with the SV's high beams manually activated. Rivian specified that high beams should only be engaged in dark driving conditions as it is unlikely that an SV would be traveling in an area without ambient lighting or oncoming vehicles with lower beam headlamps only. The League and Subaru agreed with this reasoning. Subaru also mentioned that high beam usage more closely compares to HBA or ADB activation. FCA suggested that a vehicle's upper beams should be used in scenario S4 testing to lessen test burden. A few respondents noted that tests should be run both with lower and upper beams, with IIHS, CAS, and a few individuals favoring this strategy. However, CAS clarified that only the worst-case, lowest-illumination results should factor into capability ratings. IIHS stated it plans to give higher weight to high beam results in vehicles with HBA capability for tests in which the speed is over the threshold for activating HBA. Intel stated that vehicles should achieve partial credit if they pass with manual high beam engagement, thus motivating manufacturers to include advanced lighting features in their vehicles. ASC did not support the use of any manually-activated high beams, and

AAA requested additional data to show that drivers use high beam lighting frequently before allowing manual high beam activation.

NHTSA also received comments regarding headlighting features, specifically advanced headlighting systems. GM stated that there is an opportunity for the Agency to list advanced lighting features on NHTSA's website as a method of promoting the technology, therefore driving adoption into the vehicle fleet. The automaker reasoned that there are safety benefits associated with "Auto High Beam," noting that the benefits found are at least as great as those for LDW, another feature that NHTSA has listed for new vehicles on its website. GM also noted that far-infrared cameras do not have associated field effectiveness data at this time due to low penetration rate but suggested that they still be added to a listing of safety features. Honda, Auto Innovators, BMW, FSS, TI, and Intel agreed that adoption of advanced lighting features such as Auto High Beam should be incentivized. FSS noted that advanced lighting features not only improve PAEB performance but also eliminate glare from oncoming vehicles, improving visibility for other drivers in the surrounding area. FSS also referred to IIHS's vehicle lighting ratings and the positive effect on nighttime crash rates for vehicles earning the group's "good" rating versus a "poor" rating. To encourage installation of advanced lighting features in the U.S. vehicle fleet, BMW and Auto Innovators suggested NHTSA provide additional credits for vehicles equipped with an advanced lighting feature. Texas Instruments (TI) recommended that advanced lighting features be added to NCAP ratings in some capacity but did not specify how this should be accomplished. MEMA, CR, HMNA, and NTSB were among other respondents in favor of incorporating lighting for improved nighttime pedestrian visibility.

#### Overhead Lighting

NHTSA also requested comments on overhead lighting for PAEB testing under dark lighting conditions. NHTSA notes that rural environments tend to be darker and without ambient overhead lighting, while urban and suburban environments are typically more well-lit from overhead lights, surrounding vehicle headlamp illumination, and other various light sources. Some commenters reasoned that the lighting should match the environment of the scenario approximated. MEMA, BMW, HATCI, Subaru, and Auto Innovators were in favor of having overhead

lighting for urban and suburban scenarios but no overhead lighting for scenarios which more closely reflect rural encounters. Subaru specified that urban/suburban scenarios should have overhead lighting of 15 lux to simulate street lighting and that lower beams should be acceptable in these scenarios. In scenarios with no supplemental lighting, ADB or HBA would be expected to engage if the vehicle was equipped with advanced lighting features. If the SV does not have advanced lighting features, then some commenters (MEMA, BMW, HATCI, Auto Innovators, and Intel) asserted that high beams should be engaged. BMW also suggested that high beams should be engaged in higher-speed testing scenarios (tests with initial test speed at 50 kph (31.1 mph) or greater). HATCI mentioned that high beams should be allowed in dark conditions with no overhead lighting if high beam usage is shown to be common in the field in these situations.

GM suggested that scenarios be performed in two conditions: with overhead lighting and the use of low beams, and without overhead lighting and upper beam headlamps or advanced lighting features. The automaker reasoned that these two conditions represent a large portion of real-world driving conditions. Bosch, ZF Group, AARP, Intel, State Farm, The League, and one anonymous individual agreed that testing should be performed both with overhead lighting as well as in dark lighting conditions. The League also noted that if overhead lighting is shown to improve PAEB performance, then street lighting should be more widely deployed with the assistance of Congress, the U.S. Department of Transportation (USDOT), and the Federal Highway Administration (FHWA).

Many commenters expressed particular interest in the opportunity to harmonize with other global consumer information programs, with many responding to the proposed PAEB protocol noting that overhead lighting is used in Euro NCAP's protocol for crossing path tests in low ambient light conditions.<sup>248</sup> Bosch, TI, MEMA, GM, HATCI, Auto Innovators, and NSC were in favor of harmonizing NHTSA's NCAP PAEB test procedures under dark lighting conditions with Euro NCAP's. Tesla supported harmonization with IIHS's then-upcoming PAEB protocol, which does not involve the use of overhead lighting. IIHS plans to test

using both lower beam and upper beam headlamps.

One commenter, FCA, only supported conducting tests with overhead lighting as part of this upgrade. The group stated that current PAEB camera technology requires illumination to the sides of the vehicle and that regulatory restrictions prevent headlighting systems from achieving this level of illumination on their own. It also noted that this condition is more severe than Euro NCAP's current protocol. The group suggested that the Agency could add tests without overhead lighting at a future time when technology advances.

There were also many respondents (Lidar Coalition, Velodyne, NACTO, Advocates, CAS, Adasky, AAA, IIHS, ASC, and three individuals) who commented that no overhead lighting should be used in PAEB testing. As mentioned previously, Lidar Coalition supported testing in the darkest realistic conditions possible, comments also supplied by Velodyne, CAS, and an anonymous individual. Further, both Velodyne and Lidar Coalition stated that testing without supplemental lighting would highlight the need for new sensors and technologies that will "achieve optimal detection" of VRUs in all road conditions. NACTO urged NHTSA to consider the known shortcomings of PAEB systems when deciding which scenarios and test conditions to include in its NCAP test procedures, citing an IIHS study showing that PAEB systems are less effective in dark conditions.<sup>249</sup> One individual noted that pedestrians are often fatally struck by vehicles while walking in areas without streetlights and suggested that the Agency evaluate performance in commonly encountered dangerous situations to achieve NCAP's safety goals. Advocates stated it was in favor of testing without overhead lighting because of the wide array of street light types and brightness in the U.S., and the increased stringency that testing in dark conditions would present. Because of the abundance of rural and highway roads without overhead street lighting, Adasky stated that testing should be conducted in zero lux conditions. AAA expressed that testing with overhead lighting does not challenge a PAEB system as much as the use of advanced lighting or low beam headlamp use does in isolation and therefore suggested that the Agency conduct tests without supplemental lighting, also noting that many

pedestrians are struck in areas without overhead lighting.

#### Additional Information Supplied

Regarding available technology and other information, several commenters suggested that NHTSA should evaluate each technology type currently available and, in some cases, investigate the effectiveness of each. ASC noted that high resolution imaging radar, lidar, and thermal imaging cameras are available to address nighttime scenarios. NSC requested that NHTSA compare camera-based systems with lidar and other technologies in both light and dark conditions. Rivian acknowledged that there are limitations on FCW and PAEB technology's performance currently, specifically noting performance during dark lighting conditions. The automaker advocated for consideration of current system capabilities when determining NCAP test speeds and scenarios.

Other commenters offered information regarding specific sensor types. Tesla noted that infrared cameras may aid in pedestrian and animal detection in nighttime conditions. Vayyar mentioned that these enhanced attributes help the system provide robust monitoring. Thermal cameras were also specifically recommended by Adasky and one individual, with both respondents touting thermal cameras' abilities to perform in varied lighting situations, including nighttime, rain, snow, and fog. Both commenters claimed that this is because thermal cameras do not depend on ambient light to operate effectively. The individual commenter expressed that they were therefore in favor of more challenging test conditions since technology exists to address them. Adasky also added that thermal cameras have a wide field-of-view and longer range, and since even high beam lighting can only currently illuminate 120 m (393.7 ft.) to 150 m (492.1 ft.) ahead of the vehicle, high rates of speed require the system to be able to identify objects 200 m (656.2 ft.) ahead to reduce false positives. Lidar Coalition and Velodyne Lidar disagreed, opining that thermal cameras have limitations of their own: low resolution, placement restrictions, and potential to miss objects due to blending of separate objects' head characteristics. Instead, both groups stated that lidar systems are more capable of addressing nighttime scenarios because they rely on their own light source and have a higher resolution than radar. In addition to thermal cameras and lidar, Uhnder responded that imaging radar is also of higher resolution than most radar systems used in PAEB applications currently and is a promising technology.

<sup>248</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB/LSS VRU systems, Version 4.5*. See Annex B.

<sup>249</sup> Cicchino, J. B. (2022, February), *Effects of automatic emergency braking systems on pedestrian crash risk*, Insurance Institute for Highway Safety, <https://www.iihs.org/api/datastore/document/bibliography/2243>.



TI and Vayyar suggested that four-dimensional (4D) radar systems may increase system effectiveness. With regard to 4D systems, TI stated that “cascading multiple radar sensors provides a wider field of view, an extended range, and enhanced angle resolution to detect static objects.”

ITS suggested that night view assist, a system using infrared headlamps, is already available in certain vehicle models. The vehicle displays a view of upcoming obstacles in the instrument cluster to give the driver advanced notice. ITS favored including the technology in safety ratings but also reasoned that including this technology in NHTSA’s “recommended technologies” section would be appropriate.

#### Response to Comments and Agency Decisions

Details regarding lighting specifics for each condition to be tested are included in the sections that follow.

#### Vehicle Lighting Specifications, Including Advanced Lighting Systems

NHTSA proposed to use the SV’s lower beam headlamps during all NCAP PAEB testing conducted in the dark and to refrain from manually engaging the upper beam headlamps. After considering comments, this notice adopts this plan. NHTSA will also prohibit automatic engagement of a vehicle’s upper beams by way of advanced lighting systems, such as ADB, unless such systems cannot be deactivated.

NHTSA acknowledges that, as mentioned in the March 2022 RFC notice and above, Euro NCAP performs its CPLA scenario, which is analogous to the Agency’s S4c scenario, using upper beam headlamps. FCA supported this test specification to lessen test burden on manufacturers. Additionally, BMW requested that NHTSA manually engage upper beam headlamps during higher-speed (50 and 60 kph, or 31.1 and 37.3 mph) PAEB testing conducted in the dark. However, previous studies have suggested that drivers may not manually engage high beam headlamps each time they are warranted,<sup>250</sup> and NHTSA is not aware of definitive data available at this time to suggest that drivers use them appropriately in the field, as Rivian and other commenters had suggested. IIHS found that, for

3,200 isolated vehicles (where other vehicles were at least 10 or more seconds away), only 18 percent had their upper beam headlamps engaged.<sup>251</sup> At one unlit urban location, IIHS data showed that upper beam use was less than 1 percent. IIHS also found that even on rural roads, drivers used their upper beams less than half of the time they should have for maximum safety, on average. Accordingly, it is inappropriate to tie PAEB to a vehicle feature that a driver may or may not use on a trip. NHTSA agrees with several respondents that supporting data would be necessary to allow manual high beam headlamp usage.

Similarly, the Agency has also decided that advanced lighting systems, including ADB, will be disabled during NCAP PAEB testing conducted in the dark, unless the advanced lighting system cannot be deactivated. This decision will apply even to those systems that are active by default when low beam headlamps are first engaged. Furthermore, for lighting systems with adjustable settings, the vehicle will be tested in dark conditions utilizing the beam/lighting configuration that is most similar to a traditional low beam setting, unless the beam/lighting configuration is automatically adjusted.

While NHTSA amended its lighting standard, FMVSS No. 108, “Lamps, reflective devices, and associated equipment,” in 2022 to allow installation of ADB headlamps, citing the potential to provide safety benefits in preventing collisions with pedestrians when other vehicles are present,<sup>252</sup> such systems are not required by this Standard, unlike lower beam and upper beam headlamps. Therefore, NHTSA reasons, as several commenters mentioned, that even if an ADB system or other advanced lighting system were installed on a vehicle, the driver may opt not to use it. Accordingly, it is most desirable from a safety standpoint for NCAP to assess those conditions that represent, as Aptiv suggested, a theoretical worst-case scenario—testing in dark conditions with only the vehicle’s lower beam engaged. Several commenters expressed concern that vehicles will not be evaluated equally if advanced lighting features are enabled, stating that they are akin to upper beam headlamps. In the same vein, others suggested that NHTSA evaluate PAEB performance with upper beam headlamps if advanced lighting systems are enabled

for use in the lower beam tests. The Agency recognizes that ADB works by automatically switching from the lower beam to the upper beam when it is deemed appropriate. As such, testing PAEB in the dark with ADB (or other advanced lighting systems) enabled may amount to NHTSA only evaluating system performance when the vehicle’s upper beam is active. Finally, because ADB and other advanced lighting systems will not be enabled for NCAP’s PAEB testing, commenters’ concerns regarding ADB activation speeds are no longer applicable.

Although NHTSA received suggestions to conduct testing using upper beam headlamps in addition to testing using lower beam headlamps, the Agency does not see the need to increase NCAP test burden at this time. A vehicle which performs well in the lower-illumination case would be expected to also perform well when there is more illumination. Notably, more vehicle-to-target contact was observed during the lower beam PAEB research tests than the upper beam tests. However, NHTSA also recognizes that, in rare cases, vehicles may perform better in PAEB testing with the lower beams illuminated versus the upper beams. The Agency plans to monitor PAEB performance under various circumstances and will address any further needs for additional testing as they become apparent.

While the Agency acknowledges Vayyar’s suggestion that NHTSA conduct testing with no headlighting system illumination under the assumption that this would best test the sensing system and provide a true worst-case evaluation, this is not a reasonable use case. In areas synonymous with NHTSA’s lighting test conditions (*i.e.*, darkness with no overhead lighting), failure to turn on one’s headlamps should yield such limited visibility that the Agency reasons drivers will almost certainly realize they are not utilizing their lights and turn them on. Driving in dark conditions without headlamps also constitutes a significant and dangerous misuse situation. While NHTSA agrees there is merit to assessing worst-case conditions in many circumstances, the Agency also sees benefit in ensuring that test cases are also field-representative use cases.

Several commenters suggested that NHTSA promote the installation of advanced lighting systems not only to mitigate nighttime pedestrian crashes but to improve nighttime visibility in general by eliminating glare. GM submitted data to show an estimated 22 percent field benefit from Auto High

<sup>250</sup> Sullivan, John M., Adachi, G., Mefford, Mary Lynn, Flannagan, Michael J. (2003, February). *High-Beam Headlamp Usage on Unlighted Rural Roadways*. The University of Michigan Transportation Research Institute. <https://deepblue.lib.umich.edu/bitstream/handle/2027.42/55182/UMTRI-2003-2.pdf>.

<sup>251</sup> <https://www.iihs.org/news/detail/few-drivers-use-their-high-beams-study-finds> (last accessed 11/18/2023).

<sup>252</sup> 87 FR 9916.

Beam systems, mitigating nighttime pedestrian, cyclist, and animal crashes.<sup>253</sup> However, as there will be no method for assigning extra credit for vehicles with added safety features at this time, NHTSA will not implement multiple commenters' suggestions to offer additional points or credit to vehicles equipped with advanced lighting systems, nor will the Agency allow vehicles to receive partial credit for passing with manual upper beam usage as suggested by Intel. More research is needed to ascertain safety benefits associated with night view systems. While it is out of scope for NHTSA to require advanced lighting features on new vehicle models as part of this final notice as some commenters requested, the Agency has added advanced headlighting assessments to its long-term NCAP roadmap.

#### Overhead Lighting

NHTSA agrees that unlit roads are treacherous for pedestrians. As both AAA and an individual commenter noted, pedestrians are often fatally struck while walking in areas without supplemental lighting. For example, IIHS found that in 2019, 35 percent of pedestrian fatalities occurred in the dark with no supplemental lighting present,<sup>254</sup> which is nearly the same as that found by Volpe in its 2011–2015 data set (36 percent).<sup>255</sup> Further, a study of California, North Carolina, and Texas crashes from 2010–2019 found that pedestrians struck in areas without street lights were 2.4 times more likely to be fatally injured than those struck in areas with street lights.<sup>256</sup>

Based on this, the Agency has decided it will conduct all testing under dark lighting conditions with no overhead lighting present. As previously mentioned, the Agency's testing showed only slightly improved performance when conducting PAEB tests with overhead lighting present versus no overhead lighting. Given these findings, the Agency asserts it is also least

burdensome to conduct testing in the darkest environmental scenario only.

NHTSA acknowledges that some commenters suggested it match the environmental lighting conditions for each test to the analogous real-world scenario, with overhead lighting used for S1 crossing path scenarios, while no overhead lighting would be used for S4 in-path scenarios. Commenters noted that Euro NCAP performs its PAEB tests in this manner. However, the Agency concludes there are several reasons its planned testing approach is the most appropriate at this time.

First, environmental lighting conditions vary across the U.S. Light color (*i.e.*, color temperature), uniformity, luminance level, and other parameters may differ, even along different stretches of the same roadway. As Advocates noted, there are also a wide variety of streetlight types in use on U.S. roadways, making it difficult for the Agency to choose one streetlight specification that is representative of all or most overhead lighting conditions. Instead, it is most practical to conduct PAEB testing in dark conditions which can be more easily replicated. Such testing would align with Adasky's assertion that many American roads are not lit.

In addition, the Agency reasons that conducting NCAP's PAEB tests under dark lighting conditions may not only mitigate pedestrian involvement in crashes at night, but also encourage the development of more robust sensing and detection technologies. Specifically, although there are natural limits to the human eye's vision capabilities in dark conditions, several commenters described various technologies that substantially augment a driver's ability to detect objects and pedestrians. The commenters noted the benefits of these technologies in different conditions, including darkness, rain, snow, and fog. While the Agency agrees there are technologies available to fulfill this need, it is inappropriate to promote or mandate one sensor technology over another, particularly since there are advantages and limitations to each, as Lidar Coalition stated. Instead, NHTSA intends to test the capabilities of the system as a whole. This should allow vehicle manufacturers the ability to address each nighttime scenario as they wish and may in turn spur innovation.

In response to FCA's suggestion that overhead lighting is necessary based on the concern that regulatory barriers may prevent manufacturers from designing headlamps providing sufficient illumination to the sides of the vehicle so as to perform well in PAEB testing under dark lighting conditions, the

Agency found this not to be the case during its research testing series. As described earlier, some vehicles were able to perform well in most of the adopted PAEB tests conducted under dark lighting conditions, proving that regulations do not restrict system designs which are effective. Based on this, the knowledge that PAEB is generally less effective when driving in dark conditions, and the substantial percentage of pedestrian fatalities that occur in conjunction with a lack of street lighting overhead, NHTSA concludes it is most appropriate at this time to move forward with testing without the use of supplemental lighting.

Finally, NHTSA notes that although Euro NCAP uses overhead lighting for its CPNA, CPNCO, and CPFA testing, IIHS does not utilize supplemental lighting for any of its nighttime PAEB testing. Instead, IIHS requires that test site illumination must be below 1 lux.<sup>257</sup>

#### 4. Number of Required Trials To Pass and Repeat Trials in the Event of Contact

In its March 2022 notice, the Agency proposed an evaluation method for PAEB similar to that proposed for AEB. NHTSA presented a plan to perform one trial per test speed, beginning at a 10 kph (6.2 mph) minimum SV speed. If the SV did not contact the pedestrian mannequin during this initial trial, the test speed would be raised incrementally by 10 kph (6.2 mph) until a maximum test speed of 60 kph (37.3 mph) was achieved and evaluated. If the SV contacted the pedestrian mannequin during an initial trial for a given test condition and test speed combination, the resulting next steps would depend on the relative longitudinal velocity of the SV at impact. If the SV's relative longitudinal velocity at impact was less than or equal to 50 percent of the SV's initial test speed, then up to four more confirmatory tests at the same SV speed would be performed. The SV could not contact the pedestrian mannequin in three or more of the five total tests. However, if the SV contacted the pedestrian mannequin at a relative longitudinal velocity greater than 50 percent of the SV's initial speed, testing would be discontinued. This is because the vehicle would be considered to have failed the PAEB test evaluation at this test speed and, consequently, the PAEB test overall. Noting that 50 percent of the minimum test speed (10 kph, or 6.2

<sup>253</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-3856>.

<sup>254</sup> Cicchino, J.B. (2022, February), *Effects of automatic emergency braking systems on pedestrian crash risk*, Insurance Institute for Highway Safety, <https://www.iihs.org/api/datastore/document/bibliography/2243>.

<sup>255</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>256</sup> Ferenchak, N.N., Gutierrez, R.E., & Singleton, P.A. (2022), *Shedding light on the pedestrian safety crisis: An analysis across the injury severity spectrum by lighting condition*, Traffic Injury Prevention, 23:7, 434–439, DOI: 10.1080/15389588.2022.2100362.

<sup>257</sup> Insurance Institute for Highway Safety (IIHS) (January 2024), *Pedestrian Autonomous Emergency Braking Test Protocol, Version IV*.

mph) is 5 kph (3.1 mph) and 50 percent of the maximum speed possible (60 kph, or 37.3 mph) is 30 kph (18.6 mph), NHTSA requested comments on whether a 50 percent limit on the maximum relative impact velocity was an appropriate threshold to establish at which additional testing (*i.e.*, repeat trials) would be conducted for the proposed range of test speeds.

Given the large number of PAEB test conditions proposed for adoption (*i.e.*, eight conditions covering multiple test speeds and lighting specifications), NHTSA noted that its proposed approach to reduce the number of test trials required at a given test speed from those specified in the original draft 2019 PAEB test procedure was a reasonable attempt to reduce test burden. The Agency believed that assessing PAEB system performance over subsequent incremental trials and for multiple repeated trials in instances where a vehicle is unable to meet the “no contact” performance requirement in the initial valid trial for a particular combination of test condition and speed would best integrate program efficiency while still ensuring system robustness.

In addition to seeking comments on its proposed assessment approach, NHTSA also sought comment on whether it should instead pursue an alternative approach, such as conducting multiple trials for each test condition and speed combination regardless of whether the “no contact” performance criterion was met. The Agency collected a wide variety of comments in response to these questions.

#### Summary of Comments

A few commenters, including AAA and ASC, agreed with NHTSA’s proposed testing approach in its totality. Another commenter, Adasky, relayed that NHTSA’s plan was sufficient if information about any potential test failures is made clear to the public. However, several commenters suggested NHTSA adopt an entirely different testing approach. Specifically, MEMA, HATCI, Auto Innovators, and Intel recommended the Agency employ the evaluation method currently utilized by Euro NCAP, whereby the Agency would accept self-reported performance predictions from manufacturers and then randomly select scenarios and test speeds to verify vehicle performance. Intel further commented that if the results of a spot-check test match the manufacturer’s results, then the test would be accepted (and points could be awarded based on performance), but if the results differed between the manufacturer’s data and NHTSA’s, then

two additional tests would be performed. If two of the three trials did not produce the manufacturer’s predicted results, the company suggested partial credit could be given, and a correction factor could be applied. The commenters noted this method of evaluation would achieve the desired result of reducing the test burden on NHTSA labs.

One commenter, CAS, stated the performance criteria proposed by the Agency could be more stringent. The organization explained that systems offering no contact performance for five of five tests “provide only 86% reliability with 50% confidence.” Accordingly, CAS opined additional tests should only be allowed after pedestrian mannequin contact if the manufacturer changed the vehicle’s configuration in response to the impact. Under CAS’s plan, follow-up tests would be conducted, and the configuration would be retrofitted to previously assembled units and applied to all new units moving forward, similar to the process for a running change in crashworthiness NCAP.

Overall, most commenters agreed with the Agency’s approach, in part, but suggested an alternative number of trials or maximum speed threshold would be more appropriate.

#### Number of Test Trials/Repeat Trials

In relation to number of test trial and repeat trials, several commenters stated the Agency should adopt an alternative number of test trials to assess each test speed. DRI and Subaru were two such commenters, with both stating at least two trials should always be completed. DRI stated if the first trial ended in a contact with an SV impact speed of 50 percent of the initial speed or greater, a full set of five trials would be completed. However, if the SV avoided the pedestrian mannequin or impacted at less than 50 percent of the initial speed, one confirmatory repeat trial would be conducted. DRI explained if the results of the confirmatory trial were the same as the initial trial, then that scenario/speed would be complete. However, if the results differed, then three more trials would be conducted for a total of five trials. DRI explained this approach may potentially identify vehicles that inconsistently detect pedestrians and would eliminate “luck of the draw” results. The laboratory also noted anecdotal evidence from its testing experience suggesting there may be vehicles which cannot reliably detect pedestrians, but they perform very well otherwise. Subaru suggested that NHTSA harmonize with JNCAP’s method of testing, which entails

running three trials for each vehicle speed. Subaru stated trials at a given SV speed could be stopped at two if the vehicle avoided contact twice in a row or if the speed reduction rate was the same twice in a row.<sup>258</sup>

Honda agreed with DRI that five trials should be performed if the SV contacts the pedestrian mannequin at 50 percent or greater of the initial speed. TRC expressed that three total trials would be sufficient, with only one failed run permitted. Auto Innovators opined multiple trials (*i.e.*, for a three-out-of-five passing criterion) would be needed if a no-contact criterion is established since the Agency’s research data showed that several vehicles had contact for one run but were able to avoid making contact for three out of five runs. An individual commenter expressed that seven trials would be more appropriate to ensure the systems work reliably and to harmonize with other ADAS test protocols proposed by NHTSA for NCAP.

Two respondents, Toyota and Advocates, suggested that an alternative number of trials may be more appropriate for PAEB evaluations, without providing a specific number. Advocates suggested a greater number of trials may be appropriate, with the consumer group advising NHTSA to set stringent pass/fail criteria since real-world situations may vary and are not ideal. Advocates urged the Agency to take this into account when selecting the number of trials for each scenario, asserting that NHTSA must be confident that the technologies will operate as tested. Conversely, Toyota suggested that a reduced number of trials may be sufficient. The automaker emphasized the importance of minimizing the amount of testing wherever possible to provide timely information to consumers. It recommended carefully selecting the number of test trials (and test conditions) to ensure that enough relevant performance information is conveyed to interested parties.

IDIADA reasoned the Agency’s approach provided sufficient assurance, stating it was a “good strategy” to perform one run per test speed for multiple speeds and a range of scenarios since PAEB systems are robust. However, the laboratory did not support NHTSA’s testing approach in its entirety. As discussed later, IDIADA commented that vehicles should completely avoid making contact with the mannequin target at initial test

<sup>258</sup> Japan New Car Assessment Program (JNCAP) (Revised March 23, 2022), *Autonomous Emergency Braking System [For Pedestrian Daytime] Performance Test Procedure*.

speeds up to 40 kph (24.9 mph) and offer speed reductions of greater than 50 percent for initial test speeds greater than 40 kph (24.9 mph). Like IDIADA, HATCI also found NHTSA's proposed approach of one run per speed appropriate; however, they opined that vehicles should get credit for any passed runs up to the point of failure and for the speed reduction at failure. GM stated the Agency could conduct one trial per test speed up to 40 kph (24.9 mph) or until contact occurs. BMW also supported the Agency's approach of performing one run per test condition and four additional trials in the case of impact if NHTSA employed a no-contact criterion; however, the manufacturer preferred an assessment approach based on speed reduction. For this approach, BMW asserted that any impact should be followed by two confirmatory trials, with the median impact speed of the three trials being selected as the true impact speed for that scenario/speed. Conversely, Auto Innovators suggested that the Agency may only have to conduct one trial run per test speed if a speed reduction approach was adopted. However, Auto Innovators seemingly preferred an assessment approach requiring three out of five passing runs in such instances, like it advocated for in the event NHTSA adopted a no contact criterion (discussed prior).

#### Appropriate Maximum Allowable Impact Speed for Repeat Trials

Three groups agreed with NHTSA's proposed allowable maximum impact velocity for additional testing: AAA, ASC, and HATCI. AAA noted testing experience suggests insufficient speed reduction in the first trial indicates a vehicle is unlikely to perform well in subsequent testing. ASC specifically stated its support of the 50 percent reduction in speed value, because at the upper end of the testing range (60 kph (37.3 mph)), the maximum allowable impact speed for additional test trials would be 30 kph (18.6 mph), which is lower than the pedestrian impact test speeds for crashworthiness pedestrian protection tests in Global Technical Regulation (GTR) No. 9 (40 kph (24.9 mph)).

Other commenters, like Mercedes-Benz, Honda, Intel, IDIADA, Auto Innovators, and GM, objected to an assessment approach that discontinued testing based on a vehicle's inability to achieve complete crash avoidance for a specified test speed. These respondents suggested that the full battery of required test trials should be conducted for the entire speed range regardless of complete crash avoidance. More

specifically, Honda and Intel expressed it would be overly stringent to discontinue testing when impact speed is greater than 50 percent of the initial test speed, as was proposed. Honda stated that four additional trials should be conducted in such instances, and Intel recommended that, if an incremental approach was adopted, NHTSA should continue to run trials at least one SV initial speed increment higher beyond the speed at which the vehicle is considered to fail, as long as the vehicle achieves full avoidance in at least one trial. Although Subaru generally agreed with the upper impact speed limit threshold, the automaker recommended that instead of discontinuing testing for impact speeds over 50 percent of the initial test speed, NHTSA should review in-house manufacturer data to determine whether this was an expected outcome. If the manufacturer data indicates that different performance was expected, then Subaru suggested additional trials should be executed.

Auto Innovators also supported allowing testing to proceed in the event of contact and/or a speed reduction of less than 50 percent, suggesting the Agency utilize a three-out-of-five passing criterion in such instances and assign partial credit for vehicles that perform well at higher speeds. For lower initial test speeds (*i.e.*, less than 40 kph (24.9 mph)), the group, along with Honda, suggested incremental testing should proceed regardless of impact speed. Honda expressed this would limit the influence of potential variation in test conditions and would be consistent with approaches used by other global NCAPs to determine the maximum allowable impact speed. The manufacturer explained that Euro NCAP discontinues testing when the SV impact speed reduction is less than 15 kph (9.3 mph) for initial test speeds over 40 kph (24.9 mph), and JNCAP discontinues testing if impact speed exceeds 40 kph (24.9 mph) over two test runs. Auto Innovators asserted some vehicles may not achieve full avoidance at lower speeds due to sensor viewing angles and suggested that NHTSA's proposed method of discontinuing the test in this case would unfairly penalize a vehicle manufacturer and might not convey the system's full capability. Subaru also stated that poor performance at lower speeds should not automatically disqualify a vehicle from earning partial credit for better performance at higher speeds.

Like other commenters, GM supported continued testing upon contact. The manufacturer cautioned that a single failure should not result in

the full penalty of no credit when there is potential test variation introduced at higher speeds or with obstructions present. GM stated that the pass/fail penalty should be applied over the entire set of test runs instead of individual runs. Alternatively, the manufacturer suggested the Agency could adopt pass/fail criteria based on a minimum nominal speed reduction, an approach also supported by Tesla, FCA, and Aptiv. FCA and Aptiv noted that a 50 percent reduction when the initial test speed is 40 kph (24.9 mph) or greater would be too stringent and instead suggested that a more appropriate speed reduction to accept for these higher initial speeds would be 20 kph (12.4 mph) since the ensuing impact speed would fall below the GTR No. 9 crashworthiness test speeds, (40 kph (24.9 mph)). Aptiv stated their comment was based on statistics showing pedestrian fatalities and injuries are "greatly reduced" below 40 kph. Along similar lines, assuming contact was allowed, the League advocated for a maximum impact speed of 25.7 kph (16 mph) based on a study by the AAA showing the average risk of severe injury for a pedestrian struck at this speed is 10 percent.<sup>259</sup>

As with other aspects of the PAEB testing protocol, Advocates requested NHTSA provide data and analyses to support its decisions for test specifications, noting the information the Agency provides must be sufficient for consumers to accurately and reliably compare vehicle performance.

#### Response to Comments and Agency Decisions

As mentioned previously, NHTSA has decided to proceed with adopting a testing approach for PAEB that is similar to, but not identical to, that which the Agency proposed. For each test condition, the Agency will increase test speeds in 10 kph (6.2 mph) increments from the minimum test speed to the maximum, conducting one trial for each required speed. In the event the SV contacts the pedestrian mannequin during the initial run for any test speed, testing will cease for the test condition, respective test scenario, and PAEB testing for the particular lighting condition overall. Vehicles must pass all required trial runs (*i.e.*, one per test speed) to receive PAEB credit for the relevant lighting condition on NHTSA's website.

<sup>259</sup> Tefft, B.C. (2011). Impact Speed and a Pedestrian's Risk of Severe Injury or Death (Technical Report). Washington, DC: AAA Foundation for Traffic Safety.

### Number of Test Trials/Repeat Trials

Although several commenters recommended the Agency perform multiple trials (e.g., two, three, five, seven, etc.) for each test condition, often with the number of recommended trials varying based on the initial test speed, impact speed, or prior results, NHTSA has made the decision to run only one valid trial per test condition. This decision, which aligns with that adopted for AEB testing, is appropriate for several reasons.

First, a testing approach that requires one trial run per test condition instead of multiple runs allows the Agency to limit test burden while also performing tests for a greater number of conditions that represent real-world crashes involving pedestrians. Under the Agency's final PAEB test matrix, NHTSA will conduct (at most) 36 test trials for testing in daylight conditions and 34 trials for the testing in dark lighting conditions, for 70 trials total. This is far fewer than the number of trials that would be required if the Agency were to adopt an approach that required multiple trials for each of the six adopted PAEB test conditions as is prescribed for NCAP ADAS testing currently. For instance, NCAP's current AEB test procedure requires a minimum of five passing trials out of seven conducted to pass a given test condition, for a total of up to 42 trials for a CIB test and up to 56 trials for a DBS test. Adopting a similar approach for PAEB, as one commenter suggested, would require that up to 350 total trials be conducted, resulting in a significant burden to both vehicle manufacturers and NHTSA. Choosing instead to conduct one trial per test condition creates a test burden more comparable to NCAP's current AEB testing.

Given this decision, it is not necessary to proceed as several commenters suggested and select only certain scenarios and/or test speeds, whether pre-selected or chosen at random, to verify system performance. Such an approach may limit burden, but it would not best ensure system functionality or robustness. Likewise, it is unnecessary to accept manufacturer data and spot-check system performance for only certain test condition/speed combinations, as several commenters suggested. NHTSA reasons that its reduced testing approach should ensure acceptable system performance across a range of real-world conditions without sacrificing program integrity. This finalized test method of limited trials should also allow NHTSA to communicate valuable information

more quickly to consumers, as Toyota requested.

The Agency's decision to conduct one trial per test condition/speed combination should also limit consumer confusion and better instill confidence and reliability in a vehicle's PAEB system. As mentioned earlier for AEB, allowing repeated trials in the event of contact may mislead consumers into thinking that a vehicle's AEB system provides more repeatable, robust performance than it does. Providing consumers with an assessment of system performance that is a single, representative sample rather than an assessment based on a best three out of five approach therefore seems most appropriate. And, while Auto Innovators contended that vehicle performance in the Agency's research tests suggests that multiple runs (*i.e.*, for a three-out-of-five passing criterion) are necessary if a no-contact criterion is adopted, NHTSA disagrees with this assertion. Although several vehicles made contact in many runs, one vehicle afforded complete crash avoidance in 63 out of the 70 total adopted test condition/speed combinations. This suggests that consistent, repeatable performance is possible for more robust PAEB systems, and that any poorer performance was something manufacturers could remedy. To best address the safety need, the Agency concludes it should devise passing performance thresholds that encourage design improvements to match the system performance afforded by the best fleet performers (*i.e.*, those that provide no contact during the first trial run for a large number of test conditions) rather than to establish a performance threshold based on the average or worst performers.

While some commenters expressed that the Agency should perform multiple trials for each test condition to ensure system reliability (albeit often with contact permitted), the Agency asserts, as it conveyed for AEB, that requiring one trial run per test condition instead of multiple runs is appropriate given its decisions to increment test speeds by 10 kph (6.2 mph) from a minimum speed to a maximum speed (as discussed earlier) and to disallow contact (as discussed next) for the PAEB tests. NHTSA reasons this approach will effectively identify system inconsistency and adequately address DRI's concern regarding "luck of the draw" results. The Agency's planned incremental testing approach, which uses relatively small speed intervals, is inherently designed to expose unreliable systems and ensure system reliability without the need for

confirmatory runs, as the test laboratory suggested. If an inferior system happens to succeed at one speed, it will likely not continue to be "lucky" for the entire test series for a test condition (or for subsequent test conditions) as speeds are increased and test stringency increases. Since a failure of any one run at any given speed for any one test condition will result in an overall test failure for the tested PAEB system in that particular lighting condition, this approach is sufficient to serve as an acceptable gauge of system robustness. Furthermore, the slight increase in test speed from one trial to the next effectively provides the same benefit of assuring reliability as multiple runs conducted at the same speed. By adopting this testing method, consumers should feel confident that a vehicle that receives PAEB credit on NHTSA's website for a given lighting condition will operate consistently during a myriad of real-world driving situations in which consumers will likely be involved, as Advocates had requested.

Adopting the testing approach of conducting one run per test condition is viable even though CAS asserted that "passing five of five tests provides only 86% reliability with 50% confidence." The Agency notes that while its final testing approach may be limited in that it does not ensure absolute reliability of system performance with 100 percent confidence, it is also unreasonable to impose the number of runs for each PAEB test speed that would be required to achieve this level of certainty. The test burden for NHTSA would increase exponentially.<sup>260</sup> While NHTSA could alternatively consider conducting a significant number of runs (*i.e.*, more than 20) at only the highest test speed for each test condition (*i.e.*, 40 kph (24.9 mph) for S1d testing in darkness and 60 kph (37.3 mph) for all other PAEB test conditions in daylight and darkness), as the Agency mentioned prior for AEB, it would risk imparting additional damage to the test vehicle and test equipment in addition to test delays if it was to take such an approach. As such, NHTSA's planned test method affords the most balanced approach to ensure system reliability with an acceptable degree of

<sup>260</sup> Using the binomial distribution to determine sample size for a given reliability and confidence level, 300 trials would be needed for 99 percent reliability with 95 percent confidence. See [https://reliabilityanalyticstoolkit.appspot.com/sample\\_size](https://reliabilityanalyticstoolkit.appspot.com/sample_size). Similarly, 59 trials would be needed for 95 percent reliability with a 95 percent confidence, and 29 trials would be needed for 90 percent reliability with 95 percent confidence. Since the vehicle tested is randomly purchased or leased from dealerships, its performance in the AEB tests is based on the performance and manufacturing reliability set by the manufacturer.

confidence. Furthermore, as will be discussed later, the Agency has adopted a criterion of “no contact,” like CAS requested, which should further help to address the organization’s concerns.

#### Maximum Allowable Impact Speed for Repeat Trials

NHTSA originally proposed conducting multiple trials and requiring a three-out-of-five pass rate for instances where the relative longitudinal velocity between the SV and pedestrian mannequin was less than or equal to 50 percent of the initial speed of the SV during an initial trial at any one test speed. However, based on the results from the Agency’s recent model year 2021–2022 PAEB research tests, it is now unacceptable to award credit to PAEB systems with inferior performance that may allow impact with pedestrians at some frequency when other systems are able to avoid contact for most test conditions. To maximize safety impact, NHTSA must establish performance criteria for testing that will ensure AEB system response is consistent and repeatable. As such, like decisions made for AEB NCAP testing, NHTSA will not conduct repeat PAEB trials in the event of SV-to-pedestrian mannequin contact regardless of the relative longitudinal impact velocity recorded between the vehicle and the pedestrian mannequin at the time of impact. Instead, PAEB testing for a given lighting condition will cease at the first instance of contact. The Agency is making this decision while, at the same time, acknowledging that many commenters supported conducting additional PAEB test trials when a 50 percent speed reduction or less is observed in the first trial run or subsequent trial runs for a particular test speed.

For example, ASC expressed that a 50 percent reduction in speed was acceptable since the maximum allowable impact speed at the highest PAEB test speed (60 kph (37.3 mph)) would be 30 kph (18.6 mph), and this speed is lower than the 40 kph (24.9 mph) pedestrian impact test speed specified for crashworthiness pedestrian protection tests in GTR No. 9. However, the Agency would be remiss to tolerate any amount of vehicle-to-pedestrian contact in the PAEB NCAP tests given the possibility of serious injury or death resulting from low-speed crashes. Furthermore, NHTSA agrees with AAA’s concerns that vehicles that cannot provide complete crash avoidance in one trial are unlikely to avoid contact in subsequent, higher-speed trials, with the exception of trials initiated at 10 kph (6.2 mph).

Discontinuing follow-up testing for these vehicles should limit potential damage to the vehicle, pedestrian mannequin, and test equipment, thus avoiding expensive or time-consuming interruptions or repairs during NCAP assessments and limiting repeatability concerns. For these reasons, the Agency also does not see a need to proceed as Subaru suggested and conduct repeat trials for impact speeds over 50 percent of the initial test speed for those vehicles exhibiting performance that differs from manufacturer data.

For similar reasons, it is not appropriate to adopt an alternative, and essentially less stringent, speed reduction, like 20 kph (12.4 mph), for speeds greater than 40 kph (24.9 mph), as suggested by FCA and Aptiv. While it is true that the resultant maximum impact speed (40 kph (24.9 mph)) resulting from the maximum initial test speed (60 kph (37.3 mph)) is equivalent to the GTR No. 9 crashworthiness test speed and the likelihood of being killed or seriously injured at impact speeds below 40 kph (24.9 mph) is reduced, it is not negated; injuries and fatalities still occur at impact speeds ranging from 20 kph (12.4 mph) to 40 kph (24.9 mph). NHTSA’s crash data shows that, on average, 22 percent of pedestrian injuries and 8 percent of pedestrian fatalities occur yearly on roads with posted speeds 40 kph (24.9 mph) and under.<sup>261</sup> Likewise, NHTSA does not agree with adopting a pass/fail criterion based on a minimum nominal speed reduction, as GM and several others suggested, or a maximum impact speed, as the League submitted. Adopting a testing approach which accepts a 10 percent chance a pedestrian may incur a severe injury, as the League suggested for a 27.5 kph (16 mph) maximum impact speed, is objectionable when systems capable of producing no injuries in the scenarios examined exist in today’s fleet.

The Agency disagrees with the assertions of many commenters that it would be overly stringent or incomplete to discontinue testing upon contact in a single run and/or when a specific speed reduction was not achieved instead of proceeding with incremental testing through the full battery of required test trials. NHTSA’s main objectives—to promote robust PAEB system designs, maximize safety potential, and prevent damage during testing—are best met by implementing a no contact criterion for

each trial run, as CAS and Adasky asserted. This applies even to those runs conducted at low initial test speeds. NHTSA recognizes that Subaru and Auto Innovators objected to discontinuing testing when poor performance was observed at low initial test speeds, with the latter commenter contending that such an approach would unfairly penalize a vehicle and not convey the system’s full capability. However, assuring robust performance across all speeds is imperative to maximize safety, especially considering a large number of pedestrian crashes occur at similar speeds to those adopted. The Agency’s planned testing approach (*i.e.*, conducting one trial per test condition across a wide range of test speeds and scenarios and adopting a no contact performance requirement) provides a more complete assessment of system capability and is the most appropriate method to ensure system reliability and confidence. Since vehicles will not be given multiple opportunities to provide passing performance but will instead be required to perform well on the first try, the Agency’s approach should allow consumers to feel confident that a vehicle that receives PAEB credit for a given lighting condition on NHTSA’s website will operate consistently in the real-world driving situations they will likely encounter, as Advocates requested.

The Agency also does not concur with GM’s assertion that test variations introduced at higher speeds or with obstructions present may result in questionable test conduct such that it would unfairly penalize a vehicle to discontinue testing based on a single run failure. NHTSA imposes tolerances on vehicle and target speeds, accelerations, positions, etc. to eliminate such concerns. Furthermore, it expects that PAEB systems that pass the selected tests should offer robust overall performance such that slight deviations from exact test specifications, which will likely be encountered during real-world driving, should not result in vastly different system performance. For this reason, it is appropriate that failure in a single trial will result in an overall test failure for a given lighting condition. Robust system performance is needed to ensure safety potential is realized.

NHTSA will conduct PAEB tests in a prescribed order for its NCAP testing, generally moving from least stringent to most stringent, based on the Agency’s experience gained during research testing. For a given lighting condition, PAEB testing will proceed as follows: S4c, S4a, S1b, S1a, S1e, S1d. For each

<sup>261</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August). *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745). Washington, DC: National Highway Traffic Safety Administration.

condition, testing will begin with an SV speed of 10 kph (6.2 mph) and will increase incrementally by 10 kph (6.2 mph) until either (1) the SV fails to fully avoid the pedestrian mannequin or (2) the SV reaches the maximum test speed for that condition. If the SV successfully avoids the pedestrian mannequin for a full battery of tests under one condition, testing will move to the next test condition. However, if the SV contacts the pedestrian mannequin, testing for that condition (as well as all subsequent testing for the applicable lighting condition) will cease. The Agency expects that, by using this approach, damage to both the pedestrian mannequins as well as to the SVs will be minimized, thus limiting costly and time-consuming repairs and delays.

Since NHTSA is proceeding with a pass/fail approach designed to provide a comprehensive assessment across a range of test speeds and multiple test conditions with no contact, it does not see a need to finalize Intel's request to conduct at least one trial for the subsequent speed increment beyond the speed at which a vehicle first fails in instances where the vehicle achieves full avoidance in at least one of the prior trials. Such vehicles would fail the Agency's PAEB test for the given lighting condition at the first instance of contact. This test plan, including the order in which test conditions are carried out, may be amended should the Agency's assessment method change in the future.

#### 5. No Contact Versus Speed Reduction

For PAEB performance criteria, NHTSA proposed that a vehicle must achieve complete crash avoidance (*i.e.*, have no contact with the pedestrian mannequin) to receive credit for a test trial conducted at each specified test speed (*i.e.*, 10, 20, 30, 40, 50, and 60 kph (6.2, 12.4, 18.6, 24.9, 31.1, and 37.3 mph)) for each test condition (S1a-e and S4a-c). NHTSA believed that this approach, used in conjunction with an incremental increase in SV speed (as discussed earlier), would limit damage to the pedestrian mannequin and the SV during testing. As an alternative, however, the Agency sought comment on whether it should require minimum speed reductions or specify a maximum allowable SV-to-mannequin impact speed for any or all proposed test conditions (*i.e.*, test condition and variant/test speed combination).

#### Summary of Comments

##### No Contact

Some commenters agreed with the Agency that the no contact criterion was

appropriate for the proposed PAEB test conditions. AAA found the no contact criterion unambiguous and straightforward, qualities that would be helpful in evaluating performance, a sentiment echoed by Adasky. The League commented that avoiding contact is the only way to ensure that death or serious injury does not occur. The remaining commenters that shared this viewpoint commented that, by requiring no contact, the Agency would insure against real-world, challenging situations that are not as controlled as NHTSA's test protocol. CAS, Uhnder, ASC, and Adasky mentioned that pedestrians in the field are diverse, and it would be impossible to ensure the public at large's safety without a no contact criterion. As mentioned earlier, CAS also asserted that a no contact criterion is necessary because "passing five of five tests provides only 86% reliability with 50% confidence." From a logistical standpoint, TRC noted that this would be a welcomed approach since the test mannequins and equipment could receive significant damage during pedestrian testing. Specifically, a no-contact criterion would alleviate concerns about equipment durability, particularly for higher-speed (greater than 60 kph (37.3 mph)) testing.

##### No Contact at Low Speeds, Speed Reduction at Higher Speeds

A few groups favored requiring no contact for tests with initial test speeds of 40 kph (24.9 mph) or less and allowing speed reduction for tests with initial test speeds above 40 kph (24.9 mph). These included Aptiv, Advocates, IDIADA, GM, and Intel. GM stated that the current state of technology does not support full avoidance at all speeds but that it is currently possible in the proposed test conditions up to 40 kph (24.9 mph). Beyond 40 kph (24.9 mph), GM suggested that the vehicle should be evaluated based on the amount of speed reduction achieved. Advocates acknowledged that no-contact results are preferable but noted that speed reduction offers meaningful safety benefits and should be encouraged at higher speeds. The group did not offer a speed at which to require speed reduction versus no contact but encouraged NHTSA to determine an appropriate threshold. Advocates further stated that vehicles which offer a speed reduction benefit should be given credit in some form. Aptiv suggested that full avoidance could be required for more simple conditions (*e.g.*, non-obstructed adult crossing), but not for more difficult ones (*e.g.*, S1d, child obstructed by parked vehicles).

Intel had similar comments regarding test condition S1d, since the child becomes visible only 1.4 seconds pre-collision. The company suggested that NHTSA should offer full credit for a 40 kph (24.9 mph) speed reduction from a 60 kph (37.3 mph) initial test speed for this condition. Further, Intel stated that there is a clear safety benefit in reducing impact speed by 20 kph (12.4 mph) to 30 kph (18.6 mph) at initial test speeds above 40 kph (24.9 mph). Finally, from a logistical standpoint, IDIADA mentioned that pedestrian mannequins can withstand impacts up to 40 kph (24.9 mph) with minimal damage.

Many commenters reiterated the safety benefit that speed reduction can offer, with Toyota, BMW, Bosch, Honda, IIHS, Mercedes-Benz, GM, Rivian, DENSO, Auto Innovators, HATCI, and Subaru highlighting the advantages of speed reduction in their comments. Toyota suggested that NHTSA move away from a pass/fail criterion to a performance-based metric, which the manufacturer suggested may allow NHTSA to reduce the number of test trials required to evaluate vehicles. The automaker also noted that reduction in impact speed would be a suitable measure of performance to distinguish one vehicle from another and corresponds to real-world performance and injury risk. Toyota noted this performance-based metric could also drive improvements in system capabilities. These sentiments were echoed by most of the commenters mentioned above. For example, IIHS asserted if the Agency requires no contact, manufacturers may not equip their vehicles with systems that can offer injury-mitigating speed reduction, or it may lead to more false-positive activations. Tesla also echoed IIHS's concern regarding increased false positive interventions which pose risks of their own as manufacturers attempt to identify applicable situations as early as possible. The manufacturer went on to state that a "fine-tuned" speed reduction requirement strikes a balance between injury mitigation and reduction of false positives in the field. Rivian mentioned that by providing credit for impact speed reduction, NHTSA may encourage manufacturers to invest in technologies over time rather than abandoning them upfront if they cannot achieve the no contact requirement. Many others, including Auto Innovators, Honda, Mercedes-Benz, and Bosch, asserted that any speed reduction should be rewarded with partial credit. Like Rivian, these commenters referred to Euro NCAP's sliding scale method of issuing points



for reduced impact speeds. GM also backed a sliding scale assessment approach based on speed reduction for test speeds over 40 kph (24.9 mph), and HATCI supported assigning partial credit when a vehicle can meet the imposed performance requirements for *only* certain test speeds, as well as when a vehicle fails to meet the performance requirements (*i.e.*, greater than 50 percent speed reduction) at a specific test speed as long as it provides some degree of crash mitigation. HATCI requested that NHTSA harmonize with Euro NCAP's performance evaluation method to the extent possible. DENSO suggested that speed reduction be tested in a range of conditions and referred specifically to evaluations in both Euro NCAP and U.N. Regulation No. 152, "Uniform provisions concerning the approval of motor vehicles with regard to the Advanced Emergency Braking System (AEBS) for M1 and N1 vehicles."

#### Other Suggestions

Two commenters offered an alternative to speed reduction or no-contact: crash avoidance via steering. ZF Group and Intel suggested that the Agency should allow manufacturers to pass scenarios 4a–c by using avoidance maneuvers instead of deceleration. ZF Group noted that ESS systems can support crash avoidance in various longitudinal scenarios.

Two other commenters, Bosch and MEMA, specifically discussed Euro NCAP's method of determining contact and impact speed, indicating their support for the use of a virtual box around the articulated pedestrian mannequin to account for the movement of the mannequin's arms and legs, similar to that specified in Euro NCAP's AEB VRU test protocol. Both groups stated that SV contact or impact speed, if any, should be determined based on this virtual box.

Finally, two individuals responded to this topic with suggestions to take individual vehicle design into account when determining contact or speed reduction criteria. Specifically, these individuals suggested that the Agency take vehicle mass into account since heavier vehicles traveling at a given speed will impart more force to a pedestrian than a lighter vehicle would at the same speed.

#### Response to Comments and Agency Decisions

NHTSA is adopting a "no contact" criterion for NCAP's PAEB performance test requirements. The Agency recognizes that this decision conflicts with the recommendations made by a

number of commenters, many of which supported the benefits of a performance criterion based on speed reduction. Notably, the respondents reasoned that a speed reduction criterion, along with a sliding scale method of assessment like that used by Euro NCAP, would be a more suitable metric to permit performance comparisons among vehicles and encourage improved system capabilities. The Agency, however, agrees with respondents (including as AAA and Adasky) who stated that consumers can more easily understand a pass/fail metric like "no contact" compared to a criterion based on speed reduction. Thus, NHTSA reasons this criterion should simplify vehicle performance evaluations. NHTSA is also of the opinion that complete avoidance is likely the result that most consumers expect from PAEB systems. Further, restricting assignment of PAEB credit to only those vehicles that offer superior system performance will also best assure that future designs offer meaningful improvements.

The Agency does not agree with IIHS that vehicle manufacturers may not equip their vehicles with PAEB systems if NHTSA chooses to adopt a no contact performance requirement. For the model year 2024 light vehicle fleet, 94 percent of vehicles are equipped with standard PAEB systems. Based on this, the probability that manufacturers of these models will remove existing sensors used for pedestrian detection or fail to improve PAEB system capabilities simply because the Agency has adopted a stringent performance requirement for its voluntary consumer information program (*i.e.*, NCAP) seems unlikely. Today's consumers expect technological advancements, whether they be related to infotainment, safety, autonomous driving, or otherwise. Because of this, the Agency also doubts other manufacturers would abandon pursuit of PAEB technology because they are unable to achieve a no contact performance threshold upfront, as Rivian suggested. Instead, as other commenters contended, adoption of a no contact performance metric will likely encourage development of superior systems that provide robust performance in NHTSA's testing, a feat that is reasonably attainable for vehicles in the near future using existing technology. In the Agency's 2021–2022 research, one vehicle model afforded complete crash avoidance in all but seven of the test conditions adopted herein, and four of the failed trials stemmed from failure of the vehicle to respond to the mannequin at 10 kph (6.2 mph).

Several commenters cited the safety benefits inherent to speed reduction as a reason to adopt a speed reduction performance metric. While there are benefits to crash mitigation, there are more profound safety benefits afforded by PAEB systems that offer complete crash avoidance. Specifically, NHTSA agrees with the League that requiring vehicles to avoid contact with pedestrians is the only way to ensure that death or serious injury does not occur. Additionally, it would not be appropriate to adopt a no contact criterion for vehicle-to-vehicle testing (*i.e.*, AEB) and allow contact for vehicle-to-pedestrian testing. A no contact requirement is especially important for pedestrian impacts since the consequences are more likely to be fatal. By promoting development of more robust PAEB systems capable of much higher speed reductions and complete crash avoidance, future systems may effectively address a larger percentage of crashes that cause serious injuries and/or fatalities.

Like the related discussion earlier for AEB, a no contact performance metric has implicit benefits for NHTSA and manufacturer testing as well. As TRC asserted, imposing a no contact criterion in lieu of speed reduction better limits damage to the test vehicle, pedestrian mannequin, and test equipment during testing. Although the Agency acknowledges IDIADA's comments that mannequins may see "minimal damage" at impacts up to 40 kph (24.9 mph), contact between the pedestrian mannequin and test vehicle at low speeds can still cause sensor misalignment or test device degradation. Since such damage can influence test results and generate expensive or time-consuming delays or repairs to ensure repeatable testing, adoption of a no contact performance criterion better ensures the Agency is able to accurately verify manufacturer performance assessments in a timely manner.

A few commenters suggested that a no contact performance criterion was unreasonable for current vehicles to meet, especially at higher test speeds. Others suggested that the Agency could require full avoidance for certain scenarios that they considered simpler (*e.g.*, S1a–c and S1e) but not others (S1d) that they considered more difficult. Some respondents preferred that NHTSA adopt a speed reduction criterion in lieu of no contact and assign partial credit using a sliding scale (similar to Euro NCAP) for mitigation observed at higher initial test speeds. However, as mentioned, several vehicles from the current vehicle fleet were able to avoid contacting the pedestrian

mannequin for most of the test conditions adopted herein. For instance, one vehicle model provided complete avoidance in all crossing path scenarios except for the S1d test condition in both daylight and dark lighting assessments, and two vehicle models afforded complete avoidance in all daylight in-path scenarios. With minor system changes to improve performance, future versions of these vehicles would be able to pass the failed test conditions, thus proving a pass/fail metric is practical. Therefore, the Agency sees no need to condone inferior system performance by allowing contact when it can encourage the design and development of robust PAEB systems instead. As the referenced vehicle models have not received an increased number of false positive reports compared to other models, the Agency further reasons that its recent data also show that a no contact performance metric can be met at higher initial test speeds with no increase in false positive rates, which was a concern expressed by IIHS and Tesla. As mentioned previously for AEB, NHTSA plans to continue to use check marks to assign credit to vehicles that pass the performance test requirements adopted for each ADAS technology until such time as it publishes a notice to finalize a rating system for crash avoidance technologies. Therefore, it cannot award partial credit for speed reductions at this time, as a few commenters requested.

As requested by Bosch and MEMA, NHTSA is adopting the “virtual box” specified in section 3.4.2 of Euro NCAP’s AEB VRU test protocol<sup>262</sup> to clearly define the area that accounts for the movement of the articulating pedestrian mannequin’s arms and legs when determining contact. This virtual box is necessary to enable a fair assessment for all tested vehicles. At this time, however, NHTSA will not permit vehicles to pass NCAP’s PAEB testing by utilizing steering to avoid impact instead of braking for S4a–c, as ZF Group and Intel recommended, or any of the other PAEB test conditions being adopted. Previously-cited Volpe data showed that, for cases where driver avoidance maneuver was known, the driver made no attempt to avoid the crash (e.g., no braking, steering, accelerating) for 76 percent of pedestrian crashes involving fatalities and 70 percent of crashes involving

injuries.<sup>263 264</sup> Accordingly, adopting PAEB test requirements that require the vehicle to automatically brake in the absence of driver input, such as steering, is appropriate. This decision also aligns with that which the Agency has made in response to comments received surrounding evasive steering for NCAP’s AEB tests. As thoroughly discussed previously, such factors as vehicle dynamics, traffic conditions, and traffic participants all influence the safety benefit of a steering avoidance maneuver. Steering, when used as an avoidance maneuver, may not be as safe as in-lane braking, particularly in an urban environment. Furthermore, allowing vehicles to use ESS during NCAP’s PAEB assessments to avoid contact with the pedestrian mannequin would require the Agency to adopt additional tests to assess the functionality of ESS itself to prevent unintended consequences. While this may be considered as part of a later update, it will not be incorporated at this time. The Agency must first study the capabilities and limitations of systems meant to support the driver during these evasive maneuvers prior to incorporating such assessments in its NCAP testing. As such, NCAP will disable ESS systems prior to PAEB testing for those vehicles equipped with such systems, thus ensuring fairness for all vehicles, as only braking performance will be evaluated for all.

Since NHTSA has decided to impose a no-contact performance criterion for NCAP’s PAEB testing, it does not see a need to create more stringent requirements for heavier vehicles compared to lighter ones, as two respondents recommended. Regardless of the vehicle’s mass, all vehicles will be required to completely avoid impact with the pedestrian mannequin. Therefore, the potential difference in the imparting force created at impact for vehicles of different weights is inconsequential.

Finally, regarding Toyota’s comment that adopting a speed reduction performance criterion could reduce the number of trials necessary for vehicle assessments and therefore reduce test burden, the Agency’s planned testing approach, as previously discussed, effectively addresses this concern.

<sup>263</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>264</sup> Driver avoidance maneuver was either unknown or not reported for 24 percent of fatal pedestrian crashes and 52 percent of passenger crashes with injuries.

6. Appropriate Minimum Overall Pass Rate for PAEB

NHTSA proposed to denote vehicles that are equipped with a given ADAS technology and which meet the Agency’s applicable minimum ADAS performance requirements with a check mark instead of a more detailed sliding scale assessment until the publication of the final notice for the new ADAS rating system. NHTSA requested comments on the appropriate number of test conditions a vehicle must pass to be granted a check mark for PAEB, suggesting two-thirds of the total unique combinations of test scenarios and test speeds (i.e., test conditions) as a possible benchmark.

#### Summary of Comments

Several commenters agreed with NHTSA’s proposed benchmark. BMW, Honda, IDIADA, Intel, Uhnder, and Bosch stated that passing results for two-thirds of unique combinations should be required to attain a check mark, but some commenters added caveats to their comments. Specifically, BMW, Honda, and Bosch preferred assessments that took speed reduction into account in some manner. BMW stated this would allow for a more accurate rating of a system and would set the Agency up for easier tuning of rating scales in the future. Honda stated it only agreed to a two-thirds passing rate if each individual scenario/speed combination took speed reduction into account. As mentioned earlier, the automaker reasoned that a no-contact criterion would be too stringent and not give credit to products that offer safety benefits. In a similar vein, Bosch suggested that any amount of mitigation should be rewarded and that vehicles should receive partial credit even if they do not meet the two-thirds minimum for a check mark.

Auto Innovators did not support the two-thirds minimum for credit. However, like those mentioned previously, the group suggested that vehicles offering speed reduction should be given credit since they still provide a “reasonable safety benefit.” Auto Innovators also recommended that speed reduction should be used to determine pass/fail criteria, or alternatively, a sliding scale should be used as part of an overall PAEB rating. Adasky also referred to a rating system in its response to this topic, mentioning that the Euro NCAP method of weighting each category according to real-world factors would be preferred since some tests will have a larger target population than others. Rivian also mentioned it preferred a points-based

<sup>262</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB/LSS VRU systems, Version 4.5*.

PAEB rating system requiring a minimum number of points to pass. However, Rivian stated if NHTSA were to move forward with a scenario-based approach, the pass rate should be determined based on the complexity of each test. The automaker also suggested that NHTSA should require a greater passing percentage for simpler scenarios and a smaller passing percentage for more complicated or difficult scenarios.

Citing the variety of real-world encounters that occur between vehicles and VRUs, CAS stated the pass rate for NHTSA's PAEB system testing should be 100 percent. However, the group mentioned that NHTSA could enhance the program by adding optional PAEB tests or by assessing test performance metrics like distance between the stopped vehicle and the test target. CAS explained this would allow consumers to identify strengths in vehicle performance rather than lowering the bar to give credit to vehicles that cannot pass all of NHTSA's tests.

Three other groups (Toyota, Advocates, and GM) commented on this topic but did not provide specific acceptable pass rates. As mentioned earlier, Toyota urged NHTSA to use performance-based criteria wherever possible, instead of pass/fail criteria. Advocates suggested that the Agency set stringent pass/fail criteria given that the variety of on-road conditions found in the field are not always represented in the ideal testing environment. Finally, GM noted that NHTSA should strike a balance between current PAEB system limitations and criteria informed by real-world pedestrian crash data to maximize potential safety benefit.

#### Response to Comments and Agency Decisions

Since the Agency has opted to impose a no contact performance criterion for PAEB testing, it will not adopt a rating system based on speed reduction, as many commenters requested. Although BMW contended that such a rating system would be "more accurate" and allow NHTSA to make changes more easily to reflect future updates, the Agency reasons, as previously mentioned, that an assessment based on no contact can be more easily understood by consumers. Until a crash avoidance rating system is developed and finalized, those vehicles receiving a check mark will have met NHTSA's minimum level of performance, and those that do not display a check mark will have not.

In the same vein, NHTSA has decided to adopt a pass rate of 100 percent for NCAP's PAEB testing instead of the suggested two-thirds (*i.e.*, 67 percent)

benchmark. This decision aligns with the Agency's choice for AEB testing. PAEB systems must achieve passing results (*i.e.*, no SV-to-pedestrian mannequin contact) in all adopted test conditions (*i.e.*, 24 tests in daylight conditions and 22 in dark lighting conditions for S1—S1a, S1b, S1d, S1e, spanning speeds from 10 to 60 kph (6.2 to 37.3 mph),<sup>265</sup> and 12 daylight and darkness test conditions (*i.e.*, 24 total) for scenario S4—S4a and S4c, spanning speeds from 10 to 60 kph (6.2 to 37.3 mph)) to receive credit for PAEB technology for each lighting condition. By requiring a 100 percent pass rate, the Agency concludes consumers will be able to quickly recognize which vehicles offer robust, repeatable PAEB system performance.

At this time, as mentioned, the Agency has decided to assign credit separately for PAEB system performance in daylight and dark lighting conditions; vehicles will not have to achieve passing performance for all 70 tests in daylight and dark lighting conditions collectively to obtain credit for PAEB overall. A vehicle must pass the 36 required test conditions in daylight to obtain credit for PAEB performance in daylight and must separately pass the 34 prescribed test conditions in dark lighting conditions to obtain credit for PAEB performance in darkness. The Agency has decided to evaluate PAEB performance in daylight and dark lighting conditions separately because no one vehicle tested as part of NHTSA's model year 2021–2022 research passed all test conditions (*i.e.*, did not contact the pedestrian mannequin) for both daylight and dark lighting conditions. However, as mentioned, one vehicle exhibited nearly passing performance for each of the two lighting conditions.<sup>266</sup>

By assigning credit separately for each of the two lighting conditions, the Agency's planned approach offers a compromise between the pass rate endorsed by several commenters (*i.e.*, two-thirds or 67 percent, albeit often with a speed reduction performance criterion instead of no contact) compared to that suggested by CAS (*i.e.*, 100 percent) for the proposed 70 unique PAEB test combinations. A vehicle that contacts the pedestrian mannequin for any of the required 34 PAEB test

conditions when tested in the dark will not receive credit for PAEB performance in darkness; however, that same vehicle may still receive credit for PAEB performance in daylight if it offers complete crash avoidance for the required 36 PAEB test conditions when tested in the daylight. A vehicle could technically fail all 34 test conditions required for testing in darkness and still receive credit for PAEB in daylight, thus permitting an overall effective PAEB pass rate of just over 50 percent. Therefore, this approach aligns with Bosch's request to award partial credit for those vehicles that are not able to meet a two-thirds pass rate overall. It also provides additional useful information to certain groups of consumers that may not have otherwise been conveyed if the Agency had chosen to instead adopt a pass rate of 100 percent for PAEB testing in both daylight and dark lighting, collectively. For instance, certain groups of consumers that drive primarily at night may find separate lighting-specific PAEB ratings particularly helpful. Likewise, consumers that rarely drive at night may not be deterred from purchasing a vehicle that does not perform well during NCAP's PAEB assessments in darkness. This decision also aligns with CAS's comment that the Agency should reward superior performance instead of lowering the bar so that more vehicles may receive credit. Although NHTSA has decided to require passing performance in only one lighting condition for this NCAP upgrade to receive partial credit for PAEB, this approach currently seems challenging for most vehicles given the results of its most recent PAEB research, even when considering a reduction in test speed for the S1d in dark lighting condition.

Several commenters suggested alternative pass rates. Rivian opined that, if NHTSA adopted a pass-fail performance threshold, the pass rate for PAEB systems should be based on test complexity (*i.e.*, a vehicle should be required to achieve passing performance for a greater percentage of test conditions for simpler scenarios compared to more complicated/difficult scenarios). Further, Adasky recommended that target populations for real-world crashes should dictate the weight assigned to each test scenario/condition. GM also suggested that real-world crash data should be considered, in addition to current system limitations. Although there is merit to these suggestions, the Agency agrees with Advocates that it should establish stringent pass/fail criteria to ensure that

<sup>265</sup> S1d will be assessed in the nighttime lighting condition from 10 to 40 kph (6.2 to 24.9 mph).

<sup>266</sup> For daylight conditions, the aforementioned vehicle failed only S1d at test speeds greater than 50 kph (31.1 mph) and S4a and c at 10 kph (6.2 mph). Similarly, for dark conditions, the vehicle failed only the S1d condition at test speeds greater than 40 kph (24.9 mph) and S4a and c at 10 kph (6.2 mph).

PAEB systems are robust and perform well during variations of the Agency's tested conditions, since the situations encountered during real-world driving will not always mirror the ideal testing environment. As such, only a 100 percent pass rate for each lighting condition ensures the development of optimal PAEB system designs. While capabilities may be limited for many current PAEB systems, as GM suggested, the results for one vehicle in the Agency's research testing exemplified system potential for future system iterations.

Finally, at this time, the Agency will not adopt additional optional PAEB tests for extra credit, as CAS requested. NHTSA is considering the inclusion of other PAEB test scenarios in NCAP at some point in the future, such as turning scenarios and scenarios for bicyclists. These potential scenarios are discussed in a later PAEB section of this notice. However, the Agency is not considering program additions that align with CAS' second request—adding performance assessments based on the distance between the stopped vehicle and the test target. Because manufacturers must design PAEB systems that perform well in *all* real-world conditions, not just those assessed by NHTSA, the finalized NCAP test conditions should not be unduly prescriptive. Whether a vehicle stops several inches or several feet behind a pedestrian mannequin when tested seems irrelevant considering the outcome (*i.e.*, complete crash avoidance) is the same. The Agency prefers to encourage manufacturers to expend additional resources into perfecting performance in all PAEB test conditions, both daylight and dark lighting conditions, as well as for the wide variety of other crash scenarios/conditions that may occur during real-world driving.

#### 7. PAEB Warning, Including Signal Modality and Timing

NHTSA is adopting the same FCW modalities outlined for NCAP's AEB test conditions for the program's PAEB test conditions. Specifically, a vehicle must present a forward collision warning to the vehicle operator via two sensory modalities—auditory and visual—to receive credit in each of NCAP's PAEB tests. Similar to AEB, while the Agency is requiring an auditory/visual FCW, a vehicle may additionally present a haptic signal to warn of an impending collision without penalty. Adopting the same bimodal alert strategy for PAEB as NHTSA adopted for AEB is appropriate since standardization should ensure consumer familiarity and limit

confusion. Drivers will be more likely to associate a dual-modality FCW with any sort of crash-imminent forward collision and, as such, should be more likely to respond with a timely and evasive action to mitigate or, if possible, avoid a crash altogether. This is especially important for crash-imminent situations involving pedestrians since they have no intrinsic protection.

While the Agency will require the same dual-modality alert type for NCAP's PAEB tests as it's requiring for the program's AEB tests, it is making a distinction for the timing of the FCW. For PAEB testing, the FCW need not be issued prior to the onset of automatic braking, like was specified for AEB; the warning may be issued at any time before or during the automatic braking event. The Agency is making this distinction for PAEB because it recognizes the dynamics of some pedestrian crashes inherently result in a quick succession of events. For these crashes, it may be problematic to require the warning be followed sequentially by automatic braking. This was evidenced in the Agency's 2020 research testing, particularly for certain test conditions, such as S1d. The Agency's data showed automatic braking occurred nearly concurrent with, or prior to, the FCW for several of the Agency's test vehicles.<sup>267</sup> Yet, many of these vehicles avoided contact with the pedestrian mannequin. Therefore, NHTSA hesitates to require sequential warning and braking functionality in order to not hinder system response time or alter system effectiveness. The Agency also does not want to encourage requirements that would drive forward collision warnings to be issued too early in response to potential pedestrian impacts since pedestrian movements can be unpredictable. Early warnings may have unintended consequences and lead to an increase in false positive activations. While FCWs issued prior to the onset of automatic braking are most desirable since they will serve to warn the driver of an impending crash and solicit a response, those issued after the onset of automatic braking can also be beneficial since they should serve to

inform the driver that automatic braking is ongoing.

During NCAP's PAEB tests, NHTSA will release the SV's accelerator (at any rate) within 500 ms after (1) issuance of the two required FCW signals (*i.e.*, auditory and visual), or (2) the onset of automatic braking (as defined by the instant SV deceleration reaches at least 0.15g), whichever is sooner.<sup>268</sup> In either instance, the vehicle can pass a test trial if it does not make contact with the pedestrian mannequin and both signals for the bimodal alert are issued at some point prior to or during the braking event. While neither modality signal will be required prior to the onset of PAEB braking, both will be required prior to the end of the test for a vehicle to receive a passing result. If one or both of the signals required for the dual-modality FCW are *not* issued and the vehicle's PAEB system does *not* offer any automatic braking (as defined by the instant SV deceleration reaches at least 0.15g), in a PAEB test, release of the SV accelerator pedal will not be required prior to impact with the pedestrian mannequin and the vehicle will fail the trial run. The driver (or throttle robot) will modulate the accelerator to maintain a constant speed until the end of the test occurs.

It is reasonable to require that both FCW signals be issued before the end of the event in the Agency's PAEB tests because, as explained earlier, one of the two FCW signals which comprise a bimodal alert often serves as a secondary, confirmatory indication that explains to the driver what the primary signal is intended to communicate (*i.e.*, a forward crash-imminent situation). Therefore, it seems prudent to assume these signals would be provided nearly concurrently, particularly given the dynamics of many pedestrian crashes and the limited time for intervention.

The Agency is aligning other decisions for PAEB with those made for NCAP's AEB tests with respect to the FCW. NHTSA is not prescribing additional requirements for visual or auditory warnings (*e.g.*, color, location, decibel level, type, etc.) and it is not standardizing PAEB warnings at this time.

#### 8. User-Configurable Settings for PAEB Tests

In its March 2022 RFC notice, the Agency proposed to test the middle (or next latest) FCW and PAEB system settings when assessing FCW and PAEB

<sup>267</sup> As an example, when the S1d test condition was conducted for a model year 2020 Subaru Outback traveling at 16 kph, the onset of the FCW occurred at 0.92 sec. (FCW on time history plot) and automatic braking occurred essentially at the same time, at 0.91 sec. (PAEB on time history plot). "Final Report of Pedestrian Automatic Emergency Braking System Research Testing of a 2020 Subaru Outback Premium/LDD," <https://www.regulations.gov/document/NHTSA-2021-0002-0002>. See: Figure D66. Time History for PAEB Run 180, S1d, Daytime, 16 kph.

<sup>268</sup> The accelerator pedal will be released in a timely manner in either instance so as to not interfere with, and potentially override, the PAEB system, as this could affect test repeatability.

as part of NCAP's PAEB tests for those vehicles that offer multiple timing adjustment settings.

Since NHTSA has decided to evaluate FCW in tandem with PAEB (essentially, the SV must issue the required FCW signals at some point during the braking event), and the vehicle must not contact the pedestrian mannequin during testing, the tested FCW and PAEB system settings are important test variables. Effectively, to perform well in the Agency's PAEB evaluations, the vehicle must issue the FCW and brake automatically with sufficient time to allow the vehicle to avoid contacting the POV. As it decided for NCAP's AEB tests, the Agency will set the timing for the FCW and PAEB intervention to the middle (or next latest) setting (if adjustable) during its PAEB evaluations, like that previously shown in Figure 2. For FCW or PAEB systems having only two settings, the Agency will select the later of the two settings and this test setting will meet NHTSA's middle (or next latest) FCW/PAEB setting requirement. These system setting configurations align with Euro NCAP's AEB/LSS VRU systems test protocol. By integrating FCW assessments and adopting the middle (or next latest) system settings, NHTSA expects that vehicle manufacturers will inherently strive to limit nuisance alerts and PAEB activations during real-world driving for the timing settings preferred by most drivers while also performing well in NCAP's PAEB tests at this preferred setting.

NHTSA is also imposing requirements for other system settings during NCAP's PAEB tests. For vehicles that have an ESC off switch, NHTSA will keep ESC engaged for the duration of the test. For vehicles offering regenerative braking, the Agency will select the "off" setting, or the setting that provides the lowest deceleration when the accelerator pedal is fully released for those vehicles offering multiple regenerative braking settings (*e.g.*, less aggressive, nominal, more aggressive). This decision, which was also made for NCAP's AEB tests, should promote fairness and improve test execution, and thus test repeatability. NHTSA will also select the "off" setting for vehicles equipped with a one pedal operation mode in instances where those vehicles offer selectable settings for modes of operation. If one pedal operation cannot be disabled (*i.e.*, regenerative braking is always enabled and one pedal operation cannot be switched "off"), the vehicle will be tested with the moderate deceleration level ensuing from accelerator pedal release. For these vehicles, like all other vehicles, the

accelerator pedal will still be fully released within 500 ms after the FCW is presented or automatic braking (as defined earlier) occurs. In line with these decisions (and that made previously for NCAP's AEB tests), propulsion batteries will be charged at 80 percent or higher capacity during PAEB testing for electric vehicles, as performing assessments with a higher SOC should limit regenerative braking, and thus vehicle deceleration, when the accelerator is fully released.

To receive credit for PAEB, forward collision warning and pedestrian automatic emergency braking technologies (*i.e.*, FCW and PAEB systems) must appear 'Default ON' during each ignition/key cycle. While the Agency is not prohibiting a disabling function for these technologies in its NCAP evaluation, it does not expect that the testing requirements imposed herein should result in reduced consumer satisfaction. Instead, NHTSA expects drivers will adjust their vehicle's FCW and PAEB system settings to meet their personal preferences instead of disengaging the system altogether.

#### 9. Articulated Pedestrian Mannequins

NHTSA proposed, and sought comment on, utilizing modern mannequins with moving legs instead of the posable pedestrian mannequins specified in its 2019 PAEB test procedure. The Agency explained that the articulating pedestrian mannequins are more representative of walking pedestrians and expected that more realistic targets would encourage development of PAEB systems that detect, classify, and respond to real-world pedestrians more effectively and accurately. NHTSA's adoption of the articulating mannequin would also harmonize with Euro NCAP and IIHS, fulfilling the BIL's mandate that NHTSA "benefit from harmonization with third-party safety rating programs."

#### Summary of Comments

##### Adoption of the Articulating Mannequin

Several commenters responding to the December 2015 notice favored the adoption of the articulating pedestrian mannequin, and most of the comments received in response to the March 2022 also favored its adoption and use in PAEB testing. Those in favor included TRC, MEMA, CAS, GM, The League, BMW, Bosch, FCA, Honda, Toyota, AAA, ASC, CCD Transportation Task Force, Rivian, Auto Innovators, Intel, HATCI, ZF Group, IDIADA, and one individual. Most of these commenters stated that articulating pedestrian

mannequins are more representative of pedestrian gait and should be used. TRC noted that articulating pedestrian mannequins are the industry standard, a sentiment echoed by GM, BMW, FCA, Toyota, ASC, Auto Innovators, Intel, The League, and HATCI. GM added that "the only means of measuring the potential added capabilities of [camera/radar] fusion systems, especially in low-light conditions, is to use the articulated pedestrian mannequin." Bosch, Auto Innovators, and HATCI noted that articulating pedestrian mannequins are preferable due to their Doppler spread and radar reflectivity characteristics and stated the performance measured with the static mannequins may not translate to real-world benefit. IDIADA also specified that radar-based systems monitor Doppler frequencies from leg movement. Some groups cited PAEB systems' algorithms (AAA) and artificial intelligence (FCA) as reason to utilize articulated mannequins. Honda added the ability to quickly identify a pedestrian and react accordingly is valuable, especially in situations with limited visibility or short reveal times. Intel agreed it is necessary for a PAEB system to identify pedestrians quickly and accurately. Rivian offered that accurate identification of pedestrians may reduce false positive activations. Finally, the League stated there is no benefit to adopting an unharmonized, fixed mannequin that is less lifelike.

Though both BMW and Auto Innovators agreed that articulating pedestrian mannequins should be used in PAEB testing, they further requested that NHTSA use a black cover for the center tube for any PAEB assessments in dark lighting conditions the Agency may perform. The groups reasoned this change will further improve the mannequin's resemblance to an actual pedestrian in the dark. TRC also favored adoption of the articulating mannequins but requested detailed information on acceptable pedestrian target movement systems. The laboratory specifically noted there are currently belt and robotic platform systems available.

Other commenters stated it is premature to include the articulated mannequins in NCAP and that other VRUs should be taken into account. Lidar Coalition, Velodyne, and two individuals urged NHTSA to account for all road users who are not walking, such as those in a wheelchair or scooter; those standing, pausing, or bending down; or those wearing clothing that obscures ambulation, such as a dress or robe. These commenters raised concern that PAEB systems may begin to over rely on leg movement as a VRU indicator. CCD Transportation Task

Force agreed that NHTSA should consider a variety of VRUs when choosing targets, adding that other groups may not be accurately represented by the pedestrian mannequin, such as women, shorter adults, and those with darker skin tones. Lidar Coalition, Advocates, and Velodyne stated that more data is needed to ensure the use of the articulating pedestrian mannequin will not have an adverse effect on these, or any other, VRU populations.

#### Response to Comments and Agency Decisions

The Agency is adopting the 4activePA Adult and 4activePA Child pedestrian mannequins for NCAP testing.<sup>269</sup> Commenters overwhelmingly favored the adoption of articulating, rather than static, mannequins for PAEB testing. In support of this stance, commenters cited harmonization, radar reflectivity characteristics, and realistic, lifelike movement, among other reasons. These pedestrian mannequins, used in NHTSA's research testing and utilized by Euro NCAP as part of testing conducted per its AEB/LSS VRU Systems test protocol,<sup>270</sup> provide an accurate representation of real-life pedestrians, as commenters requested. The 4activePA Adult and Child mannequins have physical dimensions (*i.e.*, size and shape) representative of a 50th percentile adult male and 7-year-old child, respectively, and are designed to produce a realistic response from radar, lidar, and camera sensors. Both mannequins have features representing hair, facial skin, hands, a long-sleeve black shirt, long blue pants, and black shoes. They also have articulating legs synchronized to the forward motion of the mannequin, replicate a human-like gait, and produce a realistic Micro Doppler effect. Unlike the legs of the pedestrian mannequin, the arms of the mannequins do not move, but are posable, and will be posed during testing. The 4activePA mannequins are also appropriate for NCAP testing because they are lightweight with a soft exterior to prevent vehicle damage upon impact.

NHTSA will utilize the 4activePA Adult mannequin for all PAEB test conditions that specify an adult test mannequin—S1a, S1b, S1e, S4a, and S4c; the 4activePA Child mannequin will be utilized for the S1d PAEB test

condition. While the Agency recognizes it could utilize a posable pedestrian mannequin for the S4a test condition since the mannequin is stationary in those tests, NHTSA is adopting instead the articulating mannequin for S4a testing to promote test efficiency. As described later in this section, the 4activePA Adult mannequin will be confined to a standing posture position, with the legs at rest (*i.e.*, static), for S4a tests. For all other test scenarios prescribing the adult mannequin (*i.e.*, S1a, S1b, S1e, and S4c), the legs of the mannequin will articulate to simulate a walking or running motion, as appropriate. Similarly, for the S1d scenario, the legs of the child mannequin will be configured to articulate to simulate a running child.

Since PAEB systems currently on the market may utilize camera-, radar-, and/or lidar-based sensors (or some combination thereof) to provide automatic emergency braking and prevent impact with pedestrians, the pedestrian test mannequins adopted for NCAP's PAEB testing must meet certain specifications to ensure the SV recognizes the targets, similar to real-world pedestrians, thus offering real-world benefit. These specifications will also help assure test repeatability and reproducibility. Accordingly, NHTSA is adopting in its test procedures, certain specifications provided in several ISO standards for color (for camera-based sensors), physical dimensions (for camera- and lidar-based sensors), infrared reflectivity (for lidar-based sensors), and radar cross section and leg articulation (for radar-based sensors). The ISO standards are appropriate because they contain a large body of research testing to support the test devices. In most respects, these specifications also harmonize with those outlined by Euro NCAP in its "Articulated Pedestrian Target Specifications" document.<sup>271</sup> The 4activePA pedestrian mannequins, as manufactured, meet these specifications.

First, the Agency is referencing many, but not all, of the specifications in ISO 19206–2:2018, "Road vehicles—Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 2: Requirements for pedestrian targets." This standard addresses specifications for a test mannequin, including basic postures and body

dimensions as well as leg articulation, infrared, and radar properties.

Second, NHTSA is referencing sections of ISO 19206–4:2020, "Road vehicles—Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 4: Requirements for bicyclists targets" in NCAP's PAEB test procedures. This standard describes specifications for bicycle test devices representative of adult and child sizes. Although NHTSA will not use a bicycle test device during NCAP's PAEB testing at this time, this standard is being referenced solely because it contains sufficient specifications for color (*i.e.*, the color of the mannequins' hair, clothes, skin, etc.) for the pedestrian test mannequins.

NHTSA is also referencing in NCAP's PAEB test procedures sections of ISO 19206–3:2021, "Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 3: Requirements for passenger vehicle 3D targets." This document provides measurement procedures for assessing radar cross-section.

Lastly, NHTSA is referencing ISO 3668:2017, "Paints and varnishes—Visual comparison of colour of paints," in NCAP's PAEB test procedures. This standard, which specifies a method to allow the visual comparison of the color of paints against a standard, will ensure the color of the pedestrian mannequins' hair, torso, arms, and feet are black, the color of the legs is blue, etc., as prescribed by ISO 19206–4:2020.

In addition to these requirements, the Agency will also require the placement of a black cover over the pedestrian mannequins' center vertical pole during PAEB assessments in dark lighting conditions, as Auto Innovators and BMW requested. NHTSA agrees that this should further improve the mannequin's resemblance to a real pedestrian. This modification should minimize contrast with the background and limit reflectivity to light sources (*e.g.*, headlamps) during testing in dark lighting conditions. The radar reflectivity requirements prescribed in ISO 19206–2:2018 must be met both with and without the black cover present on the pole.

Similar to its decision for the GVT, NHTSA is not adopting separate specifications for the pedestrian mannequin carrier system. The carrier system controls the speed (where applicable) and position (*e.g.*, lateral overlap relative to the front of the SV and desired contact points) of the pedestrian test device. Since these variables will be subject to

<sup>269</sup> Both pedestrian mannequins are manufactured by 4activeSystems.

<sup>270</sup> In Euro NCAP's AEB/LSS VRU Systems test protocol, the adult pedestrian mannequin is termed the Euro NCAP Pedestrian Target (EPTa) and the child pedestrian mannequin is termed the Euro NCAP Child Target (EPTc).

<sup>271</sup> European Automobile Manufacturers' Association (ACEA), February 2016, "Articulated Pedestrian Target Specification Document," Version 1.0, available at <https://www.acea.auto/publication/articulated-pedestrian-target-acea-specifications/>.

specifications and tolerances prescribed for the pedestrian mannequins for each test scenario, NHTSA does not see a substantial need to specify which carrier system must be used to achieve the appropriate mannequin kinematics during testing. Further, the pedestrian mannequins will be assessed while mounted on the carrier system per ISO 19206-2:2018, thus assuring the carrier system has a minimal radar cross-section and minimal optical features based on the test environment. The Agency also notes that, at this time, it anticipates using the 4activeSB robotic platform for NCAP testing.

While NHTSA acknowledges the stance of a few commenters that the Agency should consider adding VRUs with different positioning/posture or clothing to not overly rely on leg movement to prompt system intervention, or different dimensions or skin tones to offer equivalent protection for all pedestrians, the Agency concludes the 4activa-PA Adult and Child pedestrian mannequins are acceptable for this NCAP upgrade. Although the Agency reasons it is important for PAEB performance requirements to ensure real-world safety benefits across a broad spectrum of pedestrian crash scenarios, it also recognizes that, for practical reasons, performance requirements cannot address every pedestrian crash scenario. Notwithstanding, the Agency is adopting test scenarios representing a walking, running, and standing adult. Further, NHTSA is incorporating a test scenario designed to simulate real-world pedestrian impacts involving children. Given this, the Agency expects future PAEB systems will effectively address pedestrians of various sizes and not rely solely on leg articulation for functionality. NHTSA will also continue to monitor real-world pedestrian crash data to ensure the adopted mannequins are reasonably sufficient to address the crash risks for pedestrians of other sizes, such as small adult women, and those having alternative postures. This data analysis should also allow the Agency to determine whether additional VRU surrogates or scenarios should be added to the Agency's PAEB test matrix in the future as representative test devices become available and research proves such devices to be robust and reliable during testing. Further, as discussed later in this notice, the Agency is considering adding additional test scenarios for bicyclists, motorcyclists, etc. in future updates to NCAP. NHTSA is also conducting research to assess the affect that variations in skin tone and/or clothing may have on PAEB system

performance. NHTSA will compare these results to the referenced ISO standard specifications and may consider additions or modifications to improve the relevance of the Agency's PAEB tests once the research is complete.

#### 10. Additional Test Procedure Refinements, Clarifications, and Feedback

NHTSA requested comments on any areas of the proposed PAEB test procedure that needed clarification or further refinement before the Agency adopted it for use in NCAP. Various comments were received.

##### Summary of Comments

##### Publication of Draft Test Procedures

Auto Innovators noted the draft test procedures have not been republished with changes suggested in response to a 2019 RFC notice.<sup>272</sup> The group recommended that NHTSA republish the latest version of the procedures for comment and review.

##### Pedestrian Mannequin Target

Some commenters stated the characteristics of pedestrian mannequin target movement, like speed and acceleration of the mannequin as it moves across the test site, should be addressed. One individual stated the maximum pedestrian speed did not represent runners, as they may approach a vehicle's path more quickly. This commenter also noted the Agency could factor in safety for the variety of speeds at which VRUs travel by also varying the target speed. One individual commenter noted that seniors tend to move at a slower pace and are less likely to recover from injuries sustained in a vehicle impact, stating that seniors over the age of 65 are 35 percent more likely to be killed as pedestrians. NSC stated that older adults (those 65 and older) account for 20 percent of pedestrian fatalities.

For target acceleration, vehicle manufacturers expressed logistical concerns. Honda, Toyota, and Auto Innovators requested the Agency ensure the pedestrian mannequin start and acceleration distances are adjusted to ensure the mannequins move smoothly across the surface. Commenters noted if the pedestrian mannequin is subject to sudden accelerations, it may "shake," and its location and speed may not be detected accurately by PAEB systems. Toyota provided data to demonstrate that for S1b and S1e, a greater mannequin acceleration distance is needed to achieve a stable velocity.

<sup>272</sup> NHTSA-2019-0102-0011.

Honda recommended S1a-d test conditions should have "PTM Start Distance" increased from 3.5 m to 4.0 m and "PTM Acceleration Distance" increased from 0.5 m to 1.0 m. For test condition S1e, the manufacturer suggested that "PTM Start Distance" should be increased from 5.5 m to 6.0 m and "PTM Acceleration Distance" should be increased from 1.0 m to 1.5 m. Honda and Auto Innovators mentioned that this has already been addressed in the Euro NCAP and JNCAP test procedures. Auto Innovators added that pedestrian mannequin motion tolerances can accumulate, resulting in the target's final location being farther away from its intended location. Accordingly, the group stated that the pedestrian mannequin motion tolerances should be reduced to ensure test repeatability, stating that if the highest test speed of 60 kph (37.3 mph) is adopted, tolerances should align with Euro NCAP's. IDIADA and Honda also recommended that NHTSA ensure the pedestrian and vehicle travel paths intersect at the intended location. Regarding false positive testing, GM requested clarity on deceleration distance in test condition S1f.

Auto Innovators stated that controllability of the freeboard should be further investigated. For in-path test conditions S4a-c, Auto Innovators stated that NHTSA should ensure the pedestrian mannequin is properly mounted on the pole if the Agency intends to test conditions with the pedestrian mannequin facing both away from and towards the SV.

##### Subject Vehicle

Regarding the movement of the SV, Honda suggested that the Agency use an accelerator/brake robot to increase the robustness of the test procedure. The automaker noted that changes like these would uphold NCAP's credibility and ensure well-defined safety performance information is gathered should the Agency collect self-reported data. Auto Innovators agreed, requesting that the SV be controlled by a steering robot.

For PAEB testing in dark conditions, TRC commented that the "aimed location" of the SV's headlamps may need to be documented, further noting that IIHS currently records headlight aim for some of its work. Advocates stated the Agency should verify that the advanced headlighting system operates automatically. Additionally, Intel and ZF Group suggested the test should allow sufficient time for the headlighting systems to engage and switch to upper beams before the test begins (or at least 4 seconds TTC).



Finally, SEMA stated that NHTSA should also test modified vehicles, defining modified as “lifted and lowered.” SEMA also requested that data, including mechanical and electronic tolerances, be published by the OEM so that modified vehicles’ PAEB systems may achieve the same performance as a non-modified vehicle’s performance. The group stated that such vehicle modifications are legal and should be accounted for.

#### Scenario and Test Condition Specifications

Auto Innovators and GM stressed the importance of eliminating other artificial light sources that do not represent on-road conditions. The groups suggested the presence of such light may interfere with the intended operation of the PAEB system. If the artificial light sources cannot be removed, GM suggested that tests take place in the opposing direction, or, if this is not possible, vehicle high beams should be engaged to replicate the expected driving conditions. These commenters also requested alterations specific to certain test conditions. Auto Innovators stated the Agency should align the parked obstacle vehicle location in scenario S1d to the Euro NCAP condition, and GM requested clarity on definitions for pass/fail criteria for both false positive (S1f and S1g) conditions.

Velodyne expressed concerns that the current test procedures do not include enough of the elements of real-world driving to effectively evaluate a vehicle’s true PAEB performance. The company listed “shadows, unclear or unmarked lane lines or road edges, curved roadways, irregular route geometries, [ . . . ] irregularities in the roadway, cluttered or low contrast scenes, overhead objects, or irregular object shapes” as potential confounding factors. Velodyne went on to state the shortcomings of cameras and radar in effectively informing PAEB systems, noting that adding more cameras and radar sensors will not be enough to address this issue. Velodyne suggested lidar will be necessary to address challenging real-world conditions such as those mentioned above.

#### Response to Comments and Agency Decisions

##### Publication of Draft Test Procedures

NHTSA acknowledges the prior receipt of comments from Auto Innovators detailing feedback regarding the Agency’s draft PAEB test procedures. The Agency has considered all comments received and has made

changes to its PAEB test procedures accordingly. These revised PAEB test procedures are being published and docketed along with this final decision notice for use in NCAP testing.

##### Pedestrian Mannequin Target

The Agency is adopting the pedestrian speeds proposed in the March 2022 RFC notice. NHTSA acknowledges requests by respondents to make changes to the characteristics of the pedestrian mannequin target, including accounting for different pedestrian speeds based on walking or running speed. However, because the Agency must be mindful of the test burden created by adding additional test conditions, it is choosing to keep the proposed pedestrian speeds at this time. NHTSA notes the pedestrian mannequin speeds chosen for NCAP’s PAEB test conditions align with those selected by Euro NCAP, and thus seem reasonable for inclusion in U.S. NCAP. Given the variations in test conditions adopted, including those for the pedestrian mannequin speed (*i.e.*, walking, running, and stationary), the Agency expects that the prescribed pedestrian mannequin target speeds will mitigate crashes for pedestrians travelling faster or slower than the target speed. Real-world pedestrian crashes that PAEB does not completely prevent may also be further mitigated by NCAP’s forthcoming crashworthiness pedestrian protection testing program.<sup>273</sup>

Further, NHTSA shares similar concerns as those expressed by commenters relating to pedestrian target acceleration, such as potential mannequin instability caused by inadequate starting and acceleration distances already observed and addressed by other global testing entities. Specifically, the Agency has observed that when the pedestrian mannequin begins to move, the mannequin tends to sway and oscillate for some time before gaining stability. Additionally, the Agency has found that sudden acceleration results in inconsistent pedestrian mannequin motion. Based on these concerns and observations, NHTSA will adopt amended starting and acceleration distances for its NCAP PAEB test procedures. For test conditions S1a–d, the pedestrian mannequin’s starting distance will be  $4.0 \pm 0.1$  m ( $13.1 \pm 0.3$  ft.) from the SV’s intended travel path. For test condition S1e, the pedestrian mannequin’s starting distance will be  $6.0 \pm 0.1$  m ( $19.7 \pm 0.3$  ft.) from the

intended travel path. For all conditions, the pedestrian mannequin’s acceleration distance will be 1.5 m (4.9 ft.). These changes should increase repeatability and accuracy of PAEB system testing. Apart from the crossing path acceleration distance specification, these specifications also promote harmonization, as they are aligned with Euro NCAP’s pedestrian mannequin starting and acceleration distances. NHTSA will also provide additional clarity on the deceleration distance for condition S1f if and when it chooses to adopt this test condition for NCAP.

NHTSA will adopt a pedestrian mannequin target speed tolerance of 0.4 kph ( $\pm 0.2$  mph) for pedestrian mannequin motion tolerance. Despite commenter concern regarding tolerances being too wide and the pedestrian target’s final location being inconsistent, particularly at higher speeds, the Agency’s experience through its research testing to date is that this amount of tolerance is consistently achievable and provides a high-level of repeatability.

Finally, because the Agency plans to adopt only the S4a and S4c test conditions, which both specify that the dummy face away from the vehicle instead of towards the vehicle as is required for the S4b condition, there is a decreased likelihood that the pedestrian mannequin will be improperly installed on the pole since there will be no need to switch the orientation of the pole during testing. Having said this, test laboratories will be expected to inspect their equipment prior to performing evaluations and to verify that the test setup is valid.

##### Subject Vehicle

Repeatability of the SV’s movements throughout the testing series was of concern to some commenters. A few suggested that either accelerator/brake (Honda) or steering (Auto Innovators) robots should be utilized. As with the AEB tests described earlier, steering and throttle requirements are specified; a test will be considered valid if these requirements are met. Thus, the Agency declines to require the use of throttle or steering robots at this time to conduct testing according to NCAP protocol. However, they may be used by laboratories or manufacturers if desired.

NHTSA agrees with Intel and ZF Group’s concern that the PAEB testing procedure for testing in dark conditions should allow time for any advanced lighting feature(s) that cannot be disabled to engage prior to the official start of the test. NHTSA will ensure that advanced lighting feature(s) engage automatically, if appropriate, and will

<sup>273</sup> 88 FR 34366. The final decision notice for the NCAP crashworthiness pedestrian protection testing program is forthcoming.

allow sufficient time prior to the vehicle's encounter with the pedestrian mannequin for the automatic engagement to occur. It is also reasonable to measure vehicles' headlamp aim angles and record these prior to testing, as TRC requested. However, the Agency will not alter the aim of vehicles' headlamps to align with manufacturer instructions prior to conducting PAEB tests. NHTSA asserts vehicle headlamps should be tested as received from the dealer for NCAP testing, since it is unlikely vehicle owners will adjust the aim of their headlamps prior to driving. Thus, maintaining factory settings should ensure more realistic testing.

The Agency is not adopting the testing of modified vehicles at this time, as suggested by SEMA. NCAP's test methodology involves the evaluation of production-level vehicles available directly from the manufacturer, and any modified vehicle may not receive similar NCAP results, whether tested for crashworthiness or crash avoidance. Given the variety of legal modifications that may be completed in an aftermarket setting, it is not practicable to evaluate vehicles with modifications. Further, generating this information would be a significant burden to vehicle manufacturers.

#### Scenario and Test Condition Specifications

NHTSA finds validity in the unspecified artificial light source concerns raised by GM and Auto Innovators. As the Agency seeks to replicate challenging real-world scenarios while also offering repeatable test conditions, it has decided that the test procedure for darkness PAEB testing will specify the ambient illumination at the test site must be no greater than 0.2 lux. This value approximates roadway lighting in dark conditions without direct overhead lighting with moonlight and low levels of indirect light from other sources, such as reflected light from buildings and signage. Additionally, an illumination level of 0.2 lux mirrors the level specified in the test procedures for the recently issued final rule for adaptive driving beams.<sup>274</sup> This darkness level accounts for the effect ambient light has on AEB performance, particularly for camera-based systems, and should ensure robust performance of all AEB systems, regardless of sensor type. Also, NHTSA will not perform tests where the SV is driving toward the moon such that the horizontal angle between the moon and a vertical plane

containing the centerline of the SV is less than 25 degrees and the lunar elevation angle is less than 15 degrees. By incorporating these specifications, the Agency sees no need to allow manual high beam usage, as GM requested.

Auto Innovators suggested the Agency align the parked obstacle vehicle location in test condition S1d to the applicable specifications prescribed for Euro NCAP's comparable CPNCO test condition. The Agency confirms that NHTSA's S1d parked obstacle vehicle location aligns with Euro NCAP's CPNCO specification.

In response to GM's request that the Agency clarify the pass/fail criteria for both false positive (S1f and S1g) test conditions, appropriate specification will be provided if and when the Agency chooses to adopt these test conditions for NCAP.

Finally, while NHTSA acknowledges Velodyne's assertion that its current PAEB test procedures do not encompass all aspects of real-world driving, given the number of test conditions and variants included in NCAP's PAEB test matrix, the Agency concludes the published test procedures are sufficient to gauge overall PAEB system performance. NHTSA notes it must balance attempts to ensure system robustness with increased test burden. NHTSA may consider adopting additional test conditions or variants in the future encompassing one or more of the elements the commenter mentioned if real-world data identifies a significant need.

#### 11. Adding Test Scenarios S2 and S3

The Agency's 2019 PAEB test procedure does not include CAMP scenario S2 (vehicle turning right and a pedestrian crossing the road) or CAMP scenario S3 (vehicle turning left and a pedestrian crossing the road), both of which are defined earlier in this final notice. In response to the December 2015 RFC notice, several commenters stated that addressing these scenarios with available technology may generate a significant number of false positive detections. These false detections could have the unintended consequences of causing hazardous situations (e.g., unexpected sudden braking while turning in traffic) that could lead drivers to disable their PAEB systems or possibly lead to an increase in rear-end collisions. The commenters explained that the S2 and S3 test scenarios require more sophisticated algorithms as well as more robust test methodologies than those required for scenarios S1 and S4. However, ZF Group mentioned that ADAS sensors designed to meet Euro

NCAP's Vulnerable Road Users test procedures would have increased fields-of-view, which should improve their effectiveness in turning scenarios. Other commenters stated that the articulating mannequins may not be representative of a real human for all sensing technologies in turning scenarios. Most commenters found it more appropriate to focus on the scenarios affording the most significant safety benefits first—S1 and S4, and stated that adding the S2 and S3 scenarios would be more practical when the technology matures. NHTSA committed to continuing PAEB system evaluations in its March 2022 RFC notice to determine the feasibility of including S2 or S3 scenarios as technological advancements are made.

Earlier in this notice, the Agency stated it did not conduct the S2 and S3 test scenarios as part of its PAEB characterization study and did not propose these test scenarios for inclusion in its current proposal to update NCAP. NHTSA agreed with the comments mentioned previously that most vehicles in the U.S. fleet are not currently equipped with sensing systems capable of detecting pedestrians while a vehicle is turning (i.e., those situations represented by S2 and S3 test scenarios), as they do not have the necessary field-of-view. AAA conducted PAEB tests, including an S2 scenario where the vehicle is turning right with an adult pedestrian crossing.<sup>275</sup> In AAA's testing, the PAEB systems for four tested model year 2019 vehicles did not react to the test targets during a testing scenario similar to NHTSA's S2 scenario described above, resulting in all test vehicles colliding with the pedestrian mannequin target. These systems performed better in a scenario similar to NHTSA's S1 scenario, however. In that testing, the vehicles avoided a collision with the pedestrian mannequin target 40 percent of the time at a 32.2 kph (20 mph) test speed and nearly all the time at a 48.3 kph (30 mph) test speed. Further, in its recent study on PAEB system effectiveness, IIHS found that while AEB with pedestrian detection was associated with significant reductions in pedestrian crash risk (approximately 27 percent) and pedestrian injury crash risk (approximately 30 percent), no evidence suggested that existing systems were effective while the PAEB-equipped vehicle was turning.<sup>276</sup> Thus, it was

<sup>275</sup> American Automobile Association (2019, October), *Automatic emergency braking with pedestrian detection*, <https://www.aaa.com/AAA/common/aar/files/Research-Report-Pedestrian-Detection.pdf>.

<sup>276</sup> Cicchino, J. B. (2022, February), *Effects of automatic emergency braking systems on*

more beneficial to focus current efforts on performing PAEB testing at higher speeds and with various lighting conditions using the S1 and S4 test scenarios. However, NHTSA's March 2022 RFC sought comment on an appropriate timeframe for including S2 and S3 scenarios in NCAP and requested information from vehicle manufacturers on any vehicle models designed to address, and ideally achieve crash avoidance, during conduct of the S2 and S3 scenarios to support Agency evaluation as part of a future program upgrade.

#### Summary of Comments

##### Include Turning Scenarios Now

Commenters seeking the inclusion of turning scenarios into PAEB evaluations either immediately or as soon as possible (Bosch, Lidar Coalition, Aptiv, CAS, NTSB, MEMA, Adasky, Advocates, The League, ZF Group, IIHS, ASC, Intel, CR, AARP, Velodyne, Tesla, and a number of individual commenters), noted that including turning scenarios would align with Euro NCAP's test protocol and promote harmonization. NTSB did not provide a timeline for including turning PAEB scenarios in NCAP but stressed the importance of testing the upper limits of vehicle capabilities to drive innovation and advancement. Advocates and The League echoed NTSB's opinion, with Advocates noting that manufacturers are already able to meet expectations internationally. The League also questioned why NHTSA did not acknowledge or adopt the Euro NCAP CPTA protocol. Velodyne noted Euro NCAP's Roadmap for 2025, already highlights turning conditions as a priority for inclusion.

Some commenters cited real-world injury data to support the prompt inclusion of turning scenarios, with Lidar Coalition reiterating nearly half of vehicle-to-pedestrian collisions occur at an intersection while the vehicle is turning. Although NHTSA's data has previously shown intersection crashes involving a crossing pedestrian and turning vehicle are generally of lower severity, Lidar Coalition noted vehicles have grown larger since this data analysis, a sentiment echoed by Velodyne. IIHS cited its 2022 study which found that at intersections, the odds that a crash that killed a crossing pedestrian involved a left turn by the vehicle versus no turn were about twice as high for SUVs, nearly three times as high for vans and minivans and nearly

four times as high for pickups as they were for passenger cars.<sup>277</sup> The group suggested that NHTSA begin evaluating S2 scenarios as a complementary approach to its consumer information program. Lidar Coalition and another individual acknowledged the same study and noted that a similar trend could be seen for crashes involving vehicles turning right. Therefore, Lidar Coalition requested that NHTSA perform a follow-up study to investigate more current severity trends with respect to pedestrians involved in turning pre-crash scenarios. NACTO also stated vehicles are three to four times more likely to fatally injure pedestrians while turning.

Commenters also noted the evolution of vehicle sensors and equipment. Specifically, Lidar Coalition stated that field-of-view limitations are of less concern when vehicles are equipped with a variety of sensors intended to monitor the sides of a vehicle, such as with BSW/BSI, and that consumers will expect the vehicle to be able to warn them of an impending crash with a pedestrian while turning because of "rotational" sensors monitoring their vehicles. ZF Group noted the field-of-view of current sensors has improved since prior consideration of the S2 and S3 scenarios, and vehicles would show improved performance at this time. Adasky stated that thermal cameras are also adequate to address S2 and S3 scenarios and have become more affordable and smaller in size. Adasky also discussed the capability of fusion sensors (thermal/RGB cameras/radar) and object detection software to perform well in these scenarios, particularly emphasizing the performance improvement that thermal cameras offer over RGB camera/radar fusion systems. ASC, Intel, Velodyne, Aptiv, and others also noted that improved perception technology is currently available.

Lidar Coalition and Velodyne stated that NHTSA should balance the risk of an increased numbers of false positives (and, therefore, rear-end collisions) with the benefit to VRUs that may be afforded by including turning scenarios in PAEB evaluations. Both groups noted it is preferable for a driver to encounter a false positive activation and have time to react or override the intervention than to experience a false negative situation. Adasky recommended NHTSA evaluate false positive rates, as doing so may indicate system

robustness and offer insight into possible areas of improvement.

The Agency also received comments from NYC DOT/NYC DCAS, which expressed concern regarding consumer understanding of PAEB performance if S2 and S3 are not included in NHTSA's evaluations. The group stated the Agency needs to clearly convey that PAEB systems may not be as effective while turning as they are when the vehicle is driving straight.

In relation to timing, some commenters mentioned that a phased approach may be appropriate. Aptiv advocated for a timeline similar to Euro NCAP's, with immediate inclusion of S2 and S3 when the pedestrian is oncoming with respect to the SV before the turn is initiated, and later inclusion of S2 and S3 scenarios with the pedestrian receding (possibly with two- or three-years lead-time between oncoming and receding). Aptiv justified this timing by noting oncoming pedestrian scenarios are less challenging to meet than receding pedestrian scenarios.

##### Wait To Include Turning Scenarios

Some commenters recommended that NHTSA should wait to include S2 and S3 pre-crash scenarios in NCAP. Specifically, BMW, GM, Honda, Auto Innovators, Toyota, FCA, and HATCI agreed that the S1 and S4 scenarios should be introduced first with turning pre-crash scenarios added at a later time. Toyota did not have a specific recommendation regarding a timeline for S2 and S3 scenario inclusion but did note the frequency of pedestrian crashes in which the striking vehicle was turning was very low (8 percent) compared to scenarios S1 and S4.<sup>278</sup> HATCI also noted the higher relative frequency of S1 and S4 pre-crash scenarios in real-world data. FCA stated there should be a demonstrated need and robust test procedure prior to the incorporation of any new technology assessment into NCAP. BMW suggested the latter half of this decade would be appropriate timing because of the possibility of increased false positive activations. Auto Innovators, FCA, and HATCI stated turning scenarios should be included in the Agency's future roadmap, with Auto Innovators specifically noting this item should be targeted for the mid- to long-term range. GM stated the S2 and S3 scenarios should be phased in later as part of a

<sup>277</sup> pedestrian crash risk, Insurance Institute for Highway Safety, <https://www.iihs.org/api/datastore/document/bibliography/2243>.

<sup>277</sup> Hu, W. and J.B. Cicchino. (2022, July), *Relationship of pedestrian crash types and passenger vehicle types*, Insurance Institute for Highway Safety.

<sup>278</sup> Carpenter, M.G., Moury, M.T., Skvarce, J.R., Struck, M. Zwicky, T.D., & Kiger, S.M. (2014, June), *Objective tests for forward looking pedestrian crash avoidance/mitigation systems: Final report* (Report No. DOT HS 812 040), Washington, DC: National Highway Traffic Safety Administration.

mid-term update to allow time for planned system and sensor enhancements to enter the fleet. Honda suggested NHTSA evaluate the current vehicle fleet using the Euro NCAP CPTA protocol to determine whether current systems could meet requirements. The automaker did not give a timeframe for inclusion of S2 and S3 but noted S1 and S4 should be given priority.

#### Other Suggestions

Commenters also provided specific suggestions for the S2 and S3 scenario test procedures in the event that NHTSA chose to adopt them with its final decision notice. Bosch recommended NHTSA amend the test procedure to have the SV perform a clothoid maneuver<sup>279</sup> instead of the constant-radius maneuver currently specified. The group stated the clothoid path more closely resembles a real-world left turn maneuver and is more easily repeated in a test setting than is a constant-radius maneuver. ASC suggested adopting S2 with a 10 kph (6.2 mph) SV speed and conducting S3 at 10 kph (6.2 mph) and 20 kph (12.4 mph), since this would be in alignment with Euro NCAP's protocol.

Commenters also expressed opinions on how to best convey PAEB system performance information for S2 and S3 pre-crash scenarios if these scenarios were adopted in NCAP. Rivian stated NHTSA should phase in levels of intervention by first giving credit to auditory warnings and then, at a later point in time, checking for speed reduction. Auto Innovators suggested that the Agency give credit for S2 and S3 performance as a "Recommended Technology" rather than integrating these pre-crash scenarios into an overall rating. Conversely, Advocates stated it would like to see PAEB included in the rating itself rather than simply listed as a "Recommended Technology," as it would allow consumers to differentiate between vehicle safety system performance.

#### Response to Comments and Agency Decisions

While the Agency agrees with those commenters asserting there are inherent safety benefits in adopting S2 and S3 turning scenarios to assess PAEB systems, it will not incorporate these additional test scenarios as part of this NCAP upgrade.

NHTSA acknowledges the many reasons commenters cited for adding turning scenarios to PAEB evaluations

<sup>279</sup> A clothoid is a curve whose curvature changes linearly with its curve length. It is often used as a transition curve in highway design.

as soon as possible, including: harmonization with Euro NCAP's CPTA scenarios, anticipated real-world benefits and their potential to nullify the risk of a potential increase in false positives, the recent increase in vehicle size leading to more fatal crashes, recent sensor additions and advancements, and potential consumer confusion if such scenarios are omitted. Other commenters supported phasing in the turning PAEB test scenarios over time, with many agreeing with the Agency's proposal to adopt S1 and S4 scenarios as part of this upgrade to NCAP and S2 and S3 scenarios as part of a future update. These commenters, many of which suggested that an appropriate timeline for S2 and S3 adoption would be approximately five to seven years, cited limited real-world benefits compared to those afforded by adoption of the S1 and S4 scenarios, and the need for test procedure development and Agency research. Aptiv also supported a phased approach to adoption of the S2 and S3 test scenarios but explained that certain turning scenarios could be added as part of the current program update (which also includes the adoption of S1 and S4) and others could be included two to three years later to allow time for PAEB systems to mature.

Given the comments received, NHTSA reasons several actions must take place prior to the adoption of additional PAEB tests. Specifically, the Agency should first analyze recent crash data to further characterize scenarios for pedestrians involved in crashes with a turning vehicle. This analysis should allow the Agency to refine existing testing procedures to best address the safety need. Following this, NHTSA should conduct research testing to validate these test procedures and assess the capabilities of the current fleet. As part of the Agency's research effort, it will consider Bosch's suggestion to adopt a clothoid maneuver for the SV in lieu of a constant-radius maneuver to improve test repeatability, along with ASC's recommendation to align test speeds to those prescribed by Euro NCAP. In the event the Agency develops a proposal to add the S2 and S3 PAEB tests to NCAP in the future, as many respondents suggested, the Agency will also consider the comments received from Rivian, Auto Innovators, and Advocates pertaining to performance requirements and incorporating the associated test results for the turning scenarios for ratings purposes. In the meantime, NHTSA will communicate on its website test specifics for the PAEB scenarios the Agency is adopting so the public may understand NCAP's

assessments are limited to only those situations reflected by the tests conducted and do not encompass all situations involving pedestrians that a driver may encounter, as NYC DOT/ NYC DCAS requested.

#### 12. Future Safety Areas for Pedestrian Protection

NHTSA requested comments on other safety areas that should be considered as part of a pedestrian protection NCAP strategy for this program update or the future. NHTSA received many comments on this topic, summarized below.

##### Summary of Comments

##### Pedestrian Crashworthiness

An overwhelming number of commenters responded in favor of incorporating a crashworthiness pedestrian protection component to the NCAP ratings. Commenters expressed concerns about the increasing size (both in height and weight) of vehicles in the U.S., noting that consumers often purchase larger vehicles to protect their own families while inadvertently placing VRUs at a disadvantage. Those in favor of a pedestrian crashworthiness component reasoned that its incorporation would help balance the risk between those inside and outside of the vehicle. Many commenters also mentioned that ADAS technologies will not be effective in every scenario and requested that NHTSA take a multi-pronged approach in addressing pedestrian injuries and fatalities. These individuals suggested manufacturers design their vehicles to be more pedestrian-friendly, rather than relying on technology that may not be completely effective to avoid the crash. Many commenters noted Euro NCAP currently performs this testing.<sup>280 281</sup>

The League specifically requested NHTSA evaluate vehicles for crashworthiness protection for cyclists, those in wheelchairs, and other VRUs sharing the roadway with motor vehicles. It stated that if this evaluation cannot be included in NCAP, it should at least be undertaken as research to allow all parties (consumers, researchers, and vehicle manufacturers) to better understand how vehicle design influences injury in these populations.

<sup>280</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Vulnerable Road User Testing Protocol, Version 9.1*.

<sup>281</sup> In Euro NCAP's VRU protection protocol, head impactors and leg impactors are used to evaluate a pedestrian's injury risk after an impact with the test vehicle.

### Direct Visibility

Commenters also expressed concerns relating to direct driver visibility, with many stating that ADAS technologies involving cameras and sensors should not be the first solution to increase the field of view of a driver. Instead, they preferred manufacturers consider vehicle designs which eliminate or greatly reduce blind zones at early stages of development. Commenters noted that minimized blind zones may improve a driver's ability to see and respond to VRUs who use assisted mobility devices, such as wheelchairs, walkers, or scooters, and may already be closer to the ground. One individual also suggested that visibility of a pedestrian or other VRU after an initial PAEB intervention has taken place should be accounted for, allowing the driver to physically see why the vehicle intervened and take appropriate actions.

### Pedestrian Mannequin Target

Many commenters requested changes to the pedestrian mannequin target and/or additional targets to represent a wider variety of VRUs more closely. Of particular concern was the ability of PAEB systems to accurately detect people of color. NACTO cited a 2019 study from the Georgia Institute of Technology<sup>282</sup> that demonstrated automated vehicles cannot detect darker skin as well as lighter skin. The group further stated that "people of color, particularly Black and Indigenous people, are disproportionately killed while walking and are more likely to live in communities with unsafe, inadequate infrastructure for walking and biking." NSC added that although pedestrian deaths represent about 14% of all traffic deaths among white, non-Hispanics, they represent more than 20% of pedestrian fatalities among Hispanics, Black non-Hispanics, and Native Americans. NSC further noted that, compared to white non-Hispanics, the pedestrian fatality rate for Native Americans is almost four times as high, and the pedestrian fatality rate for the Black community is nearly twice as high. These sentiments were detailed by safety advocates, local government organizations, and individuals alike.

Commenters also expressed concerns with the height of the pedestrian mannequin target, particularly for shorter individuals, including children. An individual commenter stated that children are vulnerable to pedestrian impacts not only because of their size relative to a modern vehicle's size, but also because of the behavioral

differences between adults and children. Specifically, the commenter noted that children are less likely to use the same judgment around vehicles as adults, citing evidence to support this claim.<sup>283</sup> NSC stated that, in 2017, one in every five children killed in a crash were pedestrians. Several individuals and one group (Bikemore) stated the pedestrian mannequin should be representative of a 2-year-old child. MEMA noted there are currently 2-year-old and 7-year-old pedestrian mannequins available, adding they should also be included in a future NCAP upgrade. Auto Innovators supported the use of a 7-year-old child target in the future. Uhnder stated child targets should be used in all testing, noting that all VRUs should be equally represented. ASC also stated all VRUs should be represented equally, adding that NHTSA should consider using them beyond scenario S1d.

Commenters also noted several other areas of potential interest for characteristics of the pedestrian target, including: gender, clothing type and color, carried or pushed objects (such as a stroller), and the use of assistive mobility devices like wheelchairs and scooters. For example, AARP suggested that PAEB systems should be able to recognize pedestrians carrying shopping bags or walking a bicycle across a road. Advocates cited the NTSB's findings that a 2018 crash involving a vehicle equipped with ADAS technologies occurred because the vehicle did not properly identify the pedestrian walking her bicycle across the road.<sup>284</sup> One commenter who uses a wheelchair stated those using assistive mobility devices like wheelchairs are already more difficult to see while traveling because their head is lower to the ground, including sometimes below the hoods of vehicles. Likewise, one individual commenter noted wheelchair users are 36 percent more likely to be killed as pedestrians than the overall population. Uhnder and another individual stated that darker clothing is more difficult for the human eye to distinguish from surroundings in the dark, particularly for pedestrians traveling at night. It would be imperative for a PAEB system to

recognize and respond to a pedestrian wearing such clothing.

Finally, Auto Innovators and GM stressed the need for field pedestrian crash data to support any additional safety areas addressed by NCAP.

### Inclement/Challenging Weather

Many comments addressed PAEB performance in poor weather conditions and in a variety of environments. As discussed in previous sections of this notice, many respondents expressed concerns over performance degradation in rain, snow, and fog. Walk and Roll Bellingham stated that a system that will not work in these conditions would not be useful to them, as inclement weather is common.

One individual commented that many crashes occur during dawn and dusk, which are mid-level lighting conditions. The commenter stated this may be due to sun glare or to more individuals traveling at these times of day, noting it should be a targeted scenario due to frequency of occurrence.

### Other Scenarios To Consider

Commenters also suggested other PAEB scenarios and variations the Agency should consider, with Uhnder, ASC, and one individual recommending the addition of a test simulating a pedestrian crossing the road with another vehicle approaching in oncoming traffic, both in daylight and dark lighting conditions. Uhnder also suggested including a test with a pedestrian crossing under a bridge or walkway. Uhnder stated that these scenarios, which had once been difficult for the SV to pass because sensors could not properly resolve the pedestrian, are now less challenging for modern sensors. Vayyar recommended including a parking lot scenario in which a vehicle enters and exits a parking space. CAS noted that highway signage, crosswalk painting, and construction should be accounted for in NHTSA's testing.

One individual pointed out there is currently no provision to mitigate a crash with a pedestrian that may be lying in the road, and that such a case might apply to a pedestrian that has already been struck.

TRC, AARP, and one individual pointed out this proposal does not address backovers. TRC and the individual commenter noted Euro NCAP has developed and approved a protocol for reverse pedestrian braking. Accordingly, TRC asserted the Agency could readily adopt this test as part of its PAEB test procedures. Similarly, the individual commenter expressed that it was unacceptable NHTSA did not plan

<sup>283</sup> Elizabeth E. O'Neal et al., Changes in Perception-Action Tuning Over Long Time Scales: How Children and Adults Perceive and Act on Dynamic Affordances When Crossing Roads, 44 JOURNAL OF EXPERIMENTAL PSYCHOLOGY: HUMAN PERCEPTION AND PERFORMANCE 18 (2018).

<sup>284</sup> <https://www.nts.gov/investigations/accidentreports/reports/har1903.pdf>.

<sup>282</sup> <https://arxiv.org/pdf/1902.11097.pdf>.

to include reverse and turning scenarios until the 2025–2031 timeframe. AARP suggested that including a reverse pedestrian test will improve PAEB technology more rapidly.

Finally, Vision Zero Network and NACTO expressed concerns with a PAEB system's ability to distinguish pedestrians traveling in a crowd.

#### Vehicle to Everything (V2X)

Several commenters expressed that V2X technology could help drivers and VRUs avoid potential hazards, especially as vehicles increasingly share roads with pedestrians, bicyclists, etc. 5G Automotive Association noted that V2X technology developed under the 3rd Generation Partnership Project already supports vehicle-to-pedestrian communications. Two additional commenters stated V2X technology could be used specifically to help address the nighttime pedestrian crash problem. ASC and one individual commenter stated that vehicles could assess nearby smartphone location data to locate and track VRUs. ASC suggested NHTSA perform testing with location data enabled smartphones attached to the pedestrian mannequin for vehicles equipped with this technology.

#### Other Comments

ZF Group commented that pedal misapplication is a concern and that as the country ages, incidents could increase. Additionally, the group noted JNCAP has developed a protocol to evaluate acceleration suppression technologies to mitigate the risk and suggested NHTSA investigate this further.

Another individual stated NHTSA should require vehicles to make sound at low speeds to warn pedestrians that a vehicle is in motion nearby.

#### Response to Comments and Agency Decisions

Many commenters stated the Agency should pursue multiple paths beyond those specifically proposed in the March 2022 notice to fully mitigate pedestrian crashes. NHTSA's response to these comments follows.

#### Pedestrian Crashworthiness

Many commenters expressed that vehicle manufacturers should take pedestrian crashworthiness into account when designing vehicles. As noted previously, NHTSA intends to develop a pedestrian crashworthiness FMVSS to address pedestrian head impacts to vehicle hoods and has also proposed a separate testing program for

NCAP.<sup>285 286</sup> Comments will be considered independently in the context of those actions. The Agency hopes that, if implemented, these efforts may help to address the need to balance risk to occupants in the vehicle with those outside of the vehicle.

#### Direct Visibility

The Agency is looking into this further to determine the best approach to address these issues and has included driver visibility in the 10-year roadmap for consideration in future NCAP updates.

#### Pedestrian Mannequin Target

NHTSA notes the proposed 4activePA adult and child articulated mannequins represent a 50th percentile male adult and a 7-year-old child. Both pedestrian mannequin targets have the same clothing and skin/hair color. Many commenters suggested alternative pedestrian targets, noting that a variety of VRUs should be accounted for. This included people of color; VRUs of differing heights, ages, and clothing styles; those who use assistive mobility devices; or those carrying objects which may impede proper detection.

Because the Agency is not currently aware of alternative pedestrian targets proven to be reliable, including those representing a toddler-aged child, those using mobility aids, or those with alternative clothing, the proposed 4active targets will be adopted for this NCAP update. As noted previously, these are the pedestrian targets adopted for use by Euro NCAP. However, NHTSA is currently conducting research to evaluate vehicle response to various pedestrian characteristics, such as clothing color and type. This research will inform next steps for the Agency.

Regarding children in particular, the Agency notes that, while there are likely behavioral differences between adults and children, as one commenter claimed, crash data show that child pedestrian involvement is relatively low. In 2021, less than one-sixth (15 percent) of children aged 14 and younger killed in traffic crashes were pedestrians, and the age group with the fewest pedestrian fatalities was ages five to nine years, followed by the less than five-year-old age group.<sup>287</sup> That said, for this NCAP update, the Agency will utilize the seven-year-old 4activePA mannequin for S1d. Use of this

pedestrian target in at least one condition should ensure that vehicle manufacturers account for smaller pedestrians in their PAEB system designs while still targeting the largest population of pedestrians for the majority of adopted conditions. The Agency may revisit this decision in the future if additional mannequins are found to be reliable during testing, sensing technology improves, and/or the real-world crash problem changes.

#### Inclement/Challenging Weather Conditions

NHTSA has decided that all NCAP PAEB testing will occur in dry, clear conditions free of fog, smoke, ash, or other airborne particulate matter with the minimum visibility range stated. Doing so should ensure that each vehicle is evaluated under the same circumstances and maintain a reasonable test burden.

NHTSA acknowledges that pedestrian crashes occur in various weather conditions. According to Volpe data from 2011–2015, approximately 10 percent of fatal pedestrian crashes and 13 percent of injurious pedestrian crashes occurred during adverse weather annually.<sup>288</sup> PAEB systems should be functional in a variety of weather conditions. This especially holds true for areas of the country subject to frequent inclement weather.

However, for an NCAP testing program to be useful to consumers, repeatability and reproducibility of test results is imperative. The presence of precipitation could influence the outcome of the tests, as pavement covered in precipitation may have a lower coefficient of friction than dry pavement and falling precipitation may interfere with sensing systems such that vehicles are not independently subjected to the same conditions. The same logic applies to visibility at the test site. A current industry standard specifies the horizontal visibility at ground level must be greater than 1 km (0.62 miles), a standard also adopted by Euro NCAP for its AEB/LSS protocol.<sup>289</sup> Thus, NHTSA will conduct all NCAP PAEB tests in dry, clear conditions free of fog, smoke, ash, or other airborne particulate matter with the minimum visibility range stated. However, similar to that which the Agency indicated for

<sup>288</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>289</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB/LSS VRU systems, Version 4.5*.

<sup>285</sup> <https://www.reginfo.gov>, RIN 2127–AK98.

<sup>286</sup> 88 FR 34366 (May 26, 2023).

<sup>287</sup> National Center for Statistics and Analysis. (2023, June), *Pedestrians*. (Traffic Safety Facts, 2021 Data, Report No. DOT HS 813 458), Washington, DC: National Highway Traffic Safety Administration.

turning scenarios S2 and S3, NHTSA may communicate on its website possible system limitations pertaining to environmental conditions not assessed by NCAP to lessen consumer confusion relating to expectations for system functionality. Further, notwithstanding the adopted test specificity, NHTSA encourages manufacturers to continue working toward delivering PAEB systems that are robust and that function in as many real-world environments as possible.

#### Other Scenarios To Consider

NHTSA acknowledges that real-world driving involves a variety of situations. Commenters noted that the proposed testing conditions do not address such scenarios as: parking lots; cases where an oncoming vehicle is also present; situations where a pedestrian is crossing under a structure such as a bridge; backover incidents; or other surroundings such as signs, roadway markings, and other visual clutter, such as that found in construction zones.

The Agency agrees that each of these situations represents a possible real-world case in which PAEB is expected to function. However, it would not be possible to test every permutation, as the resources required for this endeavor would make such a testing program prohibitive. As mentioned in previous sections, NHTSA plans to monitor real-world cases and has the authority to investigate situations which prove increasingly problematic.

Several commenters expressed concern that a specific mitigation plan for backover pedestrian crashes was not included in the Agency's March 2022 proposal, beyond inclusion in a short-term roadmap. At that time, NHTSA referred to data which showed NHTSA backing data from 2021 in-traffic pedestrian crashes shows that most pedestrian fatalities where the first harmful event was a collision with the vehicle are a result of initial contact with the front of the vehicle. As detailed in the March 2022 RFC notice, more time is required for NHTSA to review real-world data and the effects of FMVSS No. 111, "Rear visibility." This information will also help inform changes to the rear automatic braking (RAB) test procedure, which remains under further development. Thus, NHTSA concludes that while Euro NCAP has developed an RAB protocol for use in its testing, it would be premature for the Agency to incorporate RAB as a U.S. NCAP ADAS technology at this time.

NHTSA will also not perform PAEB testing for a lying, stationary pedestrian at this time. These cases are likely rare

and would not represent a large portion of the pedestrian crash problem. Further, there is not a test procedure developed at this time to address such a scenario. Similarly, there is not a test procedure currently developed to assess a PAEB system's response to multiple pedestrians in a group, so this scenario will also not be incorporated into NCAP testing at this time.

#### Vehicle to Everything (V2X)

NHTSA also received a suggestion to incorporate V2X support into its PAEB test procedures for dark lighting conditions. This would allow vehicles to utilize smartphone location data to locate the pedestrian target and map its movement. As a result, V2X technology could help to mitigate cases in which a VRU is not visible due to obstruction, lack of lighting, or other environmental factors. However, because the Agency has not conducted testing of a smartphone-enabled test target, it would be premature to incorporate this additional specification into PAEB testing at this time. Further, DOT research has not yet determined whether cellular-based V2X would be able to support safety-critical crash avoidance technologies, although it may have benefits for weather, traffic, and infrastructure-related alerts. NHTSA may consider the inclusion of this technology in NCAP in the future.

#### Other Comments Related to Pedestrian Safety

As part of NHTSA's AEB research to further assess the rear-end safety problem, characterize current vehicles, and identify potential countermeasures, the Agency will study pedal misapplication. AEB/PAEB test procedure modifications it deems necessary as a result of that effort may be adopted as part of subsequent updates to NCAP.

NHTSA notes all electric and hybrid vehicles manufactured on or after March 1, 2021, are required to produce a sound at low speeds per FMVSS No. 141, "Minimum sound requirements for hybrid and electric vehicles." This standard should address concerns related to quiet vehicles and pedestrian crash risk.

#### 13. Acceptable Timeframe To Add Bicyclist Testing and Test Procedures Other Than Euro NCAP's To Address Bicyclist Crashes

In its March 2022 RFC notice, the Agency committed to conducting additional research to address injuries and fatalities for other VRUs, specifically bicyclists and motorcyclists. NHTSA's current PAEB test procedure

does not include a specific bicyclist component, although PAEB systems capable of detecting bicyclists may exist. The rising number of bicyclists killed on U.S. roads<sup>290</sup> prompted the Agency to study and determine the viability of Euro NCAP's AEB bicyclist tests.<sup>291</sup>

Acknowledging the current state of bicyclist PAEB testing in the U.S., NHTSA requested comments detailing when it would be acceptable to add bicyclist PAEB testing to its suite of ADAS tests, and whether there are other test procedures available beyond Euro NCAP's to evaluate. The Agency also requested information from vehicle manufacturers on any currently available models with the capability to validate the bicyclist target and test procedures used by Euro NCAP to support evaluation for a future NCAP program upgrade.

#### Summary of Comments

An overwhelming majority of commenters who addressed the issue urged NHTSA to move forward with a bicyclist component as soon as possible. Somerville Bicycle Safety noted that according to NSC, bicyclist fatalities increased 44 percent from 2011 to 2020.<sup>292</sup> The League stated that other NHTSA FARS data shows that in 2020, 276 bicyclists were killed by the grouped crash type, "motorist overtaking bicyclist," which was more than three times the number of those killed in the next crash type, "parallel paths—other circumstances," and noted that these crash types could be addressed by AEB.

Vision Zero Network, the League, and Bike Cleveland noted that rising cyclist deaths are cited as a targeted issue in USDOT's National Roadway Safety Strategy (NRSS). Further, the BIL's requirement to consider benefits of harmonization with domestic and international ratings systems was cited by PeopleForBikes and Ride New Orleans. Advocates also noted there is an increased interest from the U.S. DOT and other transportation organizations in the use of bicycles in urban transportation programs to travel to school and work.

Respondents also cited the availability of a bicyclist target and Euro

<sup>290</sup> National Center for Statistics and Analysis (2019, June), *Bicyclists and other cyclists: 2017 data* (Traffic Safety Facts. Report No. DOT HS 812 765), Washington, DC: National Highway Traffic Safety Administration.

<sup>291</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—AEB/LSS VRU systems, Version 4.5*.

<sup>292</sup> <https://injuryfacts.nsc.org/home-and-community/safety-topics/bicycle-deaths/>.



NCAP's protocol in support of NHTSA's adoption of a bicyclist component for PAEB. Intel, Vision Zero Network, Safe Roads Alliance, Aptiv, Somerville Bicycle Safety, PeopleForBikes, AARP, The League, NACTO, Ride New Orleans, Advocates, CAS, ITS America, Bike Cleveland, KAC, ASC, FSS, and Vayyar all referred to Euro NCAP's readily available protocol as a reason to move urgently. Intel specifically noted that bicyclist AEB should be included in the 2023–2024 timeframe of NCAP's roadmap because of this readily available and updated protocol. Lidar Coalition noted that NHTSA's plan to not include bicyclist AEB until a future NCAP upgrade appears out of step with the Agency's stated goals to address areas of substantial safety need and to harmonize with Euro NCAP wherever possible. The League noted inconsistencies in NHTSA's justifications for including other ADAS technologies for this NCAP upgrade, including BSI and CIB, to encourage proliferation and development of capabilities in the vehicle fleet, while not also including bicyclist AEB. Other commenters stated that NHTSA, and therefore the U.S., will lag behind European countries by a decade should NHTSA decide to delay inclusion of bicyclist detection as shown in the draft NCAP roadmap. Several commenters stated that Australasian NCAP, JNCAP, and IIHS, in addition to Euro NCAP, already take bicyclists into account in their PAEB/AEB testing.

The NTSB submitted a comment referring to its 2019 recommendation that NHTSA incorporate vehicle-to-bicyclist crash avoidance capabilities in NCAP as a mechanism to incentivize incorporation of the technology in vehicles.<sup>293</sup> The accompanying study showed that vehicle ADAS could reduce the frequency of bicyclist crashes.

Some commenters stated that the Agency should wait until a future NCAP upgrade to include bicyclist detection in PAEB/AEB testing. These included Auto Innovators, HMNA, GM, Honda, and HATCI. GM and Auto Innovators stated the Agency should take more time for NCAP to evolve and should adopt Euro NCAP procedures when NHTSA eventually adopts bicyclist detection protocols. Honda acknowledged that bicyclist detection is an important feature that should be included but suggested that it be included at a future time, as Scenarios S1 and S4 should be prioritized. HATCI suggested that if

NHTSA plans to harmonize with Euro NCAP, NHTSA could move forward as part of a future upgrade, but if the Agency is going to make changes to the protocol, then HATCI recommended that NHTSA publish the amended test procedure for review and comment. Finally, DRI mentioned that, in its experience, the current bicyclist targets available on the market lack the durability for continuous testing during which impacts may occur.

Several commenters stated more research would be useful to inform decisions regarding appropriate test scenarios and conditions. Auto Innovators, GM, Tesla, FCA, and the League suggested that NHTSA review U.S. crash data to determine any necessary adaptations to Euro NCAP test scenarios for the U.S. market. The groups suggested the Agency should take into consideration variables such as specific crash scenarios commonly seen in fatal crashes, SV and bicyclist speeds, and road features and markings specific to the U.S. market. The League also stated that door opening crashes, in which a vehicle occupant opens their door into the path of an approaching bicyclist, are likely underrepresented in FARS data, as other sources estimate that 7 percent to 20 percent of all cyclist crashes involve this crash type. Uhnder also supported continued studies to determine which scenarios are most likely to be found on U.S. roadways. Uhnder and ASC also suggested that NHTSA undertake a characterization study of bicyclist targets<sup>294</sup> to include radar cross section (RCS), like the study completed for pedestrian targets, prior to incorporation of a bicyclist component.<sup>295</sup>

The League stated when bicyclist AEB testing begins, it should be conducted in both daylight and dark lighting conditions. The group stated it is relevant to include these test conditions because NHTSA FARS data showed between 2016 and 2020, about 50 percent of bicyclist fatalities occurred during dark lighting conditions.<sup>296</sup>

In addition to bicycles, commenters stated other signatures, such as scooters and wheelchairs, should also be detected by vehicle AEB systems. MIC/MSF specifically recommended NHTSA also ensure the inclusion of motorcyclist tests. One individual stressed the importance of bicycle infrastructure, requesting safer spaces for cyclists to travel on the roadway.

Response to Comments and Agency Decisions

NHTSA recognizes many of the commenters supported the inclusion of bicyclist testing in NCAP and wanted the Agency to take such action immediately. Two of the main reasons cited for this inclusion were the need to fulfill initiatives established in the NRSS and BIL mandates, as well as incentivizing the proliferation and development of system capabilities in the vehicle fleet. These commenters referenced several existing test procedures and test targets that could be utilized to assess system performance to mitigate light vehicle crashes with bicyclists.

However, the Agency agrees with those commenters who suggested it should conduct additional research prior to adoption of a bicyclist component into NCAP. Existing test procedures, such as that in Euro NCAP, for evaluating crash avoidance technologies for bicyclist and motorcyclist protection need further evaluation for their effectiveness, objectivity, and suitability for vehicles sold in the U.S. Additional assessment is also needed on the durability and suitability of the targets used in the tests.

NHTSA has expedited its research on AEB for other VRUs, namely bicyclists and motorcyclists. Initial research has been performed on surrogate bicycle and motorcycle targets for testing and global test procedures to evaluate their effectiveness and suitability for use in performance tests. Further crash data analysis will be performed to better characterize the critical safety scenarios that account for bicycle and motorcycle injuries and fatalities. Collectively, this information will lead to test procedures that can be used to assess safety performance of vehicles sold in the U.S. This research effort is expected to be completed in 2025. As noted in the mid-term updates to NCAP in the NCAP roadmap finalized in this notice, NHTSA has included evaluation of AEB for mitigating crashes with bicyclists and motorcyclists starting with model year 2028 vehicles.

#### *E. Summary of Adopted Tests for Pedestrian Automatic Emergency Braking*

Tabular summaries of the adopted test conditions and variants for PAEB are provided in Tables 19 and 20.

<sup>293</sup> NTSB Safety Recommendation H–19–36.

<sup>294</sup> Including ISO19206–2, ISO19206–4, and ISO19206–5 (under development) targets.

<sup>295</sup> Albrecht, H. (2015, November 5). "Pedestrian Test Mannequins Objective Criteria for Evaluating Repeatability and Accuracy of PCAM Systems." SAE Active Safety Symposium. Plymouth, MI.

<sup>296</sup> National Highway Traffic Safety Administration. Fatality and Injury Reporting System Tool (FIRST), Version 6. Fatality Analysis Reporting System (FARS): 2016–2020 Final File.

TABLE 19—ADOPTED NCAP PAEB DAYLIGHT TEST CONDITIONS AND VARIANTS

Test condition	Size	Movement classification	Path origin	Overlap (%)	Obstruction	Test No.	Test speeds (kph (mph))	
							SV	Pedestrian
S4c .....	Adult (Facing Away).	Walk .....	Right .....	25	No .....	1	10 (6.2)	5 (3.1).
						2	20 (12.4)	5 (3.1).
						3	30 (18.6)	5 (3.1).
						4	40 (24.9)	5 (3.1).
						5	50 (31.1)	5 (3.1).
						6	60 (37.3)	5 (3.1).
S4a .....	Adult (Facing Away).	Stationary .....	Right .....	25	No .....	7	10 (6.2)	0.
						8	20 (12.4)	0.
						9	30 (18.6)	0.
						10	40 (24.9)	0.
						11	50 (31.1)	0.
						12	60 (37.3)	0.
S1b .....	Adult .....	Walk .....	Right .....	50	No .....	13	10 (6.2)	5 (3.1).
						14	20 (12.4)	5 (3.1).
						15	30 (18.6)	5 (3.1).
						16	40 (24.9)	5 (3.1).
						17	50 (31.1)	5 (3.1).
						18	60 (37.3)	5 (3.1).
S1a .....	Adult .....	Walk .....	Right .....	25	No .....	19	10 (6.2)	5 (3.1).
						20	20 (12.4)	5 (3.1).
						21	30 (18.6)	5 (3.1).
						22	40 (24.9)	5 (3.1).
						23	50 (31.1)	5 (3.1).
						24	60 (37.3)	5 (3.1).
S1e .....	Adult .....	Run .....	Left .....	50	No .....	25	10 (6.2)	8 (5.0).
						26	20 (12.4)	8 (5.0).
						27	30 (18.6)	8 (5.0).
						28	40 (24.9)	8 (5.0).
						29	50 (31.1)	8 (5.0).
						30	60 (37.3)	8 (5.0).
S1d .....	Child .....	Run .....	Right .....	50	Yes .....	31	10 (6.2)	5 (3.1).
						32	20 (12.4)	5 (3.1).
						33	30 (18.6)	5 (3.1).
						34	40 (24.9)	5 (3.1).
						35	50 (31.1)	5 (3.1).
						36	60 (37.3)	5 (3.1).

TABLE 20—ADOPTED NCAP PAEB DARKNESS TEST CONDITIONS AND VARIANTS

Test condition	Size	Movement classification	Path origin	Overlap (%)	Obstruction	Test No.	Test speeds (kph (mph))	
							SV	Pedestrian
S4c .....	Adult (Facing Away).	Walk .....	Right .....	25	No .....	1	10 (6.2)	5 (3.1).
						2	20 (12.4)	5 (3.1).
						3	30 (18.6)	5 (3.1).
						4	40 (24.9)	5 (3.1).
						5	50 (31.1)	5 (3.1).
						6	60 (37.3)	5 (3.1).
S4a .....	Adult (Facing Away).	Stationary .....	Right .....	25	No .....	7	10 (6.2)	0.
						8	20 (12.4)	0.
						9	30 (18.6)	0.
						10	40 (24.9)	0.
						11	50 (31.1)	0.
						12	60 (37.3)	0.
S1b .....	Adult .....	Walk .....	Right .....	50	No .....	13	10 (6.2)	5 (3.1).
						14	20 (12.4)	5 (3.1).
						15	30 (18.6)	5 (3.1).
						16	40 (24.9)	5 (3.1).
						17	50 (31.1)	5 (3.1).
						18	60 (37.3)	5 (3.1).
S1a .....	Adult .....	Walk .....	Right .....	25	No .....	19	10 (6.2)	5 (3.1).
						20	20 (12.4)	5 (3.1).
						21	30 (18.6)	5 (3.1).
						22	40 (24.9)	5 (3.1).
						23	50 (31.1)	5 (3.1).
						24	60 (37.3)	5 (3.1).
S1e .....	Adult .....	Run .....	Left .....	50	No .....	25	10 (6.2)	8 (5.0).
						26	20 (12.4)	8 (5.0).
						27	30 (18.6)	8 (5.0).
						28	40 (24.9)	8 (5.0).
						29	50 (31.1)	8 (5.0).
						30	60 (37.3)	8 (5.0).

TABLE 20—ADOPTED NCAP PAEB DARKNESS TEST CONDITIONS AND VARIANTS—Continued

Test condition	Size	Movement classification	Path origin	Overlap (%)	Obstruction	Test No.	Test speeds (kph (mph))	
							SV	Pedestrian
S1d .....	Child .....	Run .....	Right .....	50	Yes .....	31	10 (6.2)	5 (3.1).
						32	20 (12.4)	5 (3.1).
						33	30 (18.6)	5 (3.1).
						34	40 (24.9)	5 (3.1).

\*All darkness testing is to occur without the use of overhead artificial lighting.

**VI. Adding Blind Spot Technologies**

NHTSA is adding assessments for two blind spot technologies, blind spot warning (BSW) and blind spot intervention (BSI), to NCAP’s crash avoidance program. As discussed in NHTSA’s March 2022 RFC notice, these technologies have the potential to prevent or mitigate five pre-crash lane change or merge scenarios, representing approximately 503,070 crashes annually, on average—8.7 percent of all crashes that occur on U.S. roadways. These crashes result in 542 fatalities on average, and 188,304 MAIS 1–5 injuries annually, representing 1.6 percent of all fatalities and 6.7 percent of all injuries, respectively.<sup>297</sup> While the target population for blind spot technologies may not be as large as the populations for AEB technologies, their high consumer acceptance rate and potential safety improvements, both discussed later in this section, support their inclusion in the Agency’s signature consumer information program.

*A. Blind Spot Technologies*

1. Blind Spot Warning (BSW)

A BSW system is a warning-based driver assistance system that automatically alerts a driver that another vehicle is approaching, or being operated within, the blind spot of the driver’s vehicle in an adjacent lane. Depending on the system design, additional BSW features may be activated if the system presents an alert and the driver operates their turn signal indicator. In either case, the BSW system provides information intended to assist a driver contemplating or initiating a lane change.

Current BSW systems use camera-, radar-, or ultrasonic-based sensors, or some combination thereof, to detect other vehicles. These sensors are typically located on the sides and/or rear of a vehicle. BSWs may be auditory, visual (most common), or haptic. Visual alerts are usually presented in the

outboard side mirror glass, inside edge of the mirror housing, or at the base of the front A-pillars inside the vehicle. When the BSW system detects that another vehicle traveling in an adjacent lane has entered or is approaching the driver’s blind spot, the BSW visual alert is typically continuously illuminated. However, if the driver engages the turn signal in the direction of the adjacent vehicle while the visual alert is present, the visual alert may transition to a flashing state and/or be supplemented with an additional auditory or haptic alert (e.g., beeping or vibration of the steering wheel or seat, respectively).

Adding BSW systems to NCAP’s ADAS evaluations is appropriate not only because the technology addresses a safety need but also because of consumer interest and known differences in detection capabilities and operating conditions, the latter of which can impact system effectiveness. The general appeal of BSW systems is reflected by the systems’ penetration rates. In the six years between model years 2018 and 2024, the percentage of the fleet fitted with standard BSW systems rose from 5.8 to 57 percent. Further, in market research conducted by Consumer Reports, the organization found an overwhelming majority of vehicle owners were satisfied with BSW technology, and 60 percent of those surveyed believed BSW technology had helped them avoid a crash.<sup>298</sup> Additionally, in a study evaluating the real-world effectiveness of ADAS technologies in model year 2013 to 2017 GM vehicles, UMTRI found BSW system effectiveness increased substantially (i.e., translating to a larger reduction in lane-change crashes) for systems offering longer vehicle detection ranges.<sup>299</sup> <sup>300</sup> Whereas one vehicle’s

BSW system may simply augment a driver’s visual awareness, another may more effectively prevent crashes by warning of potential higher speed differential lane change conflicts. As such, there are reasons to provide consumers with BSW system performance information, regardless of the technology’s high equipment rates and consumers’ positive appreciation for such systems.

Proposed BSW Test Procedure

The Agency proposed to utilize its draft blind spot detection (BSD) test procedure<sup>301</sup> (referred to in this notice as BSW) to assess systems’ performance and capabilities in blind spot related pre-crash scenarios. This test procedure evaluates a vehicle’s BSW system using two tests performed on the test track: the Straight Lane Converge and Diverge Test and the Straight Lane Pass-by Test. These tests assess whether a test vehicle’s (SV’s) BSW system presents a warning when other vehicles (POVs) are within or approaching the driver’s blind spot, or blind zone.<sup>302</sup> In each test, the POV represents a high-production mid-sized passenger car.<sup>303</sup> In the proposed procedure, neither the SV nor POV turn signals may be activated at any point during any test trial. A short description of each proposed test scenario and the

University of Michigan Transportation Research Institute and General Motors LLC, UMTRI–2019–6.

<sup>300</sup> UMTRI found systems having longer vehicle detection ranges provided an estimated 26 percent reduction in lane change crashes, compared to a corresponding non-significant 3 percent reduction for those systems having shorter detection ranges.

<sup>301</sup> Docket No. NHTSA–2019–0102–0010.

<sup>302</sup> A vehicle’s blind zone is defined by two 2.5 m- (8.2 ft.-) wide rectangular regions that extend to the side and rear of the SV and begin at the rearmost part of the SV’s side mirror housing, in the housing’s fully extended operating position, and runs perpendicular to the SV’s longitudinal centerline. The length of the blind zone is dependent upon the speed differential between the SV and the POV. See *Blind Spot Detection System Confirmation Test* for a complete definition.

<sup>303</sup> The POV selected must be 445 to 500 cm (175 to 197 in.) in length and 178 to 193 cm (70 to 76 in.) wide, measured at the widest part of the vehicle exclusive of signal lamps, marker lamps, outside rearview mirrors, flexible fender extensions, and mud flaps. Width is determined with doors and windows closed and the wheels in the straight-ahead position. The color of the vehicle is unrestricted.

<sup>297</sup> Wang, J.S. (2019, March), *Target crash population for crash avoidance technologies in passenger vehicles* (Report No. DOT HS 812 653). Washington, DC: National Highway Traffic Safety Administration.

<sup>298</sup> Monticello, M. (2017, June 29), *The positive impact of advanced safety systems for cars: The latest car-safety technologies have the potential to significantly reduce crashes*, Consumer Reports, <https://www.consumerreports.org/car-safety/positive-impact-of-advanced-safety-systems-for-cars/>.

<sup>299</sup> Leslie, A.J., Kiefer, R.J., Meitzner, M.R., & Flannagan, C.A. (2019), *Analysis of the field effectiveness of General Motors production active safety and advanced headlighting systems*, The

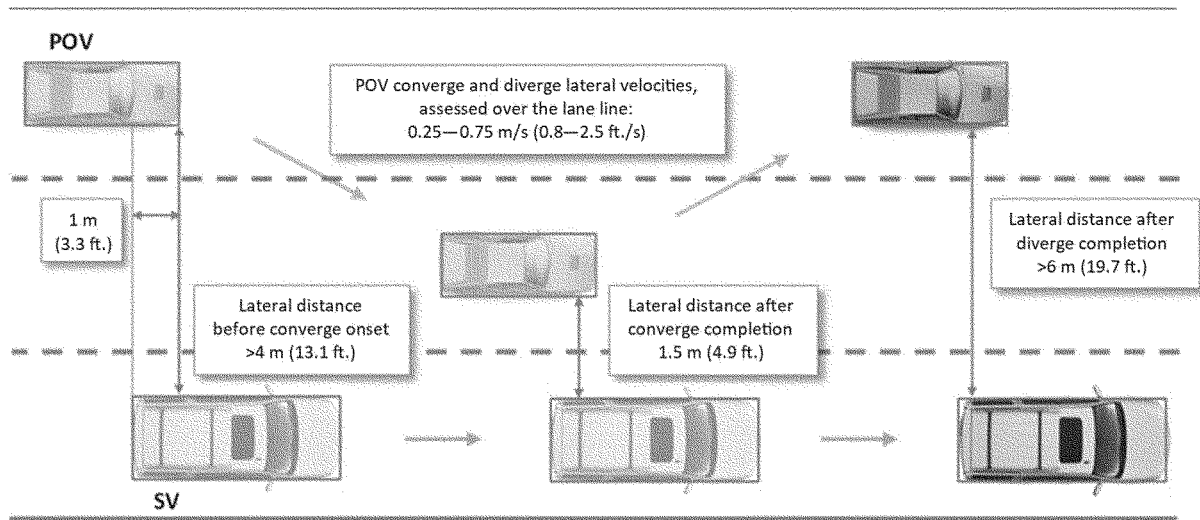
related requirement for a passing result is provided below.

- **Straight Lane Converge and Diverge Test**—The POV and SV are driven parallel to one another in the outbound lanes of a three-lane straight road. Both vehicles are driven at a constant speed of 72.4 kph (45 mph) and are positioned such that the frontmost part of the POV is 1.0 m (3.3 ft.) ahead of the rearmost part of the SV. After 3.0 s of steady-state driving, the POV enters (*i.e.*, converges into) the SV's blind zone by making a single lane change into the lane

immediately adjacent to the SV using a lateral velocity of 0.25 to 0.75 m/s (0.8 to 2.5 ft./s). The period of steady-state driving resumes for at least another 3.0 s and then the POV exits (*i.e.*, diverges from) the SV's blind zone by returning to its original travel lane using a lateral velocity of 0.25 to 0.75 m/s (0.8 to 2.5 ft./s). This test is repeated for a POV approach from both the left and the right side of the SV.

- To pass a test trial, during the converge lane change, the BSW must be presented by a time no later

than 300 ms after any part of the POV enters the SV blind zone and must remain on while any part of the POV resides within the SV blind zone. Additionally, during the diverge lane change, the BSW may remain active when the lateral distance between the SV and POV is greater than 3 m (9.8 ft.) but less than or equal to 6 m (19.7 ft.). The BSW shall not be active once the lateral distance between the SV and POV exceeds 6 m (19.7 ft.).



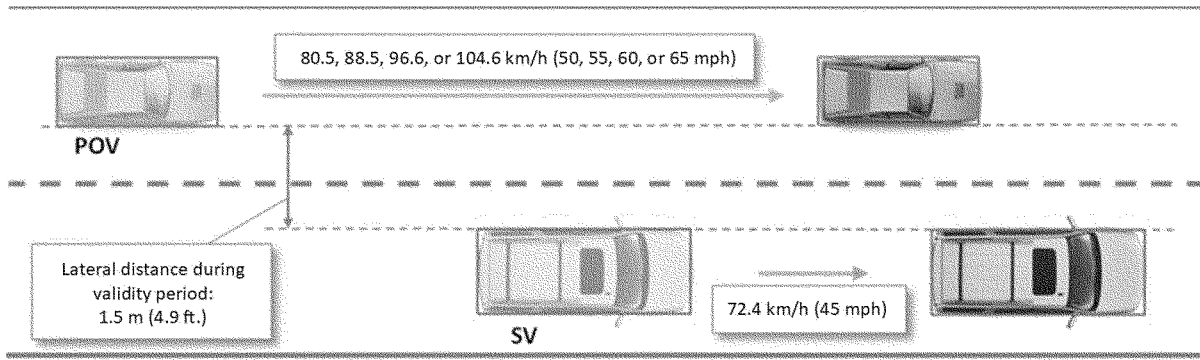
**Figure 13: Straight Lane Converge and Diverge Test, Showing Converge and Diverge from the Left**

- **Straight Lane Pass-by Test**—The POV approaches and then passes the SV while being driven in an adjacent lane. For each trial, the SV is traveling at a constant speed of 72.4 kph (45 mph) whereas the POV is traveling at one of four constant speeds: 80.5, 88.5, 96.6, or 104.6 kph (50, 55, 60, or 65 mph). The lateral distance between the two vehicles, defined as the closest lateral distance between adjacent sides of the

two-dimensional polygons used to represent each vehicle's dimensions, shall nominally be 1.5 m (4.9 ft.) for the duration of the trial. This test is repeated for a POV approach towards the SV from an adjacent lane to the left and to the right of the SV.

- To pass a test trial, the BSW must be presented by a time no later than 300 ms after the frontmost part of

the POV enters the SV blind zone and remain on while the frontmost part of the POV resides behind the frontmost part of the SV blind zone. The BSW shall not be active once the longitudinal distance between the frontmost part of the SV and the rearmost part of the POV exceeds the BSW termination distance specified for each POV speed.



**Figure 14: Straight Lane Pass-by Test, Showing Left-side POV Pass-by**

NHTSA’s proposed test procedure stipulates that each scenario be tested using seven repeated trials for each combination of approach direction (left and right side of the SV) and test speed. This translates to a total of 14 tests

overall for the Straight Lane Converge and Diverge Test and 56 tests overall for the Straight Lane Pass-by Test. In its RFC notice, the Agency proposed that the SV must pass at least five out of seven trials conducted for each

approach direction and test speed to pass the NCAP system performance requirements. Tests that NHTSA proposed for NCAP BSW testing are shown below in Table 21.

**TABLE 21—BLIND SPOT WARNING (BSW) PROPOSED TEST CONDITIONS**

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV direction of approach	Turn signal	Number of trials
Straight Lane Converge and Diverge .....	72.4 (45)	72.4 (45)	Right .....	Disabled .....	7
			Left .....	Disabled .....	7
Straight Lane Pass-by .....	72.4 (45)	80.5 (50)	Right .....	Disabled .....	7
			Left .....	Disabled .....	7
	72.4 (45)	88.5 (55)	Right .....	Disabled .....	7
			Left .....	Disabled .....	7
	72.4 (45)	96.6 (60)	Right .....	Disabled .....	7
			Left .....	Disabled .....	7
	72.4 (45)	104.6 (65)	Right .....	Disabled .....	7
			Left .....	Disabled .....	7

**Model Year 2019 and 2020 Research Testing**

In 2020, NHTSA utilized its proposed BSW test procedure to conduct a series of tests on 10 model year 2019 and 2020 vehicles to evaluate then-current BSW systems.<sup>304</sup> The Agency selected test vehicles equipped with BSI technology, and the same vehicles were also subjected to BSI testing, as detailed in the next section.

The Agency’s testing showed that most of the model year 2019 and 2020 vehicles failed at least one trial throughout the course of testing. Half of

<sup>304</sup> Test reports detailing the results for this research can be found in docket NHTSA–2021–0002.

the vehicles (five out of ten) only failed trials for one of the two test scenarios (i.e., either the Straight Lane Pass-by test or the Straight Lane Converge and Diverge Test). Additional data findings will be discussed in the sections to follow.

**2. Blind Spot Intervention (BSI)**

Blind spot intervention (BSI) systems are similar to AEB systems in that they provide active intervention to help the driver avoid a collision with another vehicle. While BSW systems alert a driver that another vehicle is in their vehicle’s blind spot, BSI systems automatically provide a steering input to guide the driver’s vehicle back into the unobstructed lane when the BSW is

ignored and/or apply the vehicle’s brakes. Thus, BSI systems actively intervene to help a driver avoid collisions with other vehicles that are approaching or operating within the vehicle’s blind spot.

Like BSW systems, BSI systems utilize rear-facing sensors to detect other vehicles next to or behind the vehicle in adjacent lanes. Depending on the design of these systems, BSI activation may or may not require the driver to operate their turn signal indicator during a lane change. In addition, some BSI systems may only operate if the vehicle’s BSW system is also enabled.

Unlike BSW systems, BSI systems are not widely available in the current fleet, with only 29 percent of model year 2024 vehicles equipped with BSI systems as standard equipment. NHTSA is unaware of any effectiveness studies for this technology, which is only beginning to penetrate the fleet. Nonetheless, as mentioned previously, the Agency expects that active safety technologies are more effective than warning technologies. For example, UMTRI's study of 2013–2017 GM vehicles concluded that AEB is more effective than FCW alone, and that LKA is more effective than LDW.<sup>305</sup> The same relationship will likely hold true for blind spot systems, and that BSI will be more effective than BSW alone. Also, adopting ADAS technologies such as BSI into NCAP should encourage the development and robustness of enhanced BSW system capabilities (e.g., motorcycle and bicycle detection).

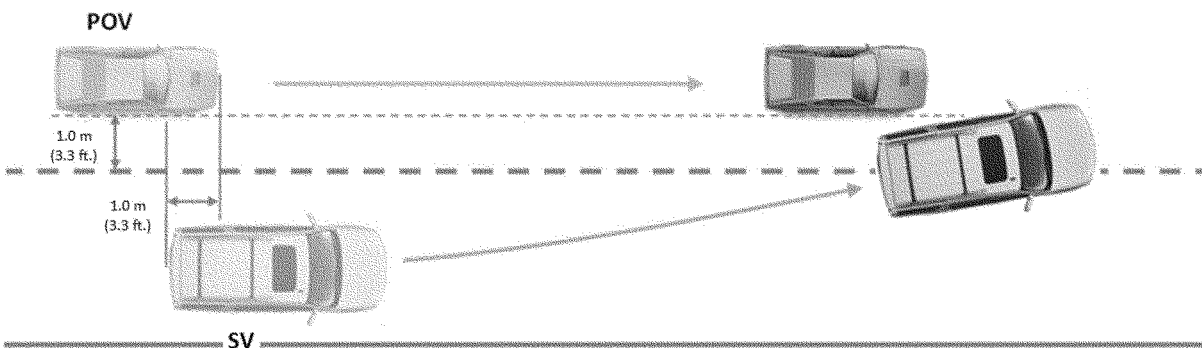
By including BSI as a recommended technology in NCAP, NHTSA anticipates manufacturers will equip a larger portion of the fleet with BSI systems. Furthermore, by adopting objective test procedures to gauge system performance for NCAP's assessments, the Agency will best ensure that future BSI systems most effectively address the safety need stemming from lane change and merge crashes.

#### Proposed BSI Test Procedure

NHTSA proposed to use its published draft test procedure titled, "Blind Spot Intervention System Confirmation Test," to evaluate the performance of vehicles equipped with BSI technology in NCAP. The Agency's test procedure consists of three scenarios: SV Lane Change with Constant Headway, SV Lane Change with Closing Headway, and SV Lane Change with Constant Headway, False Positive Assessment. In the first two scenarios, a test vehicle (SV) initiates a lane change into an adjacent lane while a single other vehicle (POV) resides within the SV's blind zone (Scenario 1) or approaches it from the rear (Scenario 2). The third scenario is used to evaluate the propensity of a BSI system to activate inappropriately in a non-critical driving scenario that does not present a safety risk to the occupants in the SV. In each of the tests, the POV is a strikeable vehicle test device with the characteristics of a compact passenger car. The SV's turn signal is activated in each test trial. A short description of each test scenario and the proposed evaluation criteria are detailed below.

—SV Lane Change with Constant Headway Test—The POV is driven at 72.4 kph (45 mph) in a lane adjacent and to the left of the SV also traveling at 72.4 kph (45 mph)

with a constant longitudinal offset such that the frontmost part of the POV is 1 m (3.3 ft.) ahead of the rearmost part of the SV, which is laterally offset from the center of its travel lane. After a short period of steady-state driving, the SV driver engages the left turn signal indicator at least 3 s after all pre-SV lane change test validity criteria have been satisfied. Within  $1.0 \pm 0.5$  s after the turn signal has been activated, the SV driver initiates a manual<sup>306</sup> lane change, and follows an 800 m (2,625 ft.) radius curved path towards the POV's travel lane. The SV driver then releases the steering wheel within 250 ms of the SV exiting the curve so as to achieve a steady state lateral velocity of  $0.7 \pm 0.1$  m/s ( $2.3 \pm 0.3$  ft./s) relative to the line separating the SV and POV travel lanes. To pass a test trial, the BSI system must intervene to prevent any contact between the SV and the POV. Additionally, the SV BSI intervention shall not cause a secondary departure (i.e., the SV BSI intervention shall not cause the SV to travel 0.3 m (1.0 ft.) or more beyond the inboard edge of the lane line separating the SV travel lane from the lane adjacent and to the right of it within the validity period).



**Figure 15: SV Lane Change with Constant Headway Test**

- SV Lane Change with Closing Headway Test—The POV is driven at a constant speed of 80.5 kph (50 mph) towards the rear of the SV in an adjacent lane to the left of the SV, which is laterally offset from the center of its travel lane and traveling at a constant speed of 72.4 kph (45 mph). During the

test, the SV driver engages the left turn signal indicator when the POV is  $4.9 \pm 0.5$  s from a vertical plane defined by the rear of the SV and perpendicular to the SV travel lane. Within  $1.0 \pm 0.5$  s after the turn signal has been activated, the SV driver initiates a manual lane change and follows an 800 m (2,625 ft.)

radius curved path towards the POV's travel lane. The SV driver then releases the steering wheel within 250 ms of the SV exiting the curve so as to achieve a steady state lateral velocity of  $0.7 \pm 0.1$  m/s ( $2.3 \pm 0.3$  ft./s) relative to the line separating the SV and POV travel lanes.

—To pass a test trial, the BSI system

such inputs to maximize accuracy, repeatability, and test efficiency.

<sup>305</sup> Leslie, A.J., Kiefer, R.J., Meitzner, M.R., & Flannagan, C.A. (2019), *Analysis of the field effectiveness of General Motors production active safety and advanced headlighting systems*, The

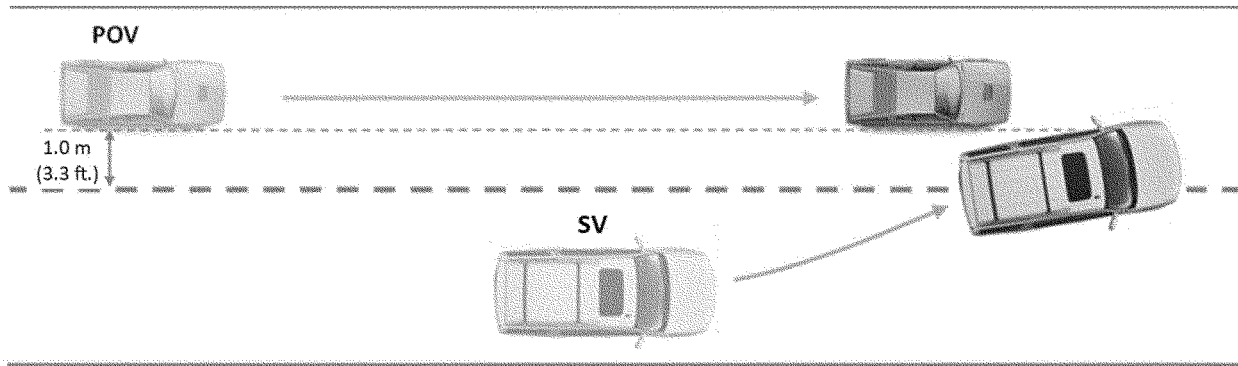
University of Michigan Transportation Research Institute and General Motors LLC, UMTRI–2019–6.

<sup>306</sup> "Manual" refers to an externally commanded steering input. NHTSA will use a steering robot for

must intervene to prevent any contact between the SV and the POV. Additionally, the SV BSI intervention shall not cause a

secondary departure (*i.e.*, the SV BSI intervention shall not cause the SV to travel 0.3 m (1.0 ft.) or more beyond the inboard edge of the lane

line separating the SV travel lane from the lane adjacent and to the right of it within the validity period).



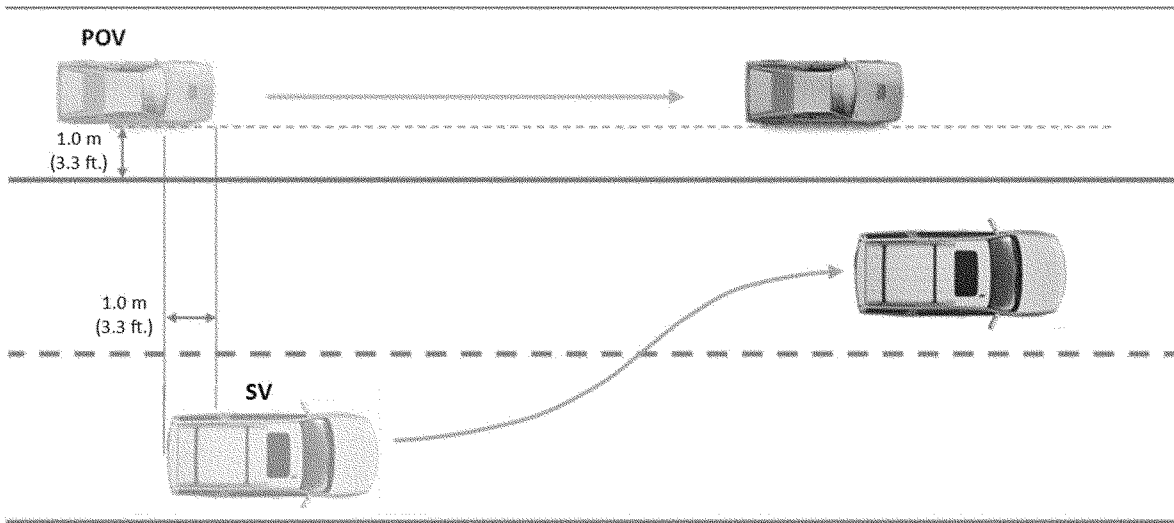
**Figure 16: SV Lane Change with Closing Headway Test**

- SV Lane Change with Constant Headway, False Positive Assessment Test—The POV is driven at 72.4 kph (45 mph) in a lane that is two lanes to the left of the SV’s initial travel lane with a constant longitudinal offset such that the frontmost part of the POV is 1 m (3.3 ft.) ahead of the rearmost part of the SV. The SV is laterally offset from the center of its travel lane and also travelling at 72.4 kph (45 mph). The SV driver engages the left turn signal indicator at least 3 seconds after all pre-SV lane

change test validity criteria have been satisfied. Within  $1.0 \pm 0.5$  seconds after the turn signal has been activated, the SV driver initiates a manual lane change, and follows a defined path into the left adjacent lane (the one between the SV and POV), approaching the center lane line at a constant lateral velocity of  $0.7 \pm 0.1$  m/s ( $2.3 \pm 0.3$  ft./s). For this test, the driver does not release the steering wheel.

—To pass a test trial, the SV’s BSI system must not intervene during

any valid trials; the lane change will not result in an SV-to-POV impact. To determine whether a BSI intervention occurred, the yaw rate data collected for the SV during the individual trials performed in this scenario are compared to a baseline composite. After being aligned in time to the baseline, the difference between the data must not exceed 1 degree/second within the test validity period.



**Figure 17: SV Lane Change with Constant Headway, False Positive Assessment Test**

Currently, for the three BSI test scenarios, specific test procedures and specifications are dependent upon the SAE Driving Automation Level being

assessed.<sup>307</sup> The four driving automation conditions included in the

<sup>307</sup> Society of Automotive Engineers (SAE) Standard J3016\_202104, Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles.

test procedure are: (1) with manual speed control and Lane Centering Assistance (LCA) off (SAE Driving Automation Level 0), (2) with cruise control enabled and LCA off (also considered SAE Level 0), (3) with ACC



enabled and LCA off (SAE Level 1), and (4) with ACC on and LCA on (initially) and an automatic SV lane change occurs (SAE Levels 2 or 3). For condition 4, SV lateral lane position and lane change/

path tolerance specifications are controlled by the vehicle, not the driver. In its March 2022 RFC notice, NHTSA stated that it plans to use the [ABD] GVT Revision G as a strikeable vehicle test device when BSI is added to NCAP as a recommended ADAS technology to

be consistent with Euro NCAP’s ADAS test procedures that specify a strikeable vehicle test device. Tests that NHTSA proposed to complete for NCAP BSI testing are shown below in Table 22.

TABLE 22—BLIND SPOT INTERVENTION (BSI) PROPOSED TEST CONDITIONS

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	Lane change direction	Turn signal	Number of trials
SV Lane Change with Constant Headway .....	72.4 (45)	72.4 (45)	Left .....	Enabled .....	7
SV Lane Change with Closing Headway .....	72.4 (45)	80.5 (50)	Left .....	Enabled .....	7
SV Lane Change with Constant Headway, False Positive Assessment.	72.4 (45)	72.4 (45)	Left .....	Enabled .....	7

Model Year 2019 and 2020 Research Testing

NHTSA utilized its proposed BSI test procedure to conduct a series of research tests on model year 2019 and 2020 vehicles to assess the performance of then-current BSI systems.<sup>308</sup> When selecting vehicles for testing, an attempt was made to choose one test vehicle from as many manufacturers as possible that had implemented BSI technology at the time. As mentioned previously, selected vehicles were also subjected to BSW testing. An ABD GVT Revision G represented the POV during testing. Results from this test series suggested there is an opportunity for performance improvement, as most vehicles failed both the SV Lane Change with Constant Headway Tests and the SV Lane Change with Closing Headway Tests.

B. Linking Proposed BSW and BSI Test Scenarios to Real-World Crashes

As mentioned in the March 2022 RFC notice, the BSW and BSI tests proposed by the Agency represent pre-crash scenarios that correspond to a substantial portion of fatalities and injuries observed in real-world lane change crashes. A review of Volpe’s 2011–2015 data set showed that, for crashes where posted speed limit was known, approximately 29 percent of fatalities and 70 percent of injuries in lane change crashes occurred on roads with posted speeds of 72.4 kph (45 mph) or lower.<sup>309 310</sup> For crashes where the travel speed was reported in FARS and GES, approximately 44 percent of

fatalities and 81 percent of injuries occurred at speeds of 72.4 kph (45 mph) or lower.<sup>311</sup> Volpe found that speeding was a known factor in 18 percent of the fatal lane change crashes and 3 percent of lane change crashes that resulted in injuries. This suggests that posted speed may correspond well to travel speed in most lane change crashes.<sup>312 313</sup> Roadway alignment and grade for real-world lane change crashes also align with those used in NHTSA’s procedures. For those crashes where roadway alignment was known in Volpe’s 2011–2015 FARS and GES data set, 88 percent of fatal and 93 percent of injurious lane change crashes occurred on straight roads.<sup>314</sup> Furthermore, 77 percent and 86 percent of fatal and injurious lane change crashes, respectively, occurred on level roadways.<sup>315</sup>

C. Summary of Comments, Response to Comments, and Agency Decisions

1. Blind Spot Technology Inclusion in General

The Agency noted that commenters overwhelmingly supported the addition of BSW in response to its December 2015 notice regarding NCAP updates,

and these sentiments were reiterated in the comments received in response to the March 2022 RFC notice. Many groups and individuals submitted comments supporting inclusion of both BSW and BSI in NCAP. MEMA expressed that BSW and BSI offer “significant” safety benefits. ITS America agreed that NHTSA provided sufficient evidence for benefits. Advocates and CFA noted that the test criteria seemed reasonable and that automatic intervention with BSI will provide greater benefits than BSW alone.

Honda supported the eventual inclusion of BSW and BSI technologies based on potential benefits but requested that NHTSA use a phased approach when adding these technologies to NCAP. The automaker further noted that the Agency included the warning technologies LDW and FCW first before proposing to add the respective active technologies, LKA and AEB, in NCAP. Thus, the Agency should consider following the same process for blind spot technologies. Although Honda acknowledged that “active safety technologies are more effective than warning technologies,” the manufacturer stated that it was not aware of specific effectiveness data for BSI, as it is relatively new compared to the other three new technologies proposed (i.e., BSW, LKA, and PAEB). As such, Honda stated that BSI does not fulfill the Agency’s four prerequisites for NCAP inclusion at the current time and requested that NHTSA wait until effectiveness data becomes available for BSI before including it in an NCAP rating.

GM and Auto Innovators agreed with Honda’s sentiments regarding the absence of effectiveness data for BSI. However, Auto Innovators acknowledged there is some effectiveness data available for BSW, “depending on system design.” The

<sup>308</sup> Test reports detailing the results for this research can be found in docket NHTSA–2021–0002.

<sup>309</sup> The posted speed limit was either not reported or was unknown in 2 percent of fatal lane change crashes and 18 percent of lane change crashes that resulted in injuries.

<sup>310</sup> The lane change pre-crash scenarios referenced included (1) turning/same direction, (2) parking/same direction, (3) changing lanes/same direction, and (4) drifting/same direction crashes.

<sup>311</sup> The travel speed was either not reported or was unknown in 60 percent of fatal lane change crashes and 68 percent of lane change crashes that resulted in injuries.

<sup>312</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>313</sup> It was unknown or not reported whether speeding was a factor in 3 percent of fatal lane change crashes and 7 percent of lane change crashes that resulted in injuries.

<sup>314</sup> Roadway alignment was unknown or not reported in 1 percent of fatal lane change crashes and 4 percent of lane change crashes that resulted in injuries.

<sup>315</sup> Roadway grade was unknown or not reported in 5 percent of fatal lane change crashes and 18 percent of lane change crashes that resulted in injuries.

groups also stated that while BSW and BSI technologies may be helpful, the target populations for BSW and BSI are relatively small. Given these concerns, Auto Innovators did not support adding BSI into an ADAS rating and requested that NHTSA include BSI research in the NCAP roadmap. However, the group had no objection to adding BSI as an “NCAP Recommended Technology” and was not opposed to including BSW in the program. Meanwhile, GM did not recommend including either BSW or BSI. The manufacturer stated that “any future BSI field effectiveness studies need to account for redundancies with other related ADAS features with proven safety benefits, such as LKS, LDW, and [GM’s] Lane Change Alert (“LCA”).” Regarding BSW inclusion, GM shared data from a 2022 effectiveness study of over 10.9 million GM model year 2013 to 2020 vehicles, which found that NHTSA’s proposed BSW technology did not yield statistically significant field safety benefits. The automaker asserted that “the non-statistically significant level observed for [GM’s] BSW (which is a short-range detection system) was less than half that observed for [the manufacturer’s] LCA (which can be thought of as “Long Range” BSW), which yielded statistically significant benefits.”

## 2. Test Conditions for BSW Testing, Including the Straight Lane Pass-by Test Scenario With Varying Speed Differentials

As previously described, NHTSA’s March 2022 proposal for NCAP BSW test scenarios included a Straight Lane Converge and Diverge test scenario and a Straight Lane Pass-by test scenario. Within each scenario, NHTSA proposed to perform testing in multiple test conditions by varying POV approach directions. Within the Straight Lane Pass-by scenario, a variety of POV speeds were also introduced.

The Agency also expressed its interest in minimizing the testing burden whenever possible. As such, NHTSA requested comments on whether all test conditions should be performed to address real-world concerns, and if not, which ones should be prioritized. Specifically, the Agency mentioned possibly incorporating only the most challenging test conditions, selecting the highest and lowest speed conditions, and/or assuming symmetry to test only one side of the SV and apply results to the other side.

NHTSA also recognized that lane-change crashes associated with high speed differentials between involved vehicles may be more severe than those

in which vehicle speeds are more similar. Since the ability to mitigate these higher-severity crashes is desirable, NHTSA requested comment on use of the Straight Lane Pass-by test procedure with varying POV-to-SV speed differentials to distinguish between basic and advanced BSW system capabilities. The Agency suggested that an SV that can only satisfy the BSW activation criteria when the POV approaches with a low relative velocity may be considered as having basic BSW capability, whereas a vehicle that can look further rearward to sense a passing vehicle travelling at a much higher speed may be considered to have superior detection abilities. The Agency added that the ability of a BSW system to provide long-range vehicle detection could increase the effectiveness of BSI systems and SAE Driving Automation Level 2 partial driving automation systems that incorporate automatic lane change features as well.

## Summary of Comments

TRC suggested the scenarios proposed were sufficient and offered “good coverage” of real-world cases. Bosch also agreed that both proposed scenarios should be included, with the Straight Lane Pass-by Test differentiating between basic and advanced system capabilities and the Straight Lane Converge and Diverge Test assessing whether the SV can sense POVs travelling at the same speed. CAS stated it would be premature to only consider testing the most stringent scenarios, citing concern that manufacturers would begin designing to the test rather than to a range of conditions. The group further stated that the Agency should perform all test scenarios and conditions to ensure it addresses the variety of real-world conditions. Toyota noted that it has concerns regarding the timely release of information to consumers. Toyota also opined that if testing at a certain speed or in a specific scenario will adequately ensure acceptable performance in the entire speed range or in all similar cases, the Agency should consider running that test speed/scenario.

Tesla recommended NHTSA focus its attention on high-risk cases where BSW performance tends to be most problematic, specifically noting situations with a high speed differential. Similarly, FCA and Bosch expressed favor with testing first at the most stringent test case and, should the vehicle fail, slowly decreasing the stringency until the vehicle passes. The manufacturers conveyed that this strategy would allow NHTSA to more quickly determine the highest speed at

which the BSW system can reliably function. FCA noted that manufacturers are most likely already testing their vehicles at mid-range speeds to ensure system robustness.

Conversely, ZF Group, ASC, BMW, Rivian, Auto Innovators, and Toyota recommended that NHTSA test at both low and high speeds. ZF Group and ASC mentioned that, in cases where there is a large performance differential between low and high speeds, a mid-range test speed may also be appropriate. Rivian noted that even with a mid-range test added, this strategy would result in a reduction of test speeds from four to three. Though FCA suggested starting at the most stringent test case, the automaker also noted that the Agency could test at low and high speeds as defined by each manufacturer.

ASC also supported NHTSA performing a low-speed SV scenario with high relative POV speed to approximate cases where the SV is in a slower-moving lane but intends to change into a faster-moving lane, as is the case in traffic congestion. Similarly, Vayyar requested that low-speed, or even stationary, POV tests be conducted to address real-world cases where target vehicles are stopped or moving slowly.

Auto Innovators asserted that the test speeds selected should be based on several factors: test laboratory specifications such as available test lane length, real-world crash data, capabilities of the POV vehicle test device, and the minimum operational speed of BSW systems. GM agreed with this justification for test speed selection. Advocates stated that the chosen scenarios and conditions should be able to help consumers identify vehicles which meet a minimum performance and discern between systems of minimal and higher performance.

Regarding symmetry, Toyota mentioned left-to-right symmetry specifically and suggested that the Agency could randomize the test side selected to encourage symmetrical designs. ZF Group, Tesla, BMW, ASC, Auto Innovators, and GM also noted that assuming symmetry would reduce the number of tests needed, stating data could be provided to prove symmetrical responses. However, DRI, Rivian, and Bosch asserted that NHTSA should still consider testing both sides of the vehicle. DRI explained that, in its experience, BSW performance differs from one side of the SV to the other. Rivian stated that performance can differ between sides due to differences in radar hardware location and that testing only one side of the vehicle might lead to BSW systems that do not offer strong real-world safety

performance. Rivian also noted that manufacturers may ignore any discrepancies in left-to-right side design. Finally, Bosch stated both sides of the vehicle should be tested to ensure system robustness.

#### Straight Lane Pass-by Test With Speed Differentials To Discern Differences in Performance

Bosch, ZF Group, Toyota, CAS, BMW, Tesla, FCA, Auto Innovators, GM, and ASC agreed that NHTSA could vary test speeds in the Straight Lane Pass-by test scenario to differentiate performance between vehicles. BMW's support was bolstered by its assertion that the Straight Lane Pass-by Test evaluates the capability of both hardware (sensor) and software (functional logic). ZF Group stated that systems which mitigate crashes with higher speed differentials are more likely to improve safety in a broad range of lane-change events and therefore should warrant a higher score or rating. ASC echoed these sentiments, noting that high relative speed differentials between lanes can occur during real-world driving even though speed limits exist because of road work, traffic, and other commonly encountered scenarios. Further, GM suggested 24.1, 32.2, 48.3, and 64.4 kph (15.0, 20.0, 30.0, and 40.0 mph) speed differentials, and mentioned that, in its experience, varying test speeds is not as effective at distinguishing BSW performance as varying the speed differentials between the POV and the SV.

Toyota noted that drivers need as much time to react to threats as possible and speed-based warning timing is preferable since a POV approaching at a high speed will require relatively early warning. Auto Innovators reiterated this by stating that testing at varying speeds could differentiate products that offer detection within the blind zone only (basic performance capability) versus products that have an expanded rearward field of view to detect a vehicle advancing at a higher rate of travel (advanced performance capability). ASC also discussed this expanded rearward field of view, detailing the difference between Blind Spot Assist (BSA) systems, which are meant to mitigate short-range POV-SV scenarios, and Lane Change Assist (LCA) systems, which address longer-range POV-SV scenarios. The group voiced support for both scenarios proposed, stating that the Straight Lane Converge and Diverge test is a suitable evaluation for BSA systems while the Straight Lane Pass-by test is best for LCA systems. ASC also stated that LCA systems are more commonly found in

countries without posted speed limits, whereas BSA is typically offered in countries where the posted speed limit is 80 mph or less. ASC suggested that, in these latter countries, the speed differential between lanes and vehicles is generally low. Finally, GM stated that only long-range LCA systems have been shown to reduce feature-relevant lane-change crashes, and therefore, only recommended that the Straight Lane Pass-by test be performed.

#### Response to Comments and Agency Decisions

This notice finalizes NHTSA's proposal including both the Straight Lane Converge and Diverge and Straight Lane Pass-by scenarios for its BSW tests.

For the Straight Lane Converge and Diverge test (shown in Figure 13), the test will begin with the POV two lanes away from the SV on a straight road. The vehicles will be positioned such that the frontmost part of the POV is 1.0 m (3.3 ft.) ahead of the rearmost part of the SV. Both vehicles will be driven in this formation at a constant speed of 72.4 kph (45 mph) for 3.0 seconds. The POV will then perform a single lane change into the lane adjacent to the SV (*i.e.*, the center lane) using a lateral velocity of 0.25 to 0.75 m/s (0.8 to 2.5 ft./s). Once the lane change is completed, the POV will continue to be driven in the lane adjacent to the SV for at least 3.0 seconds, and then will perform a lane change back into its original outboard lane using a lateral velocity of 0.25 to 0.75 m/s (0.8 to 2.5 ft./s). This test will be repeated for a POV approach from both the left and the right side of the SV (with and without the SV's turn signal engaged).

For the Straight Lane Pass-by Test (shown in Figure 14), the POV will approach and then pass the SV while being driven in an adjacent lane on a straight road. For each trial, the SV will travel at a constant speed of 72.4 kph (45 mph) whereas the POV will travel at one of four constant speeds: 80.5, 88.5, 96.6, or 104.6 kph (50, 55, 60, or 65 mph). The lateral distance between the two vehicles will nominally be 1.5 m (4.9 ft.) for the duration of each trial. This test will be repeated for a POV approach towards the SV from an adjacent lane to the left and to the right of the SV (with and without the turn signal engaged).

The Agency maintains that both of these BSW scenarios align with real-world data and are therefore appropriate for inclusion in NCAP. As mentioned previously, the 72.4 kph (45 mph) SV test speed adopted for both BSW scenarios proposed was found to cover a significant portion of fatalities and

injuries, and an overwhelming majority of lane-change crashes occurred on straight roads. The adopted scenarios also encompass both ways a vehicle may approach another vehicle's blind zone when the driver does not first directly see the vehicle: laterally from two lanes away and longitudinally from behind, on both sides of the vehicle.

For both test scenarios, the POV is defined in NHTSA's updated BSW test procedure as either the ABD GVT Revision G or a high-production, compact passenger car.<sup>316</sup> NHTSA added the option to use a surrogate vehicle as the POV for BSW testing to align with the option provided in its BSI testing procedure. However, the Agency will use an actual vehicle as the POV during BSW testing conducted for NCAP assessments. This decision should not preclude vehicle manufacturers from using the ABD GVT Revision G in their internal testing or preclude NHTSA from revisiting its decision in the future.

At this time, both BSW test scenarios will be conducted during daylight conditions only. Real-world crash data gathered from 2011 to 2015 suggests that most lane-change crashes (62 percent of fatal lane-change crashes and 76 percent of injurious lane-change crashes) occurred annually, on average, during daylight hours. For future iterations of this consumer information program, NHTSA plans to reevaluate the real-world crash data and may adjust the test conditions accordingly.

#### Straight Lane Converge and Diverge Test

NHTSA received few comments directly related to the Straight Lane Converge and Diverge test. Of those commenters specifically addressing this test scenario, all but GM were in favor of its inclusion. Although NHTSA has taken into consideration GM's statements that this scenario may be less effective at reducing lane change crashes compared to the Straight Lane Pass-by scenario, the Agency agrees with Bosch that the Straight Lane Converge and Diverge test will best ensure that a vehicle's BSW system can detect a vehicle entering the blind spot while both vehicles are travelling at the same speed. Since NHTSA found that only half of the tested vehicles (five out of ten models) passed every trial run

<sup>316</sup> The POV selected must be 445 to 500 cm (175 to 197 in.) in length and 178 to 193 cm (70 to 76 in.) wide, measured at the widest part of the vehicle exclusive of signal lamps, marker lamps, outside rearview mirrors, flexible fender extensions, and mud flaps. Width is determined with doors and windows closed and the wheels in the straight-ahead position. The color of the vehicle is unrestricted.

conducted for the Straight Lane Converge and Diverge scenario during its model year 2019 and 2020 research testing series,<sup>317</sup> the Agency reasons that it is appropriate to move forward with including the Straight Lane Converge and Diverge test scenario in its BSW test series for NCAP to ensure adequate BSW system performance for this real-world situation. The test will be performed four times—twice with the POV approaching the SV from the left side (once with and once without turn signal engagement), and twice with the POV approaching from the right, as proposed (once with and once without turn signal engagement). This should ensure that the SV can detect a POV entering its blind spot from either lateral direction. If the SV does not provide a passing warning for a run conducted on one side of the vehicle, NHTSA will discontinue BSW testing for that vehicle model and the test will not be repeated for the vehicle's other side.

The prescribed test speed for both the SV and POV will be 72.4 kph (45.0 mph), as proposed. In cases where both the POV and the SV are traveling at the same speed, there is no longitudinal speed differential; thus, the speed at which the test is conducted is less relevant. However, as mentioned, for injurious lane-change crashes from 2011 to 2015 where posted speed limit was known, nearly three-quarters (70 percent) occur on roadways with posted speed limits of 72.4 kph (45.0 mph) or less on average annually, suggesting that the proposed speed is representative of real-world crashes. Furthermore, a 72.4 kph (45.0 mph) test speed is high enough that it should exceed most, if not all, vehicle models' BSW minimum speeds for activation. Specifically, data from the Agency's annual information collection from vehicle manufacturers showed a minimum operational speed range of 0 to 32 kph (0 to 19.9 mph) for model year 2024 vehicles, with the average minimum operational speed being 10 kph (6.2 mph). The Agency also recognizes that a higher test speed may require a larger test area, as both the POV and the SV must accelerate to and maintain the test speed until testing is completed. As Auto Innovators and GM noted, the Agency is aware that it must remain mindful of available test laboratory lane length when developing test specifications. Given these considerations, a test speed of 72.4 kph (45.0 mph) for both the POV and the SV is reasonable for the Straight Lane Converge and Diverge test at this time.

<sup>317</sup> One additional vehicle passed the left POV approach direction tests but did not pass one trial (of seven) when the POV approached from the right.

However, the Agency may consider increasing test speeds in the future if doing so would better address the large percentage of fatalities (*i.e.*, approximately 70 percent) in lane-change crashes that occur at higher posted speeds, though in relatively low numbers.<sup>318</sup>

#### Straight Lane Pass-by Test Speeds

The second BSW test scenario that this notice finalizes for inclusion into NCAP is the Straight Lane Pass-by test. NHTSA notes that Euro NCAP currently conducts a Blind-Spot Monitoring scenario similar to NHTSA's Straight Lane Pass-by scenario. In the Euro NCAP test, a POV passes the SV in an adjacent lane; the vehicles travel at 80 kph (49.7 mph) and 72 kph (44.7 mph), respectively. Vehicles receive points toward Euro NCAP's Human Machine Interface (HMI) score if the vehicle provides continuous visual blind spot status information while the POV resides in the SV's designated blind spot area.<sup>319</sup> NHTSA's procedure expands upon the Euro NCAP procedure through the inclusion of three additional higher POV speeds, which increase the speed differential between the POV and SV. Four separate conditions are conducted in total, with SV/POV speeds of 72.4/80.5, 72.4/88.5, 72.4/96.6, and 72.4/104.6 kph (45.0/50.0, 45.0/55.0, 45.0/60.0, and 45.0/65.0 mph, respectively). These SV/POV speed pairs result in speed differentials equaling 8.1, 16.1, 24.2, and 32.2 kph (5.0, 10.0, 15.0, and 20.0 mph), respectively.

The Agency acknowledges several commenters suggested a reduction in the number of test conditions for the Straight Lane Pass-by test to reduce test burden. However, NHTSA's BSW research test data from model year 2019 and 2020 vehicles demonstrates the need for testing across all proposed speed combinations. Specifically, two of the ten vehicle models tested passed the lowest 8.1 kph (5 mph) speed differential test but failed<sup>320</sup> all remaining higher speed differential tests.<sup>321</sup> Further, two of the remaining eight vehicle models failed when tested at the lowest speed differential (8.1 kph, or 5 mph), while successfully passing

<sup>318</sup> In its 2011–2015 data set, Volpe found that for the 644,099 lane change crashes occurring annually, on average, 752 resulted in a fatality. This translates to approximately 526 fatalities that occurred for posted speeds exceeding 72.4 kph (45 mph).

<sup>319</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Assessment Protocol—Safety Assist—Collision Avoidance, Version 10.4*.

<sup>320</sup> A failing result was indicative of the SV's inability to meet performance criteria on the first run and/or subsequent runs.

<sup>321</sup> NHTSA–2021–0002–0002.

all higher speed differential tests. Further, of the remaining six vehicles, one passed the highest speed differential test (32.2 kph, or 20 mph) but failed tests in at least one low-to-mid-range speed differential.<sup>322</sup> This demonstrates that not all current BSW systems struggle more with greater speed differential pass-by tests. The most stringent test case, albeit a lower or higher speed differential, is unclear. It may be true, as FCA suggested, that vehicle manufacturers test their own vehicles at mid-range speeds. However, NHTSA will evaluate all four proposed test speed pairings to better evaluate BSW performance in straight lane pass-by conditions where the SV is traveling at a moderate speed.

Despite the recommendation of several commenters, the Agency is not adopting additional test conditions that include higher speed differentials for its Straight Lane Pass-by tests. This is because to increase the speed differential between the SV and the POV, either the SV speed must be reduced or the POV speed must be increased. A reduction of the SV speed is inappropriate at this time because many BSW systems have minimum speed thresholds which would not be met at a lower speed. Increasing the POV speed also does not currently seem feasible because test facilities may not have adequate lane length available to conduct valid tests. Furthermore, the Agency did not initially propose higher speed test conditions, and it has not conducted research tests to evaluate cases where the speed delta is greater than 32.2 kph (20.0 mph). The Agency may adjust the Straight Lane Pass-by test conditions in the future when laboratory testing proves feasible.

Further, the Agency is not adopting a test condition where the SV is traveling at very low speed and contemplating a lane change into a much faster-flowing lane, despite the request of several commenters. These cases occur when traffic flow in a travel lane is slowed (*e.g.*, increased traffic, construction, or there is a disabled vehicle ahead). As mentioned, there are a range of minimum operating speeds for BSW systems, some of which are likely higher than the speed at which a vehicle in this presented stop-and-go scenario would be traveling. For instance, in data supplied by vehicle manufacturers for the model year 2024 fleet, the Agency found that, for those vehicles equipped with a BSW system, approximately 12 percent have a minimum BSW operating speed exceeding 20 kph (12.4 mph). Further, additional research would need

<sup>322</sup> NHTSA–2021–0002–0002.

to be conducted to better understand the conditions, frequency, and severity of this crash problem. This is because unlike other scenarios, posted speed limits for the roads on which this type of scenario occurs likely do not correlate with the travel speed of the SV prior to attempting a lane change due to the unexpected nature of the situation. Thus, travel speed must be used to understand the scope of the problem but is unknown for many crash cases. Crash data from 2011–2015 does show that in 16 percent of fatal lane change/merge crashes and in 23 percent of injurious crashes, travel speed was 64.4 kph (40.0 mph) or lower. However, in 60 percent of fatal crash cases and 68 percent of injurious crashes, the travel speed prior to the crash was unknown.

For NCAP's Straight Lane Pass-by testing, NHTSA will conduct the lowest speed differential condition (SV/POV speeds of 72.4/80.5 kph (45.0/50.0 mph)) first. If the SV provides a passing warning during the run, the POV speed will incrementally increase by 8.0 kph (5.0 mph) and testing will continue, with one run conducted per speed differential condition (each with and without the turn signal engaged), until a POV speed of 104.6 kph (65.0 mph) is reached. Testing will then be repeated following a similar methodology for POV movement on the opposite side of the SV. If, for any speed differential condition, the SV does not provide a passing warning, NHTSA will discontinue BSW testing for that vehicle model. Test runs for a given speed differential will not be repeated upon a vehicle's failure to appropriately warn—a methodology consistent with that used for NCAP's AEB and PAEB performance evaluations. This test methodology aligns with those adopted for the other NCAP AEB and PAEB tests, in which the Agency chose an incremental approach to increasing test speeds.

#### Differentiating BSW System Performance

NHTSA will not differentiate BSW system performance with this upgrade. A vehicle passing three of the four test speed conditions in the Agency's Straight Lane Pass-by test will not receive more credit than a vehicle that passes two. Instead, a vehicle will need to pass all four Straight Lane Pass-by tests for both sides of the vehicle (with and without the turn signal engaged) and the Straight Lane Converge and Diverge test for both sides of the vehicle (with and without the turn signal engaged) to receive credit for its BSW system. Based on this, NHTSA concludes that FCA and Bosch's suggestion to determine the highest

speed at which BSW can function is unnecessary. This decision still encourages manufacturers to include technology addressing a range of lane-change events, as ZF Group requested, because it ensures that the vehicle must pass all BSW test conditions for each of the two test scenarios. Further, as ASC asserted, by including the Straight Lane Converge and Diverge test in addition to the Straight Lane Pass-by test, as well as both low and high speed differential conditions for the latter, NHTSA will be able to effectively assess performance for a variety of BSW system types (e.g., BSA and LCA). Specifically, for the Straight Lane Converge and Diverge test, the SV must detect a POV travelling at the same speed at a close distance, and BSA systems can best address such situations. For the Straight Lane Pass-by test, the SV must detect a faster-moving POV farther away to issue the BSW at the appropriate time, and LCA systems are best able to address these conditions. Thus, the Agency's BSW testing will ensure vehicles' BSW systems provide acceptable functionality to cover this range of real-world situations.

NHTSA will not tailor testing to each manufacturer or model but will instead apply the same test conditions to each vehicle model assessed. A methodology allowing each manufacturer to supply its own minimum and maximum POV speeds for the Agency's assessments, as suggested by FCA, would not evaluate models with the same degree of stringency, confounding attempts for consumers to compare vehicles side-by-side and leading to consumer confusion and misrepresentation.

#### Testing for Symmetrical System Responses

The Agency will not assume a symmetrical BSW response by testing only one side of the SV. In NHTSA's model year 2019 and 2020 BSW research test series, four out of ten vehicle models failed to provide a passing warning during at least one trial when the POV approached one side of the vehicle but not the other for a particular test condition. These findings bolster DRI's comment that BSW performance differs depending on which side is tested. Overall, for a given vehicle model, the right POV approach condition seemed more challenging than the left POV approach condition, but this was not universally true.<sup>323</sup>

<sup>323</sup> Of the 10 vehicle models, six failed more trials in right POV approach conditions than ones where the POV approached from the left. Conversely, one failed more trials for left approach conditions, and the remaining three performed approximately the same left-to-right.

Thus, without a comprehensive assessment of left-to-right performance, NHTSA cannot confirm equivalent, robust system performance. Other approaches suggested, such as random selection of sides and/or using manufacturer-supplied data to determine symmetry, introduce a level of subjectivity. Due to the high percentage of vehicle models tested by NHTSA which did not offer symmetrical performance across all five test scenarios for BSW, the Agency is hesitant to allow testing of only side of the vehicle at this time. This is subject to change in the future as vehicle hardware and software evolves.

#### 3. Use of the Turn Signal for BSW

BSWs are automatically presented to the driver when another vehicle is operated in, or approaching, the driver's blind spot. These alerts may be visual (most common), haptic, or auditory. When the driver engages the turn signal to initiate a lane change in the direction of a vehicle in the adjacent lane, additional, escalated alerts may also activate to warn the driver more urgently that there is already a vehicle present.

NHTSA's current BSW test procedure does not stipulate turn signal activation during BSW testing. However, in its RFC notice, the Agency sought comments on whether the turn signal indicator should be engaged, with the intent to evaluate the additional alerts presented to a driver intending to make a lane change rather than only the automatic alert presented whenever another vehicle is occupying the blind spot area. If commenters were interested in testing with the turn signal enabled, the Agency requested further comments regarding the type of alerts that should be required (e.g., visual, haptic, and/or auditory) and the distinction between alerts issued with and without turn signal usage.

#### Summary of Comments

##### Turn Signal Activation

Several commenters stated that the BSW system should be evaluated both with and without the use of the turn signal indicator during testing. ZF Group reasoned that both conditions should be tested because crashes can occur regardless of whether the turn signal is activated. ASC suggested that testing in both configurations can determine whether "the BSW warning is being suppressed for planned lane changes where the turn signal indicator is activated." Rivian commented that NHTSA should run a limited number of tests involving the use of the turn signal

only to “verify functional logic.” HATCI requested that finalized test procedures be made available before making a decision regarding turn signal usage but commented that the procedures should be flexible to accommodate.

While some commenters requested use of the turn signal during testing, many stated that testing without the turn signal is critical. CAS and others commented that the presence of a vehicle may inform the driver’s decision to initiate a lane change. Commenters further stated that omitting the turn signal more closely represents actual driver behavior, as the turn signal is not always engaged before making a maneuver. Along these lines, one individual commented that safety assessments should be based on likely real-world driver behavior instead of idealized behavior. Honda noted that its vehicles’ alert timing is independent of the driver’s intentions and is based on a time-to-collision assessment. Bosch stated that, unless NHTSA plans to evaluate the warning system itself and not whether it triggers, it is not necessary to engage the turn signal.

#### Alert Type Requirement

Commenters expressed mixed opinions regarding what types of alerts should be required if the BSW test procedure is modified to require activation of the turn signal.

#### Any Alert Type

Some commenters (Honda, Bosch, HATCI, and one anonymous individual) stated that any alert type should be allowed for BSW credit if use of the turn signal is stipulated. HATCI expressed that allowing any alert modality should give manufacturers flexibility to optimize alerts based on the “multitude of ADAS technology installed, the interactions between the technologies, and research and development findings.” Bosch agreed that flexibility was advantageous but added that the same alert modalities used for other ADAS should not be used for BSW, since this may confuse the consumer and decrease consumer acceptance. Honda commented that there is “no reasonable method to objectively evaluate the performance of different alert modalities” and that doing so could complicate the test procedures. HATCI suggested that NHTSA “consider researching performance requirements to measure effectiveness of alerts rather than prescribing specific modes” where appropriate. Auto Innovators acknowledged that, while there is potential benefit for an escalating alert modality when the turn signal is

engaged, the Agency should not prescribe a specific alert type.

#### Visual Warnings

Many responders commented that visual warnings were sufficient (or preferred) for BSW systems. Some commenters mentioned visual warnings can be very effective when placed in a natural location for visual checking, such as a side mirror. Toyota noted that, “in the case that BSW is not activated, the driver should be still looking at the mirror” to scan for other vehicles prior to a lane change. Thus, a change in desired driver behavior would not be required. GM and FCA also alluded to the importance of checking mirrors for maneuver planning and agreed that drivers should be encouraged to check mirrors rather than rely solely on other cues, such as haptic or auditory warnings. GM specified that a steady amber warning icon should be visible in the side mirror adjacent to the potential threat and should flash upon turn signal engagement. GM added that mirror-checking is especially important because short-range BSW systems “have limited capability for alerting drivers with enough time to react to fast approaching traffic.” Auto Innovators stated that “visual alerts only are sufficient enough for inclusion in NCAP for evaluations and effective alert methods if they are displayed within the driver’s field of view as they check their mirror before changing lanes.” Tesla and FCA agreed that visual BSWs are sufficient.

#### Haptic Warnings and/or Auditory Warnings

NHTSA received varied support for haptic and/or auditory alerts for BSW. Some commenters, such as FCA and BMW, asserted that auditory warnings can become a nuisance. FCA stated its research has shown that an auditory warning can drive customer dissatisfaction when it occurs while merging in front of another vehicle and can cause the driver to disable the feature altogether. FCA stated it allows the driver to disable the auditory BSWs for this reason. BMW offered that drivers often engage their turn signals to signal their eventual intent, even when they know there is a vehicle in their blind spot. BMW reasoned that haptic and/or auditory warnings would annoy the driver in such instances. GM submitted similar sentiments regarding non-visual BSWs, stating that such alerts would be an annoyance to drivers who have no intention of switching lanes, or who signal an intent to change lanes in advance of an intended lane change.

Other commenters stated they would like to see additional alert types used for BSW. ZF Group suggested visual warnings may be “more or less effective depending on sunlight” and that an additional alert method might increase robustness of the system. ZF Group stated that its research suggests that haptic seat belt warnings are very effective; they added that the use of haptic or auditory warnings such as those used for LDW could be effective because they are meant to convey the same underlying information—the SV is about to experience a “potentially hazardous” lane departure. ASC and GM also agreed with these sentiments, with GM commenting that a single alert type (visual) could be used when the alert is “cautionary,” and multiple alert modalities can be used when the situation is more urgent. CAS also stated there should be an auditory or haptic warning because the cost of adding these alert types to the vehicle would be minimal.

NHTSA received some feedback suggesting the type of warning should depend on the driver’s intent. IDIADA shared that its experience has been that visual alerts work best for conveying information, not for urgently alerting the driver, further noting that an auditory warning would be preferable for alerting the driver when attempting to perform an unsafe lane change. Vayyar agreed with this sentiment but suggested that either an auditory or haptic alert would be acceptable for the warning associated with the turn signal. Rivian requested allowing users to customize their alert type based on driver preference. Rivian stated that visual alerts should not be allowed to be disabled, but that an option for auditory alerts should be required and an option for haptic alerts should be encouraged.

#### Alert Distinctions Between Use and Non-Use of Turn Signal

Regarding distinction between alert modalities associated with and without the use of the turn signal, as mentioned previously, most commenters agreed that use of the turn signal should increase the “urgency” of the alert issued to the driver. Toyota, CAS, ASC, ZF Group, Tesla, BMW, FCA, Rivian, Bosch, and GM all expressed favor with the use of a flashing alert specifically to send a more intense signal to the driver when the turn signal is used since it conveys intent to maneuver. Toyota’s reasoning was that a flashing or blinking visual warning is normally “interpreted as conveying ‘priority.’” Tesla, Auto Innovators, and BMW suggested providing an escalated alert to the driver when another vehicle is detected in the

SV's blind spot and the turn signal is engaged.

Some commenters stated that the warning indicator should flash regardless of driver intent. CAS suggested that LDW/LKA and BSW/BSI be integrated so that an "aggressive warning and correction" should occur if the blind spot is occupied and the driver begins to make a hazardous maneuver, regardless of turn signal status, because the cost of including a combined warning is minimal. ASC also specified that the warning light should flash whether the lane change is intentional or not.

Auto Innovators did not oppose the use of a flashing symbol upon activation of the turn signal. However, the organization relayed that this is not the only acceptable alert modality and that NHTSA should not restrict performance criteria to this type of alert only. Advocates also commented that a general escalation should be required and noted that a flashing visual warning would be logical; however, it further stated that the Agency should provide data to support the alert modality ultimately selected to receive credit.

#### Response to Comments and Agency Decisions

The Agency has decided to modify its BSW test procedure to require additional testing with the turn signal indicator engaged. NHTSA appreciates Bosch's position that engaging the turn signal is seemingly unnecessary since the Agency plans to only assess whether the warning triggers at the appropriate time (*i.e.*, detects the POV when it is in the driver's blind spot) and will not evaluate the warning system itself. However, the Agency also maintains that there is merit to Rivian's suggestion to conduct tests to verify the functionality of the BSW system when the turn signal is engaged. This additional testing should ensure that a vehicle still issues a BSW when the driver engages the turn signal with the intent to switch lanes before fully assessing their surroundings, as ASC suggested. Further, as BMW and GM noted, utilizing the turn signal to notify intent is a common practice used by drivers. Performing testing both with and without the turn signal engaged should address the greatest number of real-world driving conditions. Although several commenters correctly stated that many drivers do not use their turn signal to indicate intent to change lanes, many others do. Receiving an alert when another vehicle is present may deter this latter group of drivers from completing the lane change. Therefore,

ensuring that a BSW is issued in either case seems appropriate.

For this NCAP upgrade, the Agency is requiring that FCWs be comprised of an auditory and visual signal but is not imposing specific attributes (*e.g.*, size, location, decibel level, tactile type, etc.) for either signal modality. However, for its BSW tests, NHTSA is not only implementing a visual alert requirement, but it is also imposing additional alert specifications. Specifically, a visual alert that is compliant with SAE Standard J2802, "Blind Spot Monitoring System (BSMS): Operating Characteristics and User Interface" must be present in the side mirror or the A-pillars. The alert must meet the timing requirements specified in the Agency's BSW test procedure. Although this visual alert requirement will apply to tests conducted both with and without use of the turn signal, the type of visual alert displayed may change for tests conducted with turn signal engagement. For BSW tests conducted without the turn signal engaged, the visual warning must be continuously illuminated. When the turn signal is engaged in the Agency's BSW tests, the visual warning may become escalatory in nature (*e.g.*, switches from steady-burning to flashing, changes color, etc.), or may remain continuously illuminated for vehicles where a second warning modality is also provided.

While acknowledging the comments manufacturers provided promoting flexibility to optimize alerts for various ADAS technologies, requiring a visual alert to appear in the side mirror or A-pillar adjacent to the potential crash threat is a reasonable minimum NCAP requirement for BSW technology, particularly since the driver's gaze when considering a lane change should be in the direction of the intended lane departure. As Toyota, GM, FCA, and Auto Innovators mentioned, drivers are expected to check their side mirrors or, at a minimum, look left or right, as appropriate, to check for the presence of other vehicles prior to initiating a lane change. Warnings should serve to assist the driver in detecting the presence of vehicles in their blind spots; they should not encourage complacency during normal driving. With short-range detection capabilities, BSW systems may not always warn drivers with enough time for them to react to fast-moving vehicles, as GM stated. As such, NHTSA agrees with commenters that the onus remains on the driver to be diligent and check their side mirrors before changing lanes, even for vehicles equipped with BSW systems.

In addition to the continuously illuminated visual cue required for all BSW tests performed without the SV turn signal engaged, the Agency is requiring issuance of an additional alert modality (*i.e.*, a dual-modality alert) or an escalating visual alert (*e.g.*, switches from steady-burning to flashing) upon turn signal engagement, as Auto Innovators suggested. With the turn signal engaged, the driver is signaling an intent to change lanes, thus altering the significance of the alert from a cautionary state to a state of urgency. The Agency agrees with GM, IDIADA, and Vayyar that a single alert type (*i.e.*, visual) may be sufficient when it serves to caution the driver; however, multiple alert modalities or alerts with escalating visual attributes are a more effective way to discourage a driver from proceeding with an intended action that may cause harm.

NHTSA recognizes that many commenters preferred use of a flashing visual alert when the turn signal is engaged and another vehicle is in or approaching the driver's blind spot. Conversely, many others expressed that non-visual alert types (*e.g.*, haptic and auditory) can be very effective if executed properly. In consideration of this, the Agency will allow vehicle manufacturers to dictate the supplemental alert type and/or escalation attributes that will be required for BSW testing when the turn signal is engaged. A vehicle may present a BSW that is comprised of a visual and auditory or visual and haptic signal, or it may simply present an alert that exhibits escalating visual attributes. Such an approach should allow manufacturers to optimize alert strategies not only for BSW systems but also for other ADAS technologies in the future, as many commenters requested.

Although the Agency recognizes that effectiveness may change with flash rate, color, etc. for visual warnings; frequency, decibel level, etc. for auditory warnings; and tactile type (*e.g.*, vibration, jerk, etc.) for haptic warnings, it will not prescribe such requirements at this time. NHTSA has not conducted research to guide such prescriptions, and, as Honda asserted, it currently has no method to objectively evaluate the performance of different BSW modalities. As such, it does not want to impose requirements for additional alert types that may be of nuisance and create customer dissatisfaction such that drivers choose to disable BSW functionality.

Further, the Agency will not require the BSW visual cue to flash when the driver departs the lane absent turn signal engagement, as CAS and ASC



suggested, since NHTSA does not want to be overly prescriptive for a condition that is more representative of its lane keeping test scenarios (where lane departure is unintentional and thus turn signal engagement is not expected) than its BSW test scenarios (where lane departure is deliberate and thus turn signal engagement is likely, though not always assured). Although both turn signal use and non-use will be represented in the Agency's BSW tests, the Agency's lane keeping tests will be conducted without turn signal engagement.

#### 4. Test Conditions for BSI Testing

In addition to a warning-based blind spot assessment, NHTSA also proposed an active safety evaluation (*i.e.*, BSI) for inclusion in NCAP. Test scenarios proposed for BSI include two lane change scenarios (SV Lane Change with Constant Headway and SV Lane Change with Closing Headway) and one false positive scenario (SV Lane Change with Constant Headway, False Positive Assessment), to be discussed later.<sup>324</sup>

#### Summary of Comments

Most respondents to the March 2022 notice did not solely address BSI, with comments generally referring to both blind spot technologies (*i.e.*, BSW and BSI). However, many commenters did express support for inclusion of BSI along with BSW. Aptiv, Consumer Reports, MEMA, ITS, Advocates, Bosch, HMNA, NADA, and two individuals, among others, stated approval of NHTSA's plan to evaluate BSI as a part of NCAP. Aptiv suggested that the proposed parameters would allow NHTSA to quantify BSI's benefits. MEMA agreed with NHTSA that all four ADAS technologies included as part of this final notice, including BSI, are mature, and would not only address a range of crash scenarios, but also offer significant safety benefits. In addition, Bosch stated that BSW and BSI may both help to reduce the risk of lane-change crashes.

However, several commenters stated that BSI technology is not mature and opposed including it in this NCAP update. GM, Auto Innovators, and Honda suggested that BSI could be included in the future, particularly once benefits numbers are better established.

<sup>324</sup> While the Agency did not explicitly discuss SAE Driving Automation Level 2 and 3 test scenario descriptions for BSI testing in its RFC, the proposed test procedures allow for testing of these systems. However, the Agency does not anticipate testing Level 2 or 3 systems as part of NCAP at this time given the limited number of applicable vehicles currently available, along with uncertainty about the driver and vehicle interaction imposed by such implementations.

Auto Innovators further clarified that NHTSA should not include the BSI evaluation in an ADAS rating but that the group would find it acceptable to include it as a recommended technology to encourage BSI adoption.

On the issue of test speeds, Advocates expressed concern that a single SV test speed of 72.4 kph (45 mph) would not ensure BSI systems operate across an appropriate range of speeds.

#### Response to Comments and Agency Decisions

Although some commenters opposed the immediate inclusion of BSI into NCAP, many others were in favor of including evaluations for this active technology with this program update. NHTSA expects that BSI, in tandem with BSW systems, will reduce the frequency of lane-change crashes. This is because active safety technologies are thought to be more effective than warning technologies alone, so benefit estimates for BSI systems should be greater than for BSW systems. As such, it is prudent to add BSI technology to NCAP at this time and NHTSA is proceeding with adopting all three scenarios proposed for the technology in its March 2022 RFC notice—the SV Lane Change with Constant Headway scenario, the SV Lane Change with Closing Headway scenario, and the SV Lane Change with Constant Headway False Positive scenario.

For the SV Lane Change with Constant Headway Test (shown in Figure 15), the POV, driven at the same speed of the SV (*i.e.*, 72.4 kph (45 mph)), is positioned in a lane adjacent to that of the SV with a constant longitudinal offset from the rearmost part of the SV, which is laterally offset from the center of its travel lane.<sup>325</sup> After a short period of steady-state driving, the SV driver (*i.e.*, robot) will initiate a manual<sup>326</sup> lane change, following an 800 m (2,625 ft.) radius curved path towards the POV's travel lane. The SV driver (*i.e.*, steering robot) then releases the steering wheel within 250 ms of the SV exiting the curve so as to achieve a steady state lateral velocity of  $0.7 \pm 0.1$  m/s ( $2.3 \pm 0.3$  ft./s) relative to the line separating the SV and POV travel lanes. In response to the lane change maneuver, the BSI system is expected to intervene and prevent the

<sup>325</sup> The initial lateral offset of the vehicle from the centerline (based on the vehicle width and the desired lateral velocity) is to ensure the SV is being operated at the desired lateral velocity before BSI operates.

<sup>326</sup> "Manual" refers to an externally commanded steering input. NHTSA will use a steering robot for such inputs to maximize accuracy, repeatability, and test efficiency.

rear of the SV from contacting the front of the POV. Additionally, the SV BSI intervention must not cause a secondary departure.<sup>327</sup>

For the SV Lane Change with Closing Headway Test (shown in Figure 16), the POV, approaching the SV from the rear, is driven at a constant speed of 80.5 kph (50 mph). The POV's speed is 8 kph (5 mph) greater than that of the SV, which is travelling in an adjacent lane at 72.4 kph (45 mph), with a lateral offset from center. During the test, the SV driver (*i.e.*, steering robot) will initiate a manual lane change, following an 800 m (2,625 ft.) radius curved path towards the POV's travel lane. The SV driver (*i.e.*, robot) then releases the steering wheel within 250 ms of the SV exiting the curve so as to achieve a steady state lateral velocity of  $0.7 \pm 0.1$  m/s ( $2.3 \pm 0.3$  ft./s) relative to the line separating the SV and POV travel lanes. In response to the lane change maneuver, the BSI system is expected to intervene and prevent the rear of the SV from contacting the front of the POV. Additionally, the SV BSI intervention must not cause a secondary departure.

For the SV Lane Change with Constant Headway, False Positive Assessment Test (shown in Figure 17), the POV, driven at 72.4 kph (45 mph), is positioned in a lane that is two lanes to the left or right of the SV's initial travel lane with a constant longitudinal offset from the rearmost part of the SV. The SV is laterally offset from the center of its travel lane and also travelling at 72.4 kph (45 mph). After a short period of steady-state driving, the SV driver (*i.e.*, steering robot) will initiate a manual lane change into the adjacent lane (the one between the SV and POV) to either the left or to the right. The SV follows a defined path toward the adjacent lane, approaching the center lane line at a constant lateral velocity of  $0.7 \pm 0.1$  m/s ( $2.3 \pm 0.3$  ft./s). For this test, the driver (*i.e.*, robot) does not release the steering wheel. Since no POV is present in this lane and therefore the lane change will not result in an SV-to-POV impact, the BSI system must not intervene. To determine whether a BSI intervention occurred, the yaw rate data collected for the SV during the individual trials are compared to a baseline composite. The difference between the data must not exceed 1

<sup>327</sup> For the BSI tests, a secondary departure occurs when the SV BSI intervention causes the SV to travel 0.3 m (1.0 ft.) or more beyond the inboard edge of the lane line separating the SV travel lane from the lane adjacent and to the right of it (for lane changes to the left) or adjacent and to the left of it (for lane changes to the right) within the validity period.

degree/second within the test validity period.

Assessments for each scenario will be performed during daylight conditions only for a POV approach on both the left and right sides of the SV (*i.e.*, the SV will make left and right lane changes during testing) and with and without the turn signal engaged. Tests will be conducted without LCA or cruise control (*i.e.*, conventional or adaptive cruise control, or ACC) engaged.

The Agency notes that of the three BSI test scenarios proposed by NHTSA, two closely mirror Euro NCAP's Overtaking Vehicle tests,<sup>328</sup> (SV Lane Change with Constant Headway scenario and SV Lane Change with Closing Headway scenario), bolstering support for their adoption into U.S. NCAP. Further, NHTSA has found feasible BSI testing according to the Agency's draft test procedures. Specifically, in its model year 2019 and 2020 BSI test series, the Agency found that, while no vehicles were able to fully and reliably meet requirements to pass<sup>329</sup> the SV Lane Change with Constant Headway scenario, four of the ten were able to pass the SV Lane Change with Closing Headway test. NHTSA expects that vehicle performance will improve over time as manufacturers apply strategies already in use internationally.

The Agency will conduct the adopted BSI test scenarios using the 72.4 kph (45 mph) SV proposed speed. The SV Lane Change with Closing Headway scenario will also retain the 80.5 kph (50 mph) POV speed. The rationale for this decision is similar to that provided for BSW—notably, the speeds' correlation with real-world crash data for injurious lane-change crashes and sufficiency for minimum activation of blind spot systems. Additionally, these test speeds were developed to balance the need to address a real-world safety problem with equipment capabilities dictated by the state of technology for the GVT, available testing real estate at test laboratories, and the Agency's validation efforts (*e.g.*, of the speeds accurately and repeatably attainable with the robotic platforms used to move the GVT during BSI test conduct). NHTSA concludes that the 72.4/80.5

kph (45/50 mph) test speeds best achieve this balance. Additionally, Euro NCAP's Lane Support Systems (LSS) protocol for the Emergency Lane Keeping (ELK) Overtaking Vehicle test scenarios includes the same SV and POV speeds as those NHTSA has specified in its BSI test procedure. Having said this, the Agency acknowledges Advocates' concern that a single speed may not address a range of real-world driving speeds, and NHTSA may consider testing at higher SV/POV speeds in the future. In addition, the Agency may reevaluate this decision in the future and adjust the test conditions accordingly if real-world crash data shows a need for doing so.

Although the Agency's draft BSI procedure only specified assessments for SV lane changes occurring to the left, the Agency has decided to perform BSI testing for a POV approach on both the left and right sides of the SV. This is because NHTSA asserts there is reason for it to also verify functionality of BSI systems when making a right-lane change. For example, in real-world cases, the SV may be on a multi-lane road or be in the left lane of a two-lane road and attempting to move right. As previously mentioned, during the Agency's model year 2019 to 2020 BSW research testing, BSW systems appeared to perform either the same or worse when the POV approached on the right-hand side. Thus, symmetrical responses cannot be assumed, and in the interest of providing thorough information to the consumer, NHTSA will similarly assess both left-hand and right-hand BSI performance. Though this addition deviates from Euro NCAP's test protocol, the Agency concludes that it is appropriate given the considerations mentioned.

NHTSA is also adopting ABD GVT Revision G for the POV used in its BSI tests, as detailed later in this section. This test device is the most suitable vehicle surrogate for BSI testing given its use in NCAP's BSI tests would harmonize with the vehicle test device prescribed in Euro NCAP's LSS testing protocol for the organization's Overtaking Vehicle tests and because it satisfies the specifications defined in ISO 19206-3 (2021).<sup>330</sup>

At this time, similar to the decision for the Agency's BSW tests, the BSI test scenarios will be conducted during daylight conditions only. NHTSA made this decision because, as mentioned previously for BSW, 2011–2015 crash data suggests that the majority of lane-

change crashes (62 percent of fatal lane-change crashes and 76 percent of injurious lane-change crashes) occurred annually, on average, during daylight hours. The Agency may reevaluate this decision in the future and adjust the test conditions accordingly if real-world crash data shows a need.

The same tests must be completed for each vehicle model assessed for NCAP to provide equivalent information regarding vehicle performance across the fleet. The longitudinal speed of the SV will be maintained through manual or robotic control during conduct of NCAP's BSI tests. At this time, the Agency will not utilize conventional or ACC during NCAP's BSI testing, even though the Agency's draft test procedure allows for this flexibility during testing. Since there is no vehicle present in the SV forward path, NHTSA does not expect there would be any difference in how the SV's speed is maintained during a given BSI test trial if manual/robotic or cruise control is used. Cruise control is designed to regulate a vehicle's longitudinal movement and therefore should not impact the lateral control functionality intrinsic to BSI. However, to ensure fairness across testing, it is most appropriate for NCAP to conduct testing utilizing only one method of speed control to ensure that the performance of one vehicle system (BSI) is not affected in any way by the performance of another system (cruise control). NHTSA is choosing to test with manual or robotic control in lieu of cruise control since consumers may sometimes opt not to use a cruise control feature, particularly on non-highway roads. NHTSA notes that 55 percent of fatal and 82 percent of injurious lane-change crashes, on average, occurred annually between 2011 and 2015 on roadways that were not considered highways.<sup>331 332</sup> The Agency will also not use LCA during NCAP's BSI tests since not all vehicles are equipped with such features.

As detailed later in the section, the Agency will nominally perform four unique tests for each of the three BSI test scenarios (*i.e.*, with the POV on the

<sup>331</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W. G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>332</sup> A highway was defined as such if all three precrash trafficway attributes were true: (1) a posted speed limit was  $\geq 45$  mph; (2) the relation to junction was a non-junction, through roadway, or other location within an interchange area; and (3) the trafficway description was a two-way, divided, unprotected (painted  $> 4$  feet) median; two-way, divided, positive median barrier; or entrance/exit ramp.

<sup>328</sup> These tests are specified in Euro NCAP's Lane Support Systems (LSS) test protocol as part of its Emergency Lane Keeping (ELK) test series.

<sup>329</sup> For SAE Driving Automation Level 0- or 1-equipped vehicles, a result is considered passing when (1) the SV intervenes to avoid contact with the POV during the test and (2) the intervention does not cause the SV to travel more than 0.3 m (1.0 ft.) beyond the inboard edge of the lane line which separates the SV travel lane from the one adjacent and to the right of it within the validity period. This must be true for any number of trials conducted.

<sup>330</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—Lane Support Systems, Version 4.3*. See section 5.

left and right sides of the vehicle and with the SV turn signal engaged and disabled). If the SV intervenes and meets the test procedure requirements during a trial run, testing will continue until all test conditions are assessed. If the SV does not provide an acceptable intervention during any trial run conducted for a given test condition, BSI testing will cease for the vehicle model. This test methodology is appropriate for BSI because it aligns well with that adopted for BSW and the other ADAS technologies to be included in NCAP.

However, in a departure from other ADAS technologies included in this notice, NHTSA will assess BSW separately from its active technology counterpart (BSI) for NCAP. NCAP has not previously evaluated technologies associated with blind spot warning or intervention, but assessments for forward collision and lane departure warning technologies have been included in NCAP's crash avoidance testing since model year 2011. Based on this, it is appropriate to allow manufacturers to receive NCAP credit for BSW systems while working toward improved BSI performance.

Finally, in response to Auto Innovators' concern regarding inclusion of BSI results in a rating, for this NCAP update, vehicles achieving no-contact results (and, in the case of false-positive testing, no intervention) and exhibiting no secondary departure, will receive a check mark on NHTSA's website. Results will not be combined into a rating in the immediate future, but NHTSA may do so at a later date.

#### 5. Use of the Turn Signal for BSI

NHTSA's draft BSI procedure requires utilization of the left turn signal during BSI tests, with no instances where the turn signal is not enabled in the proposed procedure. NHTSA requested comments on whether this is appropriate, and if not, how the Agency could differentiate the operation of BSI from the heading adjustments resulting from an LKA intervention. NHTSA also asked whether the SV's LKA system should be switched off during conduct of the Agency's BSI evaluations.

#### Summary of Comments

##### Turn Signal Activation

Several commenters stated that it is reasonable to perform BSI tests with the turn signal enabled. FCA, GM, Honda, Tesla, and Auto Innovators responded that BSI tests should be conducted *only* with the turn signal. FCA, Honda, Tesla, and Auto Innovators commented that drivers conduct lane changes with

intent, so activation of the turn signal is appropriate. GM also noted that BSI is reliant on LKA functionality and that the use of the turn signal would distinguish BSI performance from LKA.

Toyota, IDIADA, ASC, and ZF Group commented that testing both with and without turn signal use would be appropriate. Many of these commenters noted that real-world drivers may not signal intent to make a maneuver and that the technology should operate regardless of whether the turn signal is used. ASC stated that testing in this manner could "identify whether there is any difference in operation due to the turn signal status."

Some commenters, including Rivian, CAS, Aptiv, and one anonymous individual, suggested that turn signals should not be used during BSI testing. Rivian likened BSI to CIB, stating that "BSI can be equated to collision imminent braking (CIB) in the manner that CIB is the elevated interventional stage following forward collision warning (FCW)." Rivian reasoned that turn signal activation should only affect warning behavior, not intervention behavior. CAS and an anonymous individual noted that, as previously mentioned, drivers may fail to signal intent, with CAS stating that "NHTSA tests should not be based on idealized good driving practices but should instead include plausible driving errors". Aptiv further stated that not engaging the turn signal is more representative of a real-world driving scenario.

##### LKA Status if Turn Signal is Off

The Agency also requested comments on whether LKA should be deactivated during BSI evaluations if the turn signal is not used in order to differentiate performance between LKA and BSI systems. DRI indicated that if the LKA system cannot be turned off the use of the turn signal should be required, stating otherwise it would be difficult to discern any performance difference. DRI stated it did not have an opinion on the matter if the LKA system could be turned off. Honda opined that LKA status would not ultimately be relevant as, even if LKA were allowed to remain on, BSI would "take over authority for intervention," but noted that if LKA was disabled, "the BSI performance will operate more consistently as a BSI system."

Toyota, IDIADA, FCA, GM, BMW, and Tesla commented that they preferred the LKA system remain enabled while performing BSI tests. Toyota, IDIADA, and others also suggested NHTSA should focus on technology neutrality, meaning that the test requirements

should not dictate the technologies needed to meet them. Toyota further stated that "in the real-world condition, both systems may be active and function in combination as part of the overall vehicle ADAS features." Those in favor of keeping the LKA system enabled noted that BSI and LKA may be integrated systems that cannot be separated from one another. Toyota, BMW, and GM suggested that LKA is likely suppressed in the "turn signal on" condition for some current vehicles.

Three respondents, Aptiv, Rivian, and one anonymous individual, supported the deactivation of LKA during BSI testing. Rivian asserted that consumers may turn off LKA due to personal preference and, therefore, BSI should be assessed independently. Rivian also stated that there will be some interaction between LKA and BSI but that "the OEM should be responsible for determining the detailed interactions and communicating their function and interaction to the customer." Aptiv supported disabling LKA and/or "auto lane change features" for vehicles equipped with SAE Driving Automation Levels 2 and 3.

ASC and ZF Group found value in evaluating BSI separately from LKA but supported a different approach to differentiate performance. Both groups mentioned that LKA may not always be active due to various circumstances. Because BSI is proximity-based and not dependent on lane markings, both groups suggested that the Agency could avoid activating LKA instead of disabling it by testing vehicles on "a roadway without lane markings to differentiate a BSI intervention from an LKS intervention." Advocates also reasoned that BSI should operate independent of lane lines and recommended that the Agency determine protocols to test BSI without triggering LKA interventions and vice versa.

Other commenters stated that more research and test development is necessary. CAS commented that the "underlying logic" for LKA and BSI systems is different, so different tests are required. However, CAS noted logic differs between vehicle models, so the means to discriminate performance of each system may also be different. Advocates requested that NHTSA provide its "research and evaluation of vehicles with BSI and LKS systems to justify any decision regarding testing protocols."

#### Response to Comments and Agency Decisions

NHTSA will conduct all three BSI test scenarios (*i.e.*, the SV Lane Change with

Constant Headway scenario, the SV Lane Change with Closing Headway scenario, and the SV Lane Change with Constant Headway False Positive scenario) two times for each POV approach direction (left and right)—once with the turn signal engaged and once without use of the turn signal. Assessments will be performed with the vehicle's LKA system 'off' if the LKA system can be disengaged and its LCA system 'off' if the vehicle is so equipped.

The Agency agrees with commenters who stated that turn signal use during NCAP's BSI test is appropriate; the related test scenarios represent situations where drivers intend to conduct a lane change. NHTSA also agrees with GM that use of the turn signal in the Agency's BSI tests serves to distinguish BSI performance from that of LKA. NHTSA's LKA tests are designed to represent unintentional lane departures, and as such, the turn signal is not engaged. However, as mentioned for BSW, there is merit to the assertion from other commenters that drivers often fail to outwardly signal intent to make a lane change by engaging their turn signal. Both use and non-use of the turn signal can represent intentional lane departure situations during real-world driving. By omitting the latter, the Agency would fail to capture a significant portion of use cases in the real world. Rivian's point that turn signal activation may affect whether the vehicle warns the driver but not whether it intervenes once the driver begins to perform a lane change is also valid. Once the lane change maneuver has begun, the driver's intent is known, regardless of whether the driver activated the turn signal indicator, and the vehicle's BSI system should respond accordingly. Given this, the Agency would be remiss to only evaluate a BSI system's ability to intervene in situations where the driver has utilized their turn signal. As several respondents suggested, NHTSA must also assess system functionality when the turn signal is not used prior to a lane change maneuver.

NHTSA will perform all BSI assessments for a vehicle (*i.e.*, both those conducted with the turn signal activated and those conducted without) with the LKA system 'off' if the LKA system can be disengaged. LKA systems provide brief heading corrections needed to bring a vehicle away from a lane line after it has been crossed or if a crossing has been deemed imminent. Although the Agency recognizes that several respondents recommended that the LKA system remain enabled while performing BSI tests to promote

technology neutrality, NHTSA asserts that setting the LKA system to 'off' is more appropriate. A vehicle's LKA system is not guaranteed to be 'on' during real-world driving. While it is true that BSI and LKA systems may both be active and function in combination during real-world driving as Toyota asserted, it is also possible that consumers may turn off LKA due to personal preference, as Rivian contended. Further, as noted in the March 2022 RFC, NHTSA is aware of studies which suggest that drivers frequently disable lane departure technologies.<sup>333</sup> Accordingly, assessing BSI functionality independent of LKA functionality during NCAP's BSI tests seems appropriate.

Although DRI recommended that turn signal use should be required for any tests conducted for vehicles in which the LKA system cannot be turned off to discern performance differences between a vehicle's BSI and LKA systems, it is still appropriate to perform assessments both with and without turn signal engagement in such instances. As mentioned, not all drivers utilize the turn signal indicator when changing lanes. As Honda opined, BSI should resume intervention authority even if the LKA system remains 'on' for testing. If a vehicle's LKA system were to affect BSI performance for fully-integrated LKA and BSI systems, any influence should be representative of real-world driving circumstances. As such, it is appropriate to still include an evaluation requiring that the turn signal not be activated for those vehicles where the LKA system cannot be turned 'off.'

NHTSA will not test vehicles on a roadway without lane markings to differentiate BSI and LKA interventions without deactivating LKA, as suggested by several commenters. Since most multiple lane roads conducive to lane changes on which vehicles will be travelling at the speeds to be assessed will have lane lines, conducting BSI tests on roadways devoid of lane markings would not be representative of real-world driving conditions. Further, while lane markings may not influence BSI performance for vehicles with LKA systems that can be switched off, the Agency reasons a lack of lane markings may affect both LKA and BSI system functionality (and thus BSI performance) for those vehicles with fully integrated BSI and LKA systems where LKA cannot be deactivated for BSI testing. This assumption is bolstered by GM's assertion that BSI is reliant on LKA functionality.

Finally, as previously mentioned, the Agency will set a vehicle's LCA system, which serves to continuously provide steering inputs needed to keep a vehicle centered in its lane of travel, to 'off' (if equipped) for all BSI tests.

#### 6. User-Configurable Settings for BSW and BSI Tests

For NHTSA's BSW and BSI testing, the Agency will set the timing for the warning in BSW systems and intervention in BSI systems to the middle (or next latest) setting (if adjustable) during its BSW/BSI evaluations, similar to that previously shown in Figure 2 for FCW evaluations. For BSW and BSI systems having only two settings, the Agency will select the later of the two settings and this test setting will meet NHTSA's middle (or next latest) BSW/BSI setting requirement. These system setting configurations align with Euro NCAP's LSS test protocol.

All BSW and BSI tests will also be conducted with LKA and cruise control (*i.e.*, conventional or adaptive cruise control, or ACC) 'off' if such systems can be disengaged. Lane centering functions will also be set to 'Off' for all BSW and BSI tests in alignment with Euro NCAP's LSS test protocol.

#### 7. BSI False Positive Testing

NHTSA proposed including a false positive test (SV Lane Change with Constant Headway, False Positive Assessment Test) in its BSI test procedure to evaluate the propensity of the system to inappropriately activate in a situation that does not pose a crash risk to those in the SV.

#### Summary of Comments

Commenters expressed mixed opinions for this proposed test scenario. Some, including TRC, CAS, Advocates, ZF Group, Vayyar, Intel, Rivian, and one anonymous individual, commented that a false positive test scenario is a valuable testing inclusion. Many commenters, including CAS, Advocates, ZF Group, Vayyar, Rivian, and CR, conveyed that false positive activations could cause customer dissatisfaction, leading to customers ignoring or deactivating the technology. TRC commented that to maximize the benefit of a technology, NHTSA must encourage maximum consumer confidence and use. Advocates mentioned this is particularly important for active technologies in which the driver cannot ignore a false positive activation. CAS and Vayyar noted that inappropriate activation may cause undesirable driver reactions, leading to potentially dangerous driving behavior.

<sup>333</sup> 87 FR 13461.

Other commenters stated that the false positive testing scenario is not appropriate or necessary for NCAP. Auto Innovators and Toyota stated that false positive activations are difficult to reproduce because of situational complexity and suggested that a limited number of test runs cannot determine the overall robustness of the system. FCA did not oppose the inclusion of a false positive test scenario but reasoned that it may be difficult to determine a concise test methodology. Toyota and others stated that manufacturers may begin designing their systems to pass tests instead of performing acceptably in real-world conditions.

As discussed in the AEB and PAEB sections, manufacturers commented that they are strongly motivated to design robust systems that do not falsely activate because they have a vested interest in maximizing consumer satisfaction. FCA responded that manufacturers will discover excessive false-positive activations through customer complaints and quality metrics. Likewise, GM noted that, due to the myriad of situations that may trigger a nuisance activation, the automaker would find these customer quality metrics and field data reports to be more useful. Rivian and BMW shared that manufacturers often already conduct in-house false positive testing to ensure customer acceptance, and Toyota stated that manufacturers must take the consumer's satisfaction into account when balancing true positive cases with true negative and false positive cases. Honda and Auto Innovators noted that BSW systems have high consumer satisfaction without the need for a false positive test, and both groups stated they expect that BSI systems will also be accepted similarly.

BMW indicated that because of the work already completed on eliminating false positives by manufacturers, there would be little benefit to adding a false positive scenario to NCAP's testing regimen. The automaker further stated that performing a small number of tests to mitigate false activations would not adequately address the variety of driving conditions that a driver may experience and would not be commensurate with the amount of test effort needed. Bosch noted that specialized infrastructure and equipment may be needed to conduct false positive test scenario runs, adding unnecessary test burden and complexity.

Tesla and Auto Innovators mentioned that the reduction of false positives may also come at the cost of increased false negatives, and HATCI suggested that false positive testing could lead to

unintended consequences that may impact future technologies. HATCI recommended that NHTSA focus on test scenarios that represent safety needs from the field, particularly ones that address fatal and injurious crashes. Tesla commented that the greatest safety benefits will be realized when false negatives are minimized, adding that vehicle manufacturers may add other countermeasures to further mitigate false positives.

In relation to the false positive test procedure itself, DRI proposed that false positive scenarios do not require the full set of test runs specified for baseline tests and stated that no more than three would be necessary. Additionally, Vayyar noted the importance of including typical surroundings and static objects like fences, parked cars, trees, etc. ASC echoed this sentiment, commenting that NHTSA should consider what objects or scenarios may trigger false activations when developing and selecting test procedures for NCAP. As an example, ASC stated that BSI systems may falsely activate in response to oncoming traffic in the adjacent lane or stationary objects.

#### Response to Comments and Agency Decisions

The Agency is retaining the SV Lane Change with Constant Headway, False Positive Assessment test scenario currently included in its BSI test procedure. As mentioned, the objective of this test scenario is to assess whether the BSI system detects and responds to a non-threatening POV during a single lane change. The Agency's decision is consistent with the decision made by the Agency for AEB and aligns with the comments received by many, though not all, respondents.

In response to the Agency's March 2022 RFC notice, vehicle manufacturers reiterated similar comments to those submitted in response to the Agency's false positive AEB tests. Most notably, they maintained that false positive tests in NCAP should be unnecessary because automakers have an inherent interest in designing robust systems and limiting false activations to maintain high customer satisfaction. Several manufacturers asserted that excessive false activations would be realized through quality metrics and/or customer complaints or through internal testing. However, if a manufacturer's efforts were sufficient to eliminate false positive activations, such incidents would not be observed by manufacturers in field data reports. Further, while BMW contended there would be little benefit to adding a false

positive scenario to the matrix because of manufacturer efforts to date to eliminate false positive activations for blind spot technologies, NHTSA questions this rationale. Only 38 percent of model year 2024 vehicles are currently equipped with BSI technology. As such, acceptable false positive rates for yet-to-be-designed BSI systems for the majority of the vehicle fleet cannot be intrinsically assumed. NHTSA also rejects Toyota's assertion that incorporating a false positive test for BSI would encourage manufacturers to design systems solely to pass the Agency's tests, rather than to perform well during real-world driving, as acting in such a manner would seemingly conflict with automakers' assertions of performing due diligence and assuring customer satisfaction. Further, the test conditions for the SV Lane Change with Constant Headway, False Positive Assessment test are not obscure. As such, NHTSA does not foresee that a vehicle will achieve good BSI false positive assessment performance as a direct result of compromised operation in other real-world driving situations. Based on these considerations, adopting a false positive test for NCAP's BSI test matrix is appropriate and can be incorporated without an associated increase in false negatives or other unintended consequences, as expressed by some commenters.

The Agency also agrees with those commenters who supported the inclusion of a false positive BSI test and suggested that NHTSA should discourage false positive activations, encourage system use, and ensure consumer confidence in blind spot technology. Any false positive activation may cause drivers to respond with irresponsible driving behavior, as CAS and Vayyar suggested, or cause general customer dissatisfaction, potentially leading to deactivation of the technology. Advocates' assertion that maintaining a high level of customer satisfaction is especially important for active technologies since a system's intervention cannot simply be ignored by the driver is valid. Though Honda and Auto Innovators suggested that, since BSW systems currently have a high rate of customer satisfaction without an associated false positive test, so too should BSI systems, the Agency does not agree with this deduction. Rather, adopting a false positive test for NCAP's BSI test matrix will help ensure sensor robustness and thereby maintain or improve overall consumer sentiment pertaining to blind spot technology.

The Agency maintains this position while also acknowledging that the proposed false positive test is neither

comprehensive enough nor adequate to eliminate susceptibility to all false activations, as BMW and GM asserted. NHTSA acknowledges that a myriad of situations may trigger a false positive system response during real-world driving. It is also true, as Toyota and Auto Innovators contended, that one test may not sufficiently gauge overall system robustness. However, NHTSA reasons that its SV Lane Change with Constant Headway, False Positive Assessment test serves to provide a baseline for BSI system functionality and establish a minimum expected performance level. If the test provides even limited coverage of real-world lane change/merge conditions, it will afford additional safety, and is thus advantageous to include for NCAP's BSI evaluations.

Several commenters suggested that false positive tests are inherently difficult to conduct (Auto Innovators and Toyota) or require specialized infrastructure and equipment (Bosch). However, this is not the case for the Agency's SV Lane Change with Constant Headway, False Positive Assessment test. This test, which requires that the SV perform a single lane change into an adjacent lane while the POV is driven straight, is relatively easy to conduct and has been performed successfully as part of NHTSA's research test program. It imposes no additional complexity or test burden compared to the other BSI tests included in the Agency's test protocol, other than the additional three baseline runs necessary for each test condition that must be conducted to assess BSI system performance. NHTSA recognizes that DRI suggested it was necessary to perform only three baseline runs for the false positive test scenario (*i.e.*, three baseline runs for each test condition), and the Agency agrees, since the Agency's research testing has shown three baseline runs to be sufficient and this should keep test burden to a minimum.

At this time, NHTSA will not require placement of additional static objects within the test environment for its BSI assessments, as Vayyar and ASC requested. As previously mentioned, the Agency's false positive BSI test is intended to serve to judge a level of minimum acceptable performance. It is not expected to address the numerous potential lane change/merge driving situations that may invoke a false positive intervention. Additionally, as BSI will be a newly adopted technology for NCAP, it is currently more important to encourage technology adoption across a larger segment of the vehicle fleet rather than the adoption of overly burdensome requirements. The Agency

has also not conducted research to assess the impact of such objects on system performance, and it would therefore be premature to incorporate these items in test scenarios adopted for this NCAP upgrade.

Although static objects and oncoming vehicles will not be part of the Agency's initial BSI assessments, NHTSA expects that vehicle manufacturers should design BSI systems to address the potential for false activations in all possible real-world situations so that vehicles do not pose an unreasonable risk to safety. Given the comments received, this expectation aligns with steps already being taken by automakers to ensure customer satisfaction. Similar to the plan discussed for AEB, NHTSA will continue to monitor customer complaints to look for reports of frequent false activations for BSI systems as part of its defects identification and investigation process. The Agency also has the authority to investigate whether vehicles experiencing excessive false positive activations have a safety-related defect since they may pose an unreasonable risk to safety. NHTSA will continue to handle such cases appropriately as they arise. The Agency may also consider adding other false positive tests to NCAP in the future to capture additional driving situations if real-world data suggests a safety need exists.

#### 8. Use of the ABD GVT Revision G for BSI Testing

A real vehicle is currently utilized in the Agency's BSW test procedure. However, in the March 2022 RFC, NHTSA detailed its intent to use the [ABD] GVT Revision G in its BSI test procedure as the vehicle test device. As previously discussed in the AEB section, the ABD GVT Revision G vehicle test device includes minor changes to its shape and radar characteristics to more closely approximate an actual vehicle. Its use in NCAP's BSI test would further promote global harmonization since the GVT is used in Euro NCAP's *Lane Support Systems* testing protocol.<sup>334</sup> NHTSA used the ABD GVT Revision G in its pilot testing series.

#### Summary of Comments

Most commenters remarking on this topic agreed the [ABD] GVT Revision G is the most appropriate strikeable vehicle test device for use in BSI testing. MEMA, FCA, Bosch, Honda, Auto Innovators, Toyota, ASC, ZF Group,

<sup>334</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—Lane Support Systems, Version 4.3*. See section 5.

Rivian, BMW, HATCI, Tesla, Intel, and GM were all in favor. The use of a standardized vehicle test device was a motivating factor for nearly all commenters who indicated approval (Auto Innovators, Toyota, ASC, ZF Group, BMW, HATCI, Tesla, and Intel). Auto Innovators also commented that the use of the [ABD] GVT Revision G for BSI testing would reduce test burden for manufacturers and laboratories since the same vehicle test device could be used for CIB and DBS. Bosch noted the [ABD] GVT Revision G's improved side strength and radar characteristics.

However, GM preferred the "most representative test target that can safely be used in all intended test scenarios," meaning that if there is low risk of POV-to-SV contact, a real vehicle would be more desirable. For more aggressive BSI scenarios, GM agreed that the use of the [ABD] GVT Revision G is appropriate. Advocates remarked that NHTSA should justify any aspect of the test procedures, including the strikeable vehicle test device used, through presentation of testing and data analyses. Bosch also requested that NHTSA refer to a standard<sup>335</sup> rather than a specific product in its test procedures to give more flexibility to those implementing tests. Should there be any changes to the ABD GVT Revision G, HATCI requested that the Agency provide a chance to review the changes with sufficient lead time to understand the impact that such changes may have on its product design.

With respect to logistical concerns, TRC questioned whether NHTSA would find it acceptable to retrofit an [ABD] GVT Revision F soft car (or other) with a kit to bring it in line with Revision G specifications. It also noted that minor impacts with the vehicle test device may interfere with vehicle kinematics at the higher test speeds specified in the proposed procedure. For this reason, the laboratory asked whether the Agency would require contact to determine performance or if a tight tolerance for no contact may be used instead, citing a desire to reduce test burden.

#### Response to Comments and Agency Decisions

Based on the comments received, NHTSA has decided to use the ABD Revision G GVT for NCAP's BSI tests at this time. Adopting this test device for NCAP's BSI tests should minimize burden for manufacturers since the same test device will be prescribed in the Agency's AEB test protocol and is approved for use in Euro NCAP's LSS

<sup>335</sup> ISO 19206-3:2021.

and AEB test protocol evaluations.<sup>336</sup> In addition, the ABD GVT Revision G was found to be robust and durable in the Agency's most recent BSI research tests. Further, ABD has indicated this test device complies with ISO 19206–3:2021, "Road vehicles—Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 3: Requirements for passenger vehicle 3D targets"<sup>337</sup> with respect to the specifications outlined for radar cross section, reflectivity, color, and physical dimensions. Therefore, the Agency considers it an acceptable surrogate of a real vehicle and appropriate for use in NCAP's BSI assessments.

Specifying a standardized vehicle test device is appropriate, as doing so should promote fairness and ensure repeatability and reproducibility of test results. That being said, the Agency also recognizes, as Bosch mentioned, that stipulating a standard the BSI vehicle test device must comply with instead of designating a specific device for use will afford more flexibility to those conducting BSI tests. While there are benefits to such an approach, NHTSA has not conducted thorough evaluations of alternative test devices that also meet the ISO specifications, such as the 4a GVT, to ensure they invoke equivalent vehicle/system performance as the ABD GVT Revision G in the Agency's BSI tests. Therefore, at this time, the Agency is specifying use of the ABD GVT Revision G in NCAP's BSI tests to mitigate variability between the Agency's official test results and those submitted by the vehicle manufacturer.

The Agency notes that while it allows use of a real vehicle during its BSW testing, this is not an appropriate approach for its BSI testing. This is because for NHTSA's BSI tests (with the exception of the false positive test scenario), the SV initiates a manual lane change into the POV's travel lane. Because of this lane change maneuver, contact between the SV and POV is possible. On the other hand, SV movement in NHTSA's BSW tests is confined to a pass-by maneuver, where both the SV and POV maintain their position within their respective lanes, or a converge/diverge maneuver, where the POV performs a lane change into a lane that is adjacent to the SV but not in the same lane as the SV. Consequently, the ABD GVT Revision G, not a real vehicle, is appropriate for NCAP's BSI testing so

tests can be conducted safely. While the Agency will permit use of a real vehicle in NCAP's BSW tests, it is also amending the test procedure to allow use of the ABD GVT Revision G in those test scenarios. Further, since the BSI false positive test should not result in contact, the Agency's test procedure will permit use of a real vehicle for that test scenario.

Along these lines, NHTSA will not alter the no contact evaluation criterion currently included in the Agency's BSI test procedure to permit a tolerance, as TRC requested. Contact was observed during numerous trials conducted as part of the Agency's BSI research testing and vehicle kinematics post-contact did not generate concern for the safety of laboratory personnel or create additional test burden.

Although NHTSA will use the ABD Revision G GVT in its official BSI testing and will not accept manufacturer test data for BSI assessments performed utilizing alternative test devices at this time, manufacturers may choose to utilize ABD GVT Revision F, as TRC requested, when performing tests for NCAP data submission, if it is retrofitted with a kit to ensure it meets the specifications for Revision G. Such adaptations are necessary because ABD GVT Revision G includes changes to the front and sides when compared with Revision F, specifically to permit improved side strength and radar characteristics. Any revision of the ABD GVT utilized for BSI testing, whether Revision G or Revision F that has been retrofitted to be equivalent to Revision G, must also meet all specifications and requirements outlined herein as well as those prescribed in NHTSA's BSI test procedure.

With regards to HATCI's concerns pertaining to version control of the vehicle test device, the Agency will be as transparent as possible about any potential changes to test equipment used for its BSI performance evaluations in the future.

#### Vehicle Test Device Specifications

Even though it is not necessary to prescribe all specifications for the ABD GVT Revision G for NCAP testing, since compliance with the ISO standard should be inherent, the Agency is nonetheless referencing ISO 19206–3:2021 in NCAP's BSI test procedures, as it did for NCAP's AEB tests. This should ensure any device utilized for Agency testing complies with the standard's specifications.

#### 9. Number of Trials and Pass Rate

As with the other ADAS technologies proposed, the Agency's proposed BSW

and BSI test procedures included multiple trial runs for each given test scenario. The proposed BSW test procedure required seven repeated trials for each test condition (*i.e.*, left and right POV approach direction) assessed for a scenario (14 tests overall for Straight Lane Converge and Diverge and 56 tests overall for Straight Lane Pass-by). The number of proposed trials for the BSI procedure depended upon the test scenario to be performed. Seven repeated trials were specified for the SV Lane Change with Constant Headway test and the SV Lane Change with Closing Headway test, while three repeated trials were prescribed for the SV Lane Change with Constant Headway, False Positive Assessment Evaluation test. NHTSA requested comments on the appropriate number of trials required for each adopted test condition and the appropriate pass rate for BSW and BSI tests. The Agency proposed that a vehicle would have to pass five out of seven trials for a given BSW test condition to receive credit for the technology; however, no pass rate was proposed for BSI systems.

#### Summary of Comments

##### Number of Trials

Several commenters provided input suggesting the number of trials for BSW could be reduced from what NHTSA proposed. TRC, GM, IDIADA, Rivian, Auto Innovators, Tesla, and Bosch opined that fewer than seven trials are needed. Those in favor of trial run reduction mentioned there is consistency in vehicle alert times (TRC) and limited variance in test results. TRC, GM, and Rivian were in favor of reducing the number of trial runs to five, while Bosch and Tesla recommended reducing the number to three trials. Tesla stated that three trials are needed for BSW because it is a warning system only and does not intervene, with the driver maintaining control of the vehicle. IDIADA recommended reducing to just one trial run, citing relevant experience in LKA and AEB testing. However, it also stated that the BSW pass-by test is simple and subsequent trials can be performed easily if desired. Toyota and Auto Innovators suggested a reduction to either three or five trials to alleviate test burden. Like others, Intel suggested that NHTSA seek to reduce unnecessary test burden, but the company did not offer a specific number of trial runs that should be included.

TRC made the recommendation to perform five trial runs for both BSW and BSI. The laboratory asserted that the battery life of the GVT robotic platform

<sup>336</sup> <https://www.euroncap.com/en/for-engineers/supporting-information/technical-bulletins/>. See Appendices I & II.

<sup>337</sup> <https://www.iso.org/standard/70133.html>. May 2021.



can become problematic, and thus, a decrease in the number of test runs could preserve the platform's battery and eliminate some invalid runs. Rivian also recommended that NHTSA reduce the procedural requirement for BSI to five trial runs. On the other hand, Tesla recommended running seven BSI trials per test condition. While the automaker expressed support for reducing the number of BSW trial runs, it did not support a reduction for BSI tests because the system controls the vehicle on the driver's behalf. Tesla reasoned that NHTSA should more rigorously evaluate any vehicle interventions not initiated by the driver.

Other commenters stated that seven trial runs are appropriate for BSW. Honda, FCA, ASC, BMW, and ZF Group supported NHTSA's proposal for seven trials. The main reason cited for keeping the trial run count the same was maintaining consistency with existing test procedures. It should be noted that, while GM and Auto Innovators were in favor of reducing the number of trial runs per condition, both groups were also not opposed to maintaining seven trial runs. GM mentioned maintaining consistency amongst different test types and asked the Agency to consider that additional trial runs in the same test scenario are not as labor-intensive as changing the test setup to a different test scenario. GM therefore requested NHTSA optimize the number of test scenarios rather than focus on the number of test runs.

Advocates and CAS opined there must be additional evidence provided to determine the appropriate number of test runs. Advocates stated that NHTSA should provide evidence that the number of trials selected will ensure that vehicles identified with the technology will operate as intended for the life of the vehicle. Similar to its requests for the other technologies NHTSA proposed for adoption in NCAP, CAS requested that the Agency use a statistical analysis to determine an appropriate number of trials to ensure system robustness.

#### Pass Rate

Many commenters suggesting that seven BSW trials should be conducted held the view that five of seven tests should be required to pass to gain BSW system credit. Honda, GM, FCA, ASC, BMW, and ZF Group expressed that requiring five of seven tests to pass is reasonable, offers credit to systems which will effectively mitigate real-world crashes, and maintains consistency with existing ADAS test procedures. Although Auto Innovators expressed a preference for fewer trial

runs per condition, should NHTSA continue with seven runs, the group recommended the Agency require five of seven runs to pass. Auto Innovators opined that if the first five runs pass, then the vehicle should be considered as passing and testing should be discontinued to reduce unnecessary test runs.

Commenters recommending five trials often suggested that three of five should pass (Toyota, GM, and Auto Innovators). For those recommending three trials, most often commenters requested that two of the three trial runs pass. Toyota noted that one failed trial should be permitted to prevent a vehicle from being misclassified because of a one-off occurrence. The automaker stated that this follows other crash avoidance NCAP test methodology. Some commenters stated NHTSA should not permit any failed runs. However, IDIADA stated one test per condition should be sufficient, and vehicles should be expected to pass since test data does not show wide variation.

Rivian and Tesla commented that pass rate should depend on the nature of the system evaluated, with both automakers stating that systems that deliver information (*i.e.*, BSW) should be expected to pass 100 percent of the tests conducted. Both also asserted that systems which intervene to control the vehicle movement (*i.e.*, BSI) should have a pass rate based on the nature of technology. Rivian stated that NHTSA should "take into account external and internal variables" and determine an appropriate pass rate based on this fact. Rivian stated it did not approve of binary pass/fail criteria for BSI but did not provide a suggested pass rate. Tesla recommended that five out of seven BSI trials per condition pass.

Like the feedback received on the number of trials mentioned in the previous section, Advocates and CAS suggested that pass rates should be based on additional information and evidence.

#### Response to Comments and Agency Decisions

##### Number of Trials for BSW

The Agency has determined that it will conduct one trial per test condition to ensure BSW system performance affords the consistency that consumers expect and safety demands. This finalized testing methodology is akin to that of AEB and PAEB testing.

NHTSA does not agree with Tesla's assertion that warning systems do not require the same level of rigor when they are assessed for NCAP. To maintain the credibility of the consumer

information provided to the public, all ADAS technologies, whether warning-based or active safety features, should be proven reliable in the test conditions assessed before they are given credit for passing NCAP's testing. NHTSA maintains, as it has done elsewhere in this notice, that the best way to ensure system reliability is not to perform repeated test trials. Repeated trials inherently permit a certain threshold of failures, and failures of any number are unacceptable under the limited, ideal test conditions to be assessed. As such, the Agency will perform a single trial for each test condition to assess BSW system performance. This decision aligns with assertions from those commenters who suggested that fewer BSW trials could be conducted than were proposed initially and maintains congruity amongst NCAP's ADAS testing protocols, as multiple commenters requested.

For the Straight Lane Converge and Diverge test scenario, NHTSA will perform one trial for each test condition (*i.e.*, POV approach directions of right and left, each with turn signals enabled and disabled), resulting in four Straight Lane Converge and Diverge test trials total. For its BSW Straight Lane Pass-by testing, NHTSA will conduct one trial per each speed differential, POV approach side, and turn signal status combination for a total of 16 Straight Lane Pass-by trials per vehicle model assessed. Despite GM's concern that changing the test setup is more difficult than simply running multiple trials for one scenario, this testing methodology should balance test burden with the Agency's need to thoroughly evaluate BSW system performance. It should also limit damage to the test vehicle, vehicle test device, and equipment, and best ensure the safety of laboratory personnel.

Considering all BSW testing adopted in this notice, each vehicle model assessed for BSW system performance will undergo 20 trials total, a significant reduction from the 70 initially proposed by NHTSA. This reduction in the number of trials should address Toyota's concern regarding timely release of information to consumers.

##### Number of Trials for BSI

In the interest of test consistency, reduced testing burden, and ensuring system reliability, NHTSA will also apply the same one-trial test methodology to all three BSI assessment scenarios for NCAP: (1) SV Lane Change with Constant Headway, (2) SV Lane Change with Closing Headway, and (3) SV Lane Change with Constant Headway, False Positive Assessment.

Although Tesla suggested that NHTSA conduct seven trials for each BSI scenario because the vehicle intervenes on the driver’s behalf, test burden and logistical considerations are also factors that must be considered. With one trial required for each assessment condition (*i.e.*, POV approach directions of right and left, each with turn signals enabled and disabled), a vehicle model will undergo 12 trials for BSI testing overall. Given TRC’s concern that the GVT’s robotic platform has a limited battery life, which may serve to reduce testing efficiency and delay the release of information to the public, NHTSA does not wish to impart additional burden

and delay for what it concludes to be limited benefit. In addition, since other ADAS technologies will no longer undergo seven trials, NHTSA reasons that a reduction in trials for BSI testing will best maintain consistency with other test procedures, a request expressed by several commenters. Proceeding with one trial per test condition will also best ensure performance consistency and safety benefits.

Pass Rate

The pass rate for all adopted BSW and BSI testing (*i.e.*, 20 required tests to obtain credit for BSW and 12 required tests to obtain credit for BSI) will be 100

percent. No test failures will be permitted during any of the BSW or BSI trials conducted for NCAP.

NHTSA acknowledges that some commenters suggested BSW and BSI test pass rates should be treated differently because one is a warning technology only and the other is active. However, NHTSA disagrees with this assessment. As mentioned previously, the Agency reasons its assessment of performance should be handled with the same stringency whether a technology is an active technology or simply meant to provide information to the consumer.

Tests that NHTSA is adopting for BSW and BSI testing are shown in Tables 23 and 24.

TABLE 23—BLIND SPOT WARNING (BSW) ADOPTED TEST CONDITIONS

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	POV direction of approach	Turn signal
Straight Lane Converge and Diverge .....	72.4 (45)	72.4 (45)	Right .....	Enabled. Disabled.
			Left .....	Enabled. Disabled.
Straight Lane Pass-by .....	72.4 (45)	80.5 (50)	Right .....	Enabled. Disabled.
			Left .....	Enabled. Disabled.
		88.5 (55)	Right .....	Enabled. Disabled.
			Left .....	Enabled. Disabled.
		96.6 (60)	Right .....	Enabled. Disabled.
			Left .....	Enabled. Disabled.
		104.6 (65)	Right .....	Enabled. Disabled.
			Left .....	Enabled. Disabled.

TABLE 24—BLIND SPOT INTERVENTION (BSI) ADOPTED TEST CONDITIONS

Test scenario	SV speed (kph (mph))	POV speed (kph (mph))	Lane change direction	Turn signal
SV Lane Change with Constant Headway .....	72.4 (45)	72.4 (45)	Left .....	Enabled. Disabled.
			Right .....	Enabled. Disabled.
SV Lane Change with Closing Headway .....	72.4 (45)	80.5 (50)	Left .....	Enabled. Disabled.
			Right .....	Enabled. Disabled.
SV Lane Change with Constant Headway, False Positive Assessment .....	72.4 (45)	72.4 (45)	Left .....	Enabled. Disabled.
			Right .....	Enabled. Disabled.

10. Test Procedure Refinements

Several commenters provided suggestions for specific test procedure refinements in response to the March 2022 RFC notice. The Agency provides responses to these comments in the following section.

NHTSA also published and requested comment on draft BSW and BSI test procedures in November 2019. The Agency received feedback from the public at that time, some of which was referenced again in comments to the March 2022 RFC notice. Updated BSW

and BSI test procedures reflecting the Agency’s response to the comments received will be published separately in conjunction with this notice in the related docket.

## Summary of Comments

Harmonization was a common underlying theme in the comments received to the Agency's March 2022 RFC notice. Aptiv encouraged NHTSA to align its blind spot test procedures with the BSW and BSI content within Euro NCAP's Lane Support System protocol to the greatest extent possible, whereas Bosch and Intel supported harmonization of NHTSA's BSW procedure with ISO 17387:2008, Intelligent transport systems—Lane change decision aid systems (LCDAS)—Performance requirements and test procedures. Bosch asserted that adopting the ISO standard would lessen testing complexity and burden on manufacturers, while still offering a system to evaluate system performance and robustness. For BSI assessments, Auto Innovators and Bosch urged the Agency to harmonize its test procedures with ISO 19638:2018. Both Auto Innovators and GM, in addition to Aptiv, noted that the lane widths specified (3.7 to 4.3 m, or 12 to 14 ft.) do not align with U.S. lane width standards and suggested that the Agency consider aligning the lane width specifications to Euro NCAP's: 3.5 to 3.7 m (11.5 to 12 ft.).

Other comments focused on specific procedural changes, with Aptiv raising concerns regarding the onset and termination headways specified in the BSW test procedure. The company recommended that the alert engagement requirement be defined as a minimum defined distance and be extinguished when the POV exits the forward boundary of the defined blind zone. Aptiv explained that this should reduce consumer confusion since the driver should be able to visually see the vehicle outside of the blind zone by this point, but the BSW could still be illuminated.

NHTSA also received comments on test applicability. Specifically, several commenters suggested that the Agency should only test blind spot systems that cannot be disabled by the driver.

## Response to Comments and Agency Decisions

The original lane width specifications for BSW and BSI testing of 3.7 to 4.3 m (12.0 to 14.0 ft.) were selected to overlap with American Association of State Highway and Transportation Officials (AASHTO) recommendations,<sup>338</sup> to promote consistency with other NHTSA ADAS test procedures, and to allow flexibility to contract laboratories which

could perform blind spot system testing. However, NHTSA's intent is to consider harmonization with other global testing programs wherever possible. Because of this strong interest, lane width specifications for BSW and BSI testing have been revised to be 3.5 to 3.7 m (11.5 to 12 ft.), consistent with Euro NCAP's lane width requirements.

NHTSA agrees with Bosch that alignment with elements of ISO standards (in addition to elements of other testing programs such as those in Euro NCAP) should lessen complexity and burden on vehicle manufacturers. Regarding harmonization with ISO 17387:2008 for BSW testing, several revisions have been made to better align the Agency's testing protocol and this ISO standard. Changes to the definition of the two-dimensional polygon representing the SV and POV, the range of POV lateral velocities used during the Straight Lane Converge and Diverge test, and the maximum SV blind zone width specification were made in response to the November 2019 publication of the draft BSW procedures. As noted earlier in this section, specific changes made in response to that earlier publication are reflected in updated BSW test procedures published in the docket for this notice.

NHTSA also concurs with commenters suggesting edits to the onset and termination headways in BSW testing. As such, the test procedure has been revised to clarify that the onset of the BSW is unrestricted and to state that the warning must be presented by a time no later than 300 ms after any part of the POV enters the SV blind zone, defined earlier. The intent of the onset requirement was to ensure that the BSW is presented by a certain time, not to restrict it from appearing earlier. Additionally, NHTSA has amended the duration of the required alert; the alert must remain on while any part of the POV resides within the SV blind zone during converge lane changes. For the Converge and Diverge test scenario, the alert must not be active once the lateral distance between the SV and the POV is greater than 6 m (19.7 ft.). For the Pass-by scenario, the alert must not be active once the longitudinal distance between the frontmost part of the SV and the rearmost part of the POV exceeds the BSW termination distances provided in the test procedure. These range in length from 2.2 m (7.3 ft.) for the 80.5 kph (50 mph) condition to 8.9 m (29.3 ft.) for the 104.6 kph (65 mph) condition.

Finally, to provide as much information as possible to consumers regarding BSW and BSI systems in new vehicles, at this time, NHTSA will not

consider whether the system may be disabled when it provides assessment results to the public. Thus, all BSW and BSI systems will be eligible for NCAP credit. However, to receive credit for BSW and BSI systems during program testing, NHTSA will require the BSW or BSI systems to appear 'Default ON' during each ignition/key cycle. The Agency does not expect blind spot technology's already high consumer satisfaction to decrease because of this requirement. NHTSA also expects drivers will adjust their system's settings to meet their personal preferences instead of disengaging the system altogether.

## 11. Future Considerations

### Use of Additional Test Devices

As mentioned in the March 2022 RFC, in response to prior RFC notices, many commenters previously recommended that the Agency expand blind spot system testing requirements to include motorcycle and bicycle detection. In response to the Agency's latest RFC, Somerville Bicycle Safety also voiced support for NHTSA using bicycle test devices in its BSW testing, stating that Euro NCAP is already performing this testing. Others also agreed that bicyclists should be accounted for in BSW and BSI testing. MIC/MSF, Lidar Coalition, and AMA requested that a motorcyclist test device be added so that manufacturers design their vehicles to recognize motorcyclist signatures. Many commenters also noted that motorcyclists and bicyclists are inherently more vulnerable to serious and fatal injuries as compared with occupants of motor vehicles.

### Incorporate Other Scenarios or Technology

Many commenters suggested that NHTSA ensure all ADAS technologies assessed, including BSW and BSI, perform to a high standard in order to receive credit or the highest rating possible. This included good performance in darkness, in inclement weather, and while turning. The Agency has also received similar comments in response to prior RFC notices.

Many commenters also recommended that NHTSA address other potential blind zones drivers may experience. In addition to the lateral blind zones assessed for motor vehicle presence in the Agency's BSW/BSI test procedures, commenters asserted that NHTSA should address blind zones to the front and rear of the vehicle, which may also exist, particularly in large vehicles, as they may create a potentially hazardous situation for VRUs. Many commenters

<sup>338</sup> See [https://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter3/3\\_lanewidth.cfm](https://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/chapter3/3_lanewidth.cfm).

noted that assessments for these blind spots were not proposed and requested that the Agency take them into consideration when developing BSW and/or BSI procedures.

#### Response to Comments and Agency Decisions

##### Use of Additional Test Devices

As mentioned in its 2022 RFC notice, NHTSA agrees that BSW and BSI systems capable of detecting motorcycles and bicyclists would improve safety. A review of the 2011–2015 FARS and GES data sets<sup>339</sup> showed there were 106 fatal crashes and nearly 5,100 police-reported crashes annually, on average, for same-direction lane change crashes involving a vehicle and motorcycle. In comparison, there were 542 fatalities and 503,070 police-reported crashes annually, on average, for lane change crashes involving motor vehicles. These data show that although more motor vehicle occupants than motorcyclists die in lane changing crashes, the fatality rate for motorcyclists is greater than that for vehicle occupants, as several commenters asserted. While the Agency is not aware of specific crash data for pedalcyclist lane change crashes involving light vehicles, NHTSA recognizes that cyclist fatalities are on the rise, as there were 938 pedalcyclist fatalities in 2020, representing a 9 percent increase over 2019. Pedalcyclist fatalities accounted for 2.4 percent of all traffic fatalities and 38,886 pedalcyclist injuries that year.<sup>340</sup>

At this time, the Agency has decided to prioritize testing of BSW and BSI systems on motor vehicles (excluding motorcycles) for NCAP. NHTSA maintains that a focus on vehicle detection is a reasonable initial step forward and that performing blind spot system testing on light vehicles, particularly at higher POV closing speeds, should encourage development of robust sensing systems, which may improve the detection of VRUs such as motorcyclists and bicyclists. The Agency has conducted preliminary research designed to evaluate vehicle response to VRUs.

As part of this research effort, conducted under contract with the Transportation Research Center Inc. (TRC Inc.), the Agency utilized its current BSI test procedures but varied

the POV test device (e.g., GVT and motorcycle) and the SV/POV speed (as applicable, depending on test scenario).<sup>341</sup> NHTSA found that, overall, the vehicles tested displayed performance differences between the surrogate passenger vehicle (i.e., GVT) and the surrogate motorcycle test device in the lane change scenarios assessed. For instance, one vehicle was able to detect the GVT in a blind spot for all test speeds for the SV Lane Change, Constant Headway tests but did not issue a detection alert when the motorcycle test device was within the blind spot. A similar observation was made for a vehicle in the SV Lane Change, Closing Headway BSI scenario. The vehicle failed to issue a blind spot warning at 40 kph (24.9 mph) when the motorcycle test device was within its blind spot, but it appropriately issued an alert for the GVT at this test speed. From this, it can be concluded that incorporating a motorcycle test device into the Agency's current blind spot test procedures would help to address these specific collision types.

NHTSA also plans additional research focused on characterizing the capabilities and limitations of available BSI systems, both on-road and closed track. As part of this work, the Agency plans to review crash datasets and develop additional test scenarios for motorcycles and/or bicyclists to align with the safety need. Further, as noted in the NCAP Roadmap section in this final decision notice, NHTSA plans to implement in NCAP BSW and BSI evaluation to mitigate crashes with motorcyclist and bicyclist crashes starting with model year 2031 vehicles.

#### Incorporate Other Scenarios or Technology

While NHTSA recognizes the need to assure crash avoidance systems perform well under all situations that a driver may encounter, it is not currently practical to evaluate each within the scope of NCAP. Therefore, the most frequent fatal and injurious conditions will be prioritized for evaluation. When BSW and BSI systems perform acceptably in these conditions (i.e., clear, daylight, straight and flat road) and are present in the fleet in sufficient numbers, NHTSA will evaluate real-world conditions at that time to determine whether additional condition(s) should be subsequently addressed.

<sup>341</sup>The report, *Assessment of Light Vehicle ADAS Crash Avoidance Technologies in Response to Two-Wheeled Vehicles as Principal Other Vehicles*, can be found in the docket for this notice.

The Agency also acknowledges commenter concerns regarding driver visibility. Commenters noted that certain vehicles, including large vehicles such as pickup trucks and SUVs, may have additional blind zones to the front and rear of the vehicle. As mentioned in the NCAP Roadmap section of this notice, NHTSA is currently conducting research on driver visibility to mitigate VRU injuries and fatalities. The results of this research will inform the Agency on the most appropriate approach to reduce harm to these difficult-to-see VRUs.

#### VII. Updating Lane Keeping Technologies

NHTSA has decided to (1) retain its assessment for lane departure warning (LDW) and to (2) add an assessment for lane keeping assist (LKA) for this NCAP update. As mentioned in the Agency's March 2022 RFC, lane keeping technologies, including LDW, LKA, and LCA,<sup>342</sup> can address ten pre-crash scenarios, including roadway departure scenarios and those in which the SV passively crosses the centerline or center median and strikes a vehicle travelling in the opposite direction. These scenarios resulted in 1.13 million crashes (19 percent of all U.S. crashes), 14,844 fatalities (44 percent of all fatalities), and 479,939 MAIS 1–5 injuries (17 percent of all injuries recorded), annually on average between 2011 and 2015, showing there is a significant safety need.<sup>343 344</sup>

##### A. Lane Keeping Technologies

###### 1. Lane Departure Warning (LDW)

LDW is a NHTSA-recommended technology<sup>345</sup> currently included in NCAP to mitigate the aforementioned lane departure crashes in which a driver unintentionally allows a vehicle to drift out of its lane of travel. LDW systems often use camera-based sensors to detect

<sup>342</sup>LDW alerts the driver when the car approaches or crosses lane markings, LKA gives steering support to assist the driver in preventing the vehicle from departing the lane, and LCA provides automatic steering to continually center the vehicle in its lane.

<sup>343</sup>Wang, J.-S. (2019, March), *Target crash population for crash avoidance technologies in passenger vehicles* (Report No. DOT HS 812 653), Washington, DC: National Highway Traffic Safety Administration.

<sup>344</sup>When only serious injuries (i.e., MAIS 3–5 injuries) were considered, lane keeping crashes represented the highest number of non-fatal injuries (21,282 or 0.76 percent of all non-fatal injuries), followed by rear-end crashes (17,918 or 0.64 percent), forward pedestrian crashes (5,973 or 0.21 percent), blind spot crashes (3,476 or 0.12 percent), and backing crashes (454 or 0.02 percent).

<sup>345</sup>NHTSA-recommended technologies are driver assistance technologies for which the Agency has developed performance tests and metrics, and which meet the four prerequisites for inclusion.

<sup>339</sup>Swanson, E., Azeredo, P., Yanagisawa, M., & Najm, W. (2018, September), *Pre-Crash Scenario Characteristics of Motorcycle Crashes for Crash Avoidance Research* (Report No. DOT HS 812 902), Washington, DC: National Highway Traffic Safety Administration. In Press.

<sup>340</sup>NHTSA Traffic Safety Facts, June 2022, *Bicyclists and Other Cyclists*, DOT HS 813 322.

lane markers, such as solid lines (including those marked for bike lanes), dashed lines, or raised pavement markers such as Botts' Dots<sup>346</sup> used to delineate the vehicle's travel lane.<sup>347</sup> When a LDW system detects that a vehicle is laterally approaching or crossing a lane marking, the system presents an alert to warn the driver of the unintentional shift so the driver can steer the vehicle back into its lane. LDW alerts may be visual, auditory, and/or haptic in nature. Visual alerts may show which side of the vehicle is departing the lane, and examples of haptic alerts include steering wheel or seat vibrations to alert the driver. If the driver's turn signal is activated, the LDW system interprets the lane change as an intentional act and thus does not alert the driver.

NHTSA proposed adoption of LDW systems (along with FCW systems) in its NCAP ADAS evaluations starting with 2011 model year vehicles because these systems were deemed to meet the Agency's four prerequisites for inclusion at the time.<sup>348</sup> While the Agency estimated that then-current LDW systems were only 6 to 11 percent effective in preventing lane departure crashes, NHTSA cited the large number of road departure and opposite direction crashes occurring on the nation's roadways as well as the resulting AIS 3+ injuries as reasons to include LDW in NCAP.

Since LDW's adoption in NCAP, more recent studies have provided varying statistics with respect to LDW effectiveness. In a 2017 study,<sup>349</sup> IIHS concluded that LDW systems were effective at reducing three types of passenger car crashes (single-vehicle, sideswipes, and head-on) by 11 percent, which is the same rate NHTSA originally estimated. Further, IIHS also concluded that LDW systems reduce injuries in those same types of crashes by 21 percent. UMTRI, however, found in its study of real-world effectiveness of crash avoidance technologies in GM vehicles that LDW systems showed only a 3 percent reduction (determined to be not statistically significant) for

applicable crashes.<sup>350</sup> A second, more recent study<sup>351</sup> conducted by the Partnership for Analytics Research in Traffic Safety (PARTS) also showed more limited effectiveness for LDW systems. In the PARTS study, police-reported crash data (2016 to 2021) from 13 states was combined with vehicle equipment data from 47 million vehicles from eight<sup>352</sup> vehicle manufacturers, representing 93 vehicle models spanning from model years 2015 to 2020. The resulting study dataset of 2.4 million crash-involved vehicles did not find a significant reduction in single-vehicle road departure crashes for vehicles equipped with LDW alone.

Other studies have suggested reasons for lower LDW effectiveness rates, one of which is higher driver deactivation rates caused by dissatisfaction with system functionality. In a survey of Honda vehicles brought into Honda dealerships for service,<sup>353</sup> IIHS researchers found that out of 184 vehicles equipped with an LDW system, only a third of the vehicles had the system activated.

In a similar study,<sup>354</sup> 150 crash-involved Honda vehicles equipped with Event Data Recorders (EDRs) that captured data elements related to the function and alert status of several crash avoidance systems in the time leading up to the crash event were analyzed from NHTSA's 2017–2021 Crash Investigation Sampling System (CISS). Starting with the 2016 model year, Honda began to phase-in vehicles equipped with an EDR that captures the status and activation of crash avoidance technologies such as FCW/AEB and LDW/LKA. The EDR data were assessed to identify the use and activation statuses of these crash avoidance

technologies at the time of the associated crash events. The results indicated that drivers of Honda vehicles equipped with crash avoidance systems were much more likely to have FCW/AEB systems "On" and LDW/LKA systems "Off." Specifically, 99 percent of drivers for this study had FCW/AEB systems "On" in the time leading up to the crash and thus could be afforded the benefits of these systems. With respect to LDW/LKA systems, 49 percent of the drivers had these systems "Off" at the time of the crash, and therefore were not afforded the benefits of these systems. Differences were not identified for drivers that had the LDW/LKA system "On" compared to those that had it "Off" with respect to the driver's sex, age, and race/ethnicity.

Further, in its telematics-based study on LDW usage,<sup>355</sup> UMTRI found that, overall, drivers turned off LDW systems 50 percent of the time. However, in Consumer Reports' August 2019 survey of more than 57,000 CR subscribers, the organization found that 73 percent of vehicle owners reported they were satisfied with LDW technology.<sup>356</sup>

In its March 2022 RFC notice, the Agency proposed to continue to include LDW assessments in NCAP, as the system's adoption rate has not increased as significantly as that for FCW since the inclusion of both technologies in the program. When LDW was introduced in NCAP, its fitment rate was less than 0.2 percent.<sup>357</sup> For the 2018 model year, the fitment rate for LDW was 30 percent. In contrast, the fitment rate for FCW saw an approximate 40 percent increase over the same period. Since LDW technology is currently not being offered as standard equipment on all passenger vehicles, the Agency reasons that it remains important for NCAP to continue to recommend the technology to new vehicle purchasers and inform shoppers which vehicles have systems that meet NHTSA's performance criteria. Furthermore, in recent years, many vehicle manufacturers have made improvements to sensors utilized by LDW systems for the purposes of implementing SAE Driving Automation

<sup>350</sup> Flannagan, C. and Leslie, A. (2020). *Crash Avoidance Technology Evaluation Using Real-World Crash Data* (No. DOT HS812 841). United States. Department of Transportation. National Highway Traffic Safety Administration.

<sup>351</sup> Aukema, A., Berman, K., Gaydos, T., Sienknecht, T., Chen, C.-L., Wiacek, C., Czapp, T., & St. Lawrence, S. (2023) Real-World Effectiveness of Model Year 2015–2020 Advanced Driver Assistance Systems. 27th International Technical Conference on the Enhanced Safety of Vehicles, Paper Number 23–0170.

<sup>352</sup> The eight participating industry partners that provided vehicle data for this study are American Honda Motor Co., Inc., General Motors LLC, Mazda North American Operations, Mitsubishi Motors R&D of America, Inc., Nissan North America, Inc., Stellantis (FCA US LLC), Subaru Corporation, and Toyota Motor North America, Inc.

<sup>353</sup> Insurance Institute for Highway Safety (2016, January 28), Most Honda owners turn off lane departure warning, *Status Report*, Vol. 51, No. 1, page 6.

<sup>354</sup> Wiacek, C., Firey, L., and Mynatt, M. (2023). EDR Reported Driver Usage of Crash Avoidance Systems for Honda Vehicles. Paper Number 23–0040. 27th International Technical Conference on the Enhanced Safety of Vehicles.

<sup>355</sup> Flannagan, C., LeBlanc, D., Bogard, S., Nobukawa, K., Narayanaswamy, P., Leslie, A., Kiefer, R., Marchione, M., Beck, C., and Lobes, K. (2016, February), *Large-scale field test of forward collision alert and lane departure warning systems* (Report No. DOT HS 812 247), Washington, DC: National Highway Traffic Safety Administration.

<sup>356</sup> Consumer Reports (2019, November), *Consumer Perceptions of ADAS*, <https://data.consumerreports.org/reports/consumer-perceptions-of-adas/>.

<sup>357</sup> Wang, J.-S. (2019, March), *Target crash population for crash avoidance technologies in passenger vehicles* (Report No. DOT HS 812 653), Washington, DC: National Highway Traffic Safety Administration.

<sup>346</sup> Botts' Dots are round, raised, non-reflective, pavement markers that mark travel lanes.

<sup>347</sup> Note that performance of LDW systems may be adversely affected by precipitation or poor roadway conditions due to construction, unmarked intersections, faded/worn/missing lane markings, markings covered with water, etc.

<sup>348</sup> 73 FR 40033 (July 11, 2008).

<sup>349</sup> Insurance Institute for Highway Safety (2017, August 23), *Lane departure warning, blind spot detection help drivers avoid trouble*, <https://www.iihs.org/news/detail/stay-within-the-lines-lane-departure-warning-blind-spot-detection-help-drivers-avoid-trouble>.

Level 2 systems such that LDW system effectiveness may improve, and consumer dissatisfaction may wane. Some of today's systems can assess if the driver is actively steering by measuring steering rate or torque on the steering wheel, or by utilizing direct or indirect driver monitoring systems. Furthermore, the sensing capability exists to suppress unnecessary LDW alerts and LKA activations in situations that require driving over a lane marker without the use of the turn signal, such as when trying to pass a bicyclist or drive around a pothole. Finally, since the Agency is also adopting LKA as part of this upgrade to NCAP, continuing to assess LDW functionality in addition to LKA, similar to assessing FCW in addition to AEB, and BSW in addition to BSI, should provide the greatest safety gains and most effectively address the number of fatalities and injuries related to lane departure crashes.

#### NCAP's Current Lane Departure Warning Test Procedure

In its March 2022 RFC notice, NHTSA proposed to continue its assessment of LDW systems under NCAP using the current NCAP test procedure titled, "Lane Departure Warning System Confirmation Test and Lane Keeping Support Performance Documentation," dated February 2013.<sup>358</sup> This protocol assesses the system's ability to issue an alert in response to a driving situation intended to represent an unintended lane departure and to quantify the test vehicle's position relative to the lane line at the time of the LDW alert.

In NCAP's LDW tests, a test vehicle is accelerated from rest to a test speed of 72.4 kph (45 mph) while travelling in a straight line, parallel to a single lane line, comprised of one of three marking types: continuous white lines, discontinuous (*i.e.*, dashed) yellow lines, or discontinuous raised pavement markers (*i.e.*, a combination of Botts' Dots and other retro reflective pavement markers). The test vehicle is driven such that the centerline of the vehicle is approximately 1.8 m (6 ft.) from the lane edge. This path must be maintained, and the test speed must be achieved, at least 61.0 m (200 ft.) prior to the start gate. Once the driver reaches the start gate, they manually input sufficient steering to achieve a lane departure with a target lateral velocity of 0.5 m/s (1.6 ft./s) with respect to the lane line. The driver of the vehicle does not activate

the turn signal at any point during the test and does not apply any sudden inputs to the accelerator pedal, steering wheel, or brake pedal. The test vehicle is driven at a constant speed throughout the maneuver. The test ends when the vehicle crosses at least 0.5 m (1.7 ft.) over the edge of the lane line marking. The scenario is performed for two different departure directions, left and right, and for all three lane marking types, resulting in a total of six test conditions. Five repeated trials runs are performed per test condition.

LDW performance for each test trial is evaluated by examining the proximity of the vehicle with respect to the edge of a lane line at the time of the LDW alert. The LDW alert must not be issued when the lateral position of the vehicle, represented by a two-dimensional polygon,<sup>359</sup> is greater than 0.75 m (2.5 ft.) from the inboard edge of the lane line (*i.e.*, the line edge closest to the vehicle when the lane departure maneuver is initiated), and must be issued before the lane departure exceeds 0.3 m (1 ft.). To pass the test, the LDW system must satisfy the pass criteria for three of the first five valid individual trials for each combination of departure direction and lane line type (60 percent) and for 20 of the 30 trials overall (66 percent).

#### 2. Lane Keeping Assist (LKA)

Much like FCW and BSW, LDW's limitation is that it is merely a warning-based system. These systems do not actively mitigate crashes on the driver's behalf. Rather, they require driver input for any benefit to be realized. LKA, like AEB and BSI, is an active safety system. As such, its corrective actions are designed to be initiated without driver action.<sup>360</sup>

LKA systems can help prevent an unintended lane departure where the driver is not using the turn signal, and not actively steering (*i.e.*, providing little to no steering wheel torque), to help prevent: "sideswiping," where a vehicle strikes another vehicle in an adjacent lane that is travelling in the same direction; opposite direction crashes, where a vehicle crosses the centerline and strikes another vehicle travelling in the opposite direction in an

adjacent lane; and road departure crashes, where a vehicle runs off the road, resulting in a rollover crash or an impact with a tree or other object. In addition, LKA systems may also help to prevent unintended lane departures into designated bicycle lanes.

LKA systems typically utilize the same sensor(s) used by LDW systems to monitor the vehicle's position within the lane and determine whether the vehicle is about to drift out of its lane of travel unintentionally. Because LKA systems help to guide a vehicle back into its lane without driver action, they further enhance safety beyond that achieved by LDW alone.

In its study of real-world effectiveness of ADAS technologies, UMTRI found that LKA (when combined with lane departure warning functionality) showed an estimated 30 percent reduction in applicable crashes, whereas, as mentioned previously, LDW systems alone showed a reduction of only 3 percent, which was determined to be non-significant.<sup>361</sup>

While the PARTS study<sup>362</sup> showed more limited effectiveness for LKA systems, it also highlighted the enhanced safety benefits offered by LKA compared to LDW systems. This study showed that single-vehicle road departure crashes were reduced by an estimated 8 percent (5 to 12 percent) for vehicles equipped with both LDW and LKA systems, while, as mentioned earlier, the study did not find significant results for vehicles equipped with LDW alone. Similar effectiveness was observed for LKA systems in another recent study.<sup>363</sup> For this study, production data for 11 model year 2015 through 2018 Toyota models were merged with police-reported crash files from eight U.S. states for crash years 2015 through 2019. The results showed LKA-equipped vehicles were 9 percent less likely to run off the road. However, vehicles equipped with LDW and LKA did not have a significant effect on risk of same-direction sideswipe or head-on crashes. As with LDW, the lower effectiveness rates for LKA systems stem

<sup>361</sup> Flannagan, C. and Leslie, A. (2020). *Crash Avoidance Technology Evaluation Using Real-World Crash Data* (No. DOT HS812 841). United States. Department of Transportation. National Highway Traffic Safety Administration.

<sup>362</sup> Aukema, A., Berman, K., Gaydos, T., Sienknecht, T., Chen, C.-L., Wiacek, C., Czapp, T., & St. Lawrence, S. (2023) Real-World Effectiveness of Model Year 2015–2020 Advanced Driver Assistance Systems. 27th International Technical Conference on the Enhanced Safety of Vehicles, Paper Number 23–0170.

<sup>363</sup> Spicer, R., Vahabghaie, A., Murakhovsky, D., Bahouth, G. et al., (2021). "Effectiveness of Advanced Driver Assistance Systems in Preventing System-Relevant Crashes." SAE Technical Paper 2021-01-0869. doi:10.4271/2021-01-0869.

<sup>358</sup> National Highway Traffic Safety Administration. (2013, February). *Lane departure warning system confirmation test and lane keeping support performance documentation*. See <http://www.regulations.gov>, Docket No. NHTSA–2006–26555–0135.

<sup>359</sup> The two-dimensional polygon is defined by the vehicle's axles in the X-direction (fore-aft), the outer edge of the vehicle's tire in the Y-direction (lateral), and the ground in the Z-direction (vertical).

<sup>360</sup> LKA differs from another active lane keeping technology, lane centering assist (LCA). LKA assists the driver by providing short-duration steering and/or braking inputs when a lane departure is imminent or underway; LCA provides continuous assistance to the driver to keep their vehicle centered within the lane.

from overall driver dissatisfaction with combined LDW/LKA system functionality. This was evidenced by the referenced studies for Honda vehicles, discussed previously, which found high rates of deactivation with LDW/LKA systems.<sup>364 365</sup>

However, there is also evidence that consumers appreciate the inherent benefits LKA can provide. In an August 2019 survey, Consumer Reports found that 74 percent of vehicle owners reported they were satisfied with LKA technology.<sup>366</sup> Further, 84 percent of model year 2024 vehicles are equipped with LKA systems as standard equipment.

Based on these findings on system effectiveness and consumer acceptance, there is value in adopting LKA in NCAP to complement LDW systems and prevent or mitigate a greater number of lane departure crashes involving injuries and fatalities. By adopting objective test procedures to gauge LKA system performance for NCAP's assessments, the Agency will best ensure system robustness for future lane keeping systems having enhanced capabilities (e.g., lane centering).

#### Proposed LKA Test Procedure

In its March 2022 RFC notice, the Agency proposed the adoption of certain test methods (e.g., those for LKA) contained within the Euro NCAP Test Protocol—Lane Support Systems (LSS)<sup>367</sup> to assess technology design differences for LKA. Since the test speeds and road configurations specified in Euro NCAP's protocol are similar to those stipulated currently in the Agency's LDW test procedure, adopting Euro NCAP's test protocol would allow the Agency to sufficiently address the lane keeping crash typology currently covered for LDW while also harmonizing with the European organization.

Euro NCAP's current<sup>368</sup> LSS test procedure includes a series of LKA

trials performed with iteratively increasing lateral velocities towards the desired lane line. Each LKA trial begins with the subject vehicle (SV) being driven at 72 kph (44.7 mph) down a straight lane delineated by a single solid white or dashed white line. Initially, the SV path is parallel to the lane line, with an offset from the lane line that depends on what lateral velocity is desired later in the maneuver. Then, after a short period of steady-state driving, the SV transitions to a path defined by a 1,200 m (3,937.0 ft.) radius curve. The lateral velocity of the SV's approach toward the lane line (from both the left and right directions) is increased from 0.2 to 0.6 m/s (0.7 to 2.0 ft./s) in 0.1 m/s (0.3 ft./s) increments or until acceptable LKA performance is no longer realized. Acceptable LKA performance occurs when the SV does not cross the inboard leading edge of the lane line by more than 0.3 m (1.0 ft.).

#### B. Linking Current and Proposed Lane Keeping Technology Test Scenarios to Real-World Crashes

NCAP's current LDW test conditions, as well as the future LDW/LKA test conditions described in this notice, represent pre-crash scenarios that correspond to a substantial portion of fatalities and injuries observed in real-world lane departure crashes. A review of Volpe's 2011 to 2015 data set showed that, when the posted speed limit was known, approximately 42 and 31 percent of fatalities in fatal road departure and opposite direction crashes, respectively, occurred when the posted speed was 72.4 kph (45 mph) or less.<sup>369</sup> Similarly, the data indicated 74 and 73 percent of injuries resulted from road departure and opposite direction crashes, respectively, that occurred when the posted speed was 72.4 kph (45 mph) or less.<sup>370</sup> For crashes where the travel speed was reported in FARS and GES, approximately 17 and 26 percent of fatal road departure and opposite direction crashes, respectively, occurred at travel speeds of 72.4 kph (45 mph) or less. These data also showed that, where the travel speed was reported, 71 and 78 percent of the police-reported non-fatal

road departure and opposite direction crashes, respectively, occurred at 72.4 kph (45 mph) or less.<sup>371</sup> While this data suggests that speeding is prevalent in lane departure relevant pre-crash scenarios, particularly ones that result in fatalities, a test speed of 72.4 kph (45 mph) should address a measurable portion of the travel speeds where lane departure crashes are occurring.

Volpe's data analysis also showed the predominant roadway configuration for real-world lane departure crashes (i.e., straight) also corresponds well with NCAP's test procedure. Of those road departure crashes in which roadway alignment was known, 63 percent and 78 percent of fatal and injurious crashes, respectively, occurred on straight roads.<sup>372</sup> For opposite direction-related crashes where roadway alignment was known, 70 percent of crashes with fatalities and 68 percent of crashes with police-reported injuries occurred on straight roads.<sup>373</sup> Additionally, for those road departure crashes where roadway grade was known, 71 percent of fatal crashes and 79 percent of crashes with injuries occurred on level roads.<sup>374</sup> For opposite direction crashes, these values were 68 percent and 69 percent, respectively.<sup>375</sup>

#### C. NHTSA's Proposals, Summary of Comments, Response to Comments, and Agency Decisions

##### 1. Lane Keeping Technology Inclusion in General

Most commenters supported the inclusion of active lane keeping technology in NCAP. Respondents in favor of keeping LDW and additionally incorporating LKA included advocacy groups, vehicle manufacturers, and individuals alike. Families for Safe Streets called LKA a "critical safety feature," MEMA suggested that it is "ripe" for inclusion, and, like blind spot technologies, ITS America stated that NHTSA provided sufficient data to support adding it to NCAP's suite of testing. HMNA requested that LKA, along with the other four ADAS

<sup>364</sup> Insurance Institute for Highway Safety (2016, January 28), Most Honda owners turn off lane departure warning, *Status Report*, Vol. 51, No. 1, page 6.

<sup>365</sup> Wiacek, C., Firey, L., and Mynatt, M. (2023). EDR Reported Driver Usage of Crash Avoidance Systems for Honda Vehicles. Paper Number 23-0040. 27th International Technical Conference on the Enhanced Safety of Vehicles.

<sup>366</sup> Consumer Reports. (2019, November), *Consumer Perceptions of ADAS*, <https://data.consumerreports.org/reports/consumer-perceptions-of-adas/>.

<sup>367</sup> European New Car Assessment Programme (Euro NCAP) (2019, July), *Test Protocol—Lane Support Systems, Version 3.0.2*. See section 7.2.5, Lane Keep Assist (LKA) tests.

<sup>368</sup> European New Car Assessment Programme (Euro NCAP) (November 2022), *Test Protocol—Lane Support Systems, Implementation 2023, Version*

4.2. Note that the Euro NCAP LSS test protocol has been updated from Version 3.0.2 since the March 2022 RFC's publication.

<sup>369</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745), Washington, DC: National Highway Traffic Safety Administration.

<sup>370</sup> Posted speed limit was unknown or not reported in 3 percent of fatal road departure crashes and in 14 percent of road departure crashes with injuries. For opposite direction crashes, these figures were 1 percent and 13 percent, respectively.

<sup>371</sup> Travel speed was unknown or not reported in 63 percent of fatal road departure crashes and in 68 percent of road departure crashes with injuries. For opposite direction crashes, these figures were 65 percent and 67 percent, respectively.

<sup>372</sup> Roadway alignment was unknown or not reported in 1 percent and 4 percent of fatal and injurious road departure crashes, respectively.

<sup>373</sup> Roadway alignment was unknown or not reported in 1 percent and 2 percent of fatal and injurious opposite direction crashes, respectively.

<sup>374</sup> Roadway grade was unknown or not reported in 4 percent and 19 percent of fatal and injurious road departure crashes, respectively.

<sup>375</sup> Roadway grade was unknown or not reported in 3 percent and 16 percent of fatal and injurious opposite direction crashes, respectively.



features, should be added to NCAP “as soon as possible.” Having said this, a number of commenters cautioned the Agency to ensure that active lane keeping technologies do not interfere with a driver’s attempt to pass a bicyclist or pedestrian at a safe distance.

## 2. Removal or Integration of LDW

In its March 2022 RFC notice, the Agency noted that it agreed with commenters to the 2015 RFC notice who recommended that NHTSA adopt LKA technology in NCAP. However, instead of replacing LDW with LKA, as many commenters suggested, the Agency expressed that integrating its assessments for LDW into those for LKA may be a better approach to consider. Such a method (inclusive of passive and active safety capabilities for lane support systems) would be similar to that which the Agency has adopted for forward collision avoidance systems, FCW and AEB, as detailed earlier.

As mentioned, the Agency proposed to adopt Euro NCAP’s LKA test scenarios to assess technology design differences for LKA, and since the test speeds and road configurations specified in Euro NCAP’s LSS protocol are similar to those stipulated in the Agency’s current LDW test procedure, NHTSA stated that the Euro NCAP tests should sufficiently address the lane keeping crash typology for LDW as well. As such, NHTSA solicited comment on whether it should retain its separate LDW test protocol or integrate an LDW requirement into the LKA test procedure it ultimately adopts. The Agency suggested that for systems having both LDW and LKA capabilities, it would simply turn off LKA to conduct the LDW test if both systems are to be assessed separately.

### Summary of Comments

Many commenters, including ASC, Advocates, Aptiv, BMW, Bosch, GM, HATCI, IDIADA, Intel, Toyota, and TRC supported integrating the LDW assessment into the LKA test procedure.

### Integrate Because of Testing Benefits

Test laboratories IDIADA and TRC supported consolidating the LDW and LKA test procedures because doing so offered “an advantage for those conducting the test” (TRC) and was “more convenient” (IDIADA). GM also added that integrating the two test procedures would enhance efficiency.<sup>376</sup>

<sup>376</sup> See NHTSA–2021–0002–3856, Attachment A for more information.

### Turn Off LKA Functionality To Assess LDW

ASC, Honda, TRC, and Aptiv supported turning the LKA system off to evaluate LDW, with ASC and Aptiv also expressing support for evaluating LDW alone if LKA is not available. Having said this, Aptiv stated that integrating the LDW and LKA assessments may help drive offerings of LKA. TRC mentioned that many of the scenarios and line types are already similar and that separate assessments would be easy to perform by turning off the LKA feature to conduct LDW tests.

### Integrate, But Assess as a System, Not Separately

Auto Innovators recommended that since LDW and LKA interact together in the real world, and the combined system offers greater safety benefits than individual systems, assessments should be integrated to reduce test burden. The group suggested that LDW should not be assessed separately if LKA is provided, especially since not all systems allow disabling of LDW and/or LKA. The group generally supported harmonization with Euro NCAP’s LSS protocol.

GM also supported an assessment of overall system performance. Like Auto Innovators, the automaker did not agree with assessing LDW functionality separately for those vehicles equipped with active lane keeping features. The commenter mentioned that not only is the ability to turn off LKA independently from LDW not an option for most vehicles, but the Agency’s proposal would both limit potential safety benefits [for LKS] and also continue to allow nuisance behavior from LDW systems. The manufacturer further asserted that adopting protocols that assess LDW functionality separately (within an LKA system) would limit optimization of feature behavior since modern lane keeping systems integrate LDW into LKA, such that the passive warning serves as a secondary alert to the active system (e.g., LKA, lane centering). In consideration of these comments, GM advocated that NHTSA only assess LDW functionality in cases where LKA fails to keep the vehicle in the lane per the test procedure requirements (regardless of whether the Agency maintains LDW as a separate assessment or integrates LDW assessments into an LKS test procedure).

Similarly, Auto Innovators and Toyota commented that NHTSA should evaluate LKA performance first, and if the Agency’s performance criteria is not met, only then should LDW

performance be evaluated. Auto Innovators and BMW, in addition to GM, as mentioned above, agreed that passing LKA systems should automatically receive credit for LDW (no separate LDW assessment should be necessary). GM stated that this would be consistent with the current Work in Progress (WIP) of SAE J3240, whereas Auto Innovators and BMW cited EU emergency lane-keeping systems (ELKS) regulations, which consider steering and/or braking intervention to be a haptic LDW warning.<sup>377</sup> Intel recommended that the Agency award additional points to LKA compared to LDW, since LKA can automatically prevent lane departures. HATCI also recommended that the Agency combine LDW and LKA requirements for vehicles having LKA functionality and retain a separate LDW assessment for those vehicles that do not. The manufacturer went on to say that it supports most of the test methods in Euro NCAP’s LSS protocol because the safety need in the U.S. is similar.

### Integrate LDW and LKA, But Continue To Test LDW Separately in Certain Instances

Some commenters agreed with combining LDW and LKA assessments but stated that LDW functionality should still be assessed separately for stand-alone LDW systems, or in instances where LKA can be disabled such that the system offers independent LDW functionality. In such cases, Bosch recommended performing Euro NCAP’s single line LKA tests to assess performance for the LDW system. Advocates also supported aligning with Euro NCAP’s LSS procedure and combining LDW and LKA testing if the Agency could justify doing so, but also mentioned that Euro NCAP’s protocol specifies certain scenarios for LDW-only systems and systems that offer independent LDW functionality. The group also mentioned that the Agency should “[rate] both LDW and LKS” and weight the technology offering the greater safety benefits higher. Finally, IDIADA suggested LKA should have a performance-based assessment whereas LDW could be assessed based on fitment alone since LDW offers a much smaller safety benefit than LKA.

<sup>377</sup> Commission Implementing Regulation (EU) 2021/646 of 19 April 2021 laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of motor vehicles with regard to their emergency lane-keeping systems (ELKS) [2021] OJ L133/31, § 3.5.3.1.2.

### Do Not Integrate LDW and LKA

Contrary to commenters who stated that the LDW and LKA assessments could be integrated, ZF Group and CAS recommended that LDW and LKA assessments be kept separate, particularly if either system can be disabled. DRI agreed. The test laboratory mentioned that it has seen varying performance for LDW depending on whether LKA was enabled or disabled, noting that when LKA was enabled, some vehicles would suppress the LDW alert as the LKA system attempted to intervene and keep the vehicle inside the lane, and then, when the intervention was not successful, the vehicle issued the LDW alert after the vehicle had departed from the lane. DRI further noted when LKA was disabled in those same vehicles, the LDW alerts were issued much earlier. As such, DRI concluded that, for vehicles where LDW and LKA are user selectable, vehicle manufacturers may vary the time of the LDW alert based on whether LKA is enabled. The test laboratory also noted that some LKA systems may intervene to the extent that one would have to impart additional steering toward the lane line (which may also suppress LDW if the vehicle senses the steering is intentional) to position the vehicle close enough to the lane line to issue an LDW alert.

Rivian recommended the Agency perform separate assessments of LDW-only, LKA-only, and LDW and LKA in combination. The manufacturer commented that this was most appropriate, particularly for user-configurable systems, to allow consumers to understand the safety benefits of each system individually and in combination.

### Other Related Comments

Although Honda did not express a preference for removal of LDW or integration of the system into LKA, the automaker did support adoption of the LSS protocol used by Euro NCAP. Intel also expressly supported adopting the Euro NCAP protocol.

FCA opined that the current LDW test procedure should be maintained for a transitional period of time before a new requirement is implemented. Similarly, ASC and Aptiv mentioned the need to continue to perform LDW-only assessments, at least initially, noting that not all vehicles are currently equipped with LKA because they do not have electric power steering.<sup>378</sup>

<sup>378</sup> ASC estimated that 85 percent of U.S. vehicles have electric power steering in 2022 and this number will increase to 92 percent in 2027.

Tesla stated that LDW points in Euro NCAP can be obtained either through the performance evaluation of an LDW system or presence of a BSI system; however, the automaker stated that NHTSA should evaluate the performance of LDW (rather than just presence) and BSI systems separately to ensure safety benefits for both systems are realized. Auto Innovators also noted that Euro NCAP's LSS test procedure contains the ELK—Overtaking scenario analogous to a scenario in NHTSA's BSI test procedure. However, the group suggested that the Agency keep LKA and BSI separate from one another since the U.S. market has accepted them as separate systems.

### Response to Comments and Agency Decisions

The Agency has chosen to integrate LDW and LKA testing, and as such, will evaluate LDW functionality during its LKA tests.

Many commenters noted that LDW and LKA are two components of a larger lane departure mitigation system. Not only is it possible for the two systems to be enmeshed such that one may not be operational if the other is turned off, but the Agency's goal is for drivers to find lane keeping technologies supportive of the driving task and therefore leave them enabled. As Auto Innovators reiterated, the safety benefits of both systems together are greater than the benefits of a single system on its own. This improved safety cannot be realized if consumers choose to disable one or both of these systems. This holds true even if manufacturers choose to tune their LDW and/or LKA systems to compensate for the other system being turned off, for those vehicles which offer the option to do so. Although drivers may disable one or both systems according to their preference, the Agency finds it most advantageous to the consumer to integrate both components in its lane keeping technology assessment.

Commenters suggested that NHTSA's NCAP should harmonize its lane keeping tests with Euro NCAP's LSS test procedure. At the time of publication of the March 2022 RFC, Euro NCAP evaluated LDW systems using its LKA single-line test, which used a lateral velocity of 0.2 m/s to 0.5 m/s (0.7 ft./s to 1.6 ft./s), as previously noted.<sup>379</sup> However, after the comment period for the March 2022 RFC closed, Euro NCAP introduced an updated protocol in which LKA single-line tests are

<sup>379</sup> European New Car Assessment Programme (Euro NCAP) (July 2019), *Test Protocol—Lane Support Systems, Version 3.0.2*.

conducted using lateral velocities of 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s), and the same procedure is used to evaluate LDW alerts from 0.6 m/s to 1.0 m/s (2.0 ft./s to 3.3 ft./s) lateral velocity.<sup>380</sup> It is unclear to the Agency whether these commenters desired harmonization based upon principle alone or whether commenters also believed that the specifications set at the time were appropriate.

At this time, performing LDW assessments using higher lateral velocities (*i.e.*, 0.7 m/s to 1.0 m/s (2.3 ft./s to 3.3 ft./s)) would be more representative of intentional lane changes rather than unintentional drifting, which NHTSA's LDW tests are designed to address. For intentional lane changes, LDW warnings do not serve to address a crash problem and may be viewed as a nuisance by drivers who then look to disable the LDW system. Given this possibility, the Agency will assess LDW alert functionality from 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s) in NCAP. These same lateral velocities 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s) will also be used for NCAP's LKA assessments. Note that NHTSA's current LDW protocol specifies an allowable lateral velocity range of 0.1 m/s to 0.6 m/s; thus, the chosen lateral velocity range has already been in use to assess LDW performance.

Since NHTSA's chosen LKA and LDW test specifications (*i.e.*, test scenarios, SV speeds, lateral velocities, etc.) are identical and LDW and LKA are meant to work together as a system, the Agency has chosen to evaluate LDW functionality during LKA testing. Assessing both technologies during the same test will promote efficiency, as IDIADA, TRC, and GM suggested, and reduce test burden on both NHTSA and manufacturers. It should additionally prompt expanded fleet coverage for LKA technology, as Aptiv asserted, and allow dual system optimization, as GM contended. In that vein, NHTSA expects that integrating LDW and LKA protocols will lead to a reduction in nuisance alerts.

HATCI's comment regarding the applicability of Euro NCAP's protocol to the U.S. market due to similar safety need is sound overall. That said, NHTSA also agrees with Tesla and Auto Innovators that BSW/BSI and LDW/LKA should be evaluated separately since the Agency's desire is to address intended and unintended lane changes separately. Euro NCAP evaluates BSW (called "Blind Spot Monitoring", or

<sup>380</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—Lane Support Systems, Version 4.3*.

BSM) and BSI using its Emergency Lane Keeping (ELK) Overtaking Vehicle scenario within its LSS protocol. For the Overtaking Vehicle test, lane keeping performance is evaluated using lateral velocities from 0.5 m/s to 0.7 m/s (1.6 ft./s to 2.0 ft./s), a path containing a smaller radius of curvature (800 m, or 2,625.0 ft.), and engagement of the turn signal. These requirements are designed to simulate conditions for an intentional lane change.

Because the Agency will assess LKA and LDW as a system, if a vehicle fails to adequately intervene using LKA during a lane departure, the Agency will not conduct further evaluation with the intent to provide the vehicle LDW credit only, as some commenters requested. NHTSA also will not separately evaluate LDW systems on vehicles that do not offer LKA as part of this NCAP update. These vehicles will not receive lane keeping technology credit for meeting NHTSA-approved performance metrics and the Agency will not report the presence of LDW on its website. These decisions are similar to those which the Agency has made for FCW and AEB. The Agency reasons this NCAP update is an opportunity to increase performance requirements for new vehicles to gain lane keeping technology credit to inform consumer decisions, and it is now most appropriate to highlight the performance of LKA systems, not LDW, given the greater safety gains that active technology may offer. Maintaining the current LDW protocol, even for a transitional period of time, as FCA requested, would not accomplish this goal. Having said this, the Agency does not want to discount the importance of the LDW alert to passing lane keeping scores. LKA can provide the necessary steering correction to prevent a roadway departure; however, for a distracted or inattentive driver, the LDW alert may still be necessary to ensure driver re-engagement. As will be detailed in a later section, a vehicle that fails to issue an LDW alert that conforms to NHTSA's requirements will not receive credit for lane keeping technology, regardless of whether the vehicle's LKA system provided acceptable intervention. Furthermore, as will be discussed later, while an LKA intervention will suffice as an LDW alert component, it will not be sufficient to satisfy all LDW alert requirements. As such, vehicles will not automatically receive LDW credit for a passing LKA intervention, as several commenters requested.

### 3. Lane Marking Configurations

Euro NCAP's LSS protocol specifies a single lane line to evaluate LKA system

performance.<sup>381</sup> Citing the possibility that certain LKA systems may require the presence of lane lines on either side of the vehicle's travel lane before they can be enabled, the Agency sought comment on whether it should require the use of a single lane line or two lane lines on the test surface in its final LKA test procedure.

#### Summary of Comments

Many commenters favored adopting a test procedure featuring one lane line, while several others supported adoption of two lane lines.

#### Adopt a Single Lane Line

Those in favor of a single lane line included Aptiv, Intel, AASHTO, ASC, ZF Group, HATCI, Honda, Auto Innovators, Bosch, and Tesla. AASHTO stated that testing with a single lane line would best mimic real-world conditions, as oftentimes only one line is visible, even on two lane roads, due to wear and tear, snow, etc. Bosch provided similar comments, stating that center road lines are often not detectable, particularly on rural roads, and recommended using one lane line to assess LKA performance to "maximize LKS system availability" under such conditions. In its comments, ASC additionally mentioned that testing with a single lane line will encourage systems to operate in situations where only one line is present. Similarly, Honda opined that testing with a single lane line would incentivize systems to perform better on a greater number of roadway conditions and prevent lane departures when only one lane line is detected. HATCI, ASC, and Auto Innovators recommended adopting a single lane for U.S. NCAP testing to harmonize with Euro NCAP's LSS protocol. Similarly, ZF Group recommended adopting a single lane line to "promote uniformity."

#### Adopt Two Lane Lines

AAA and GM recommended that NHTSA adopt two lane lines rather than one in its LKA test procedure to best replicate real-world roadways. BMW, FCA, and TRC similarly recommended utilizing two lane lines to evaluate system performance because two-line lanes are more common on public roads in the U.S. In fact, FCA remarked (contrary to Auto Innovators) that roads having single lane lines are "rare" in this country compared to others. TRC also added that selecting a two-line lane

marking configuration would permit more testing locations.

#### Incorporate Both One Lane Line and Two Lane Lines

Two commenters, CAS and Rivian, stated that the Agency should incorporate assessments for both one and two lane lines into NHTSA's LKA test procedure, since both line formats are present on U.S. roads. Rivian suggested that NHTSA should reward systems that perform well for both lane line types with higher scores.

#### Other Comments

Honda acknowledged that two lane lines may be required to initialize an LKA system but assumed the Agency was referring to the "operation design domain for LKS systems" in its reference to "before they can be enabled," and not an initialization process. The automaker asked that the Agency clarify the meaning of the referenced statement. Auto Innovators also referenced the need to drive a vehicle between two lane lines in some instances to assure system initialization prior to testing with one lane line. The commenter, along with Tesla, generally supported harmonization with Euro NCAP LSS protocols. However, Tesla also mentioned that if NHTSA were to adopt two lane lines to address evaluations of LKA systems that require two lines to be enabled, the Agency should evaluate how a system reacts to crossing only the near side lane line as well as both lane lines and modify passing criteria and points appropriately. Tesla further asserted that the far side lane line should trigger the LKA system, which in turn should reduce false-positive and true-negative LKA system interventions in the real world.

The Advocates stated that NHTSA should conduct an analysis of road edge lines across states and correlate this information with crash data before deciding to incorporate one lane line type or another into its LKA test procedure. Citing NHTSA data that showed 7,424 fatalities occurred on rural local/collector roads in 2021 (*i.e.*, 17 percent of all fatalities),<sup>382</sup> the group surmised that a large number of crashes may be occurring on roads having only a dashed or solid center line. The Advocates suggested that NHTSA provide data to show whether testing with one or two lane lines is more demanding on LKA systems and

<sup>381</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—Lane Support Systems, Version 4.3*.

<sup>382</sup> <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813298>.

whether one lane marking format better exposes system deficiencies.

Finally, regarding lane marking specifications themselves, Toyota and Auto Innovators commented that lane marking length should be specified since it serves as a “recognition process for the system.” The entities recommended a minimum lane marking length of 300 m (984 ft.). Aptiv and ASC recommended that the Agency align lane widths used during LDW and LKA testing (currently 3.6 to 4.3 m (12 to 14 ft.)) with U.S. lane width standards, which specify a lane width of 2.7 to 3.6 m (9 to 12 ft.). Accordingly, the companies requested that NHTSA specify a maximum lane width of 3.7 m (12 ft.), which they stated would also better harmonize with Euro NCAP, which specifies a lane width of 3.5 to 3.7 m (11.5 to 12 ft.). ASC also added that NHTSA should always reference the latest Manual on Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration (FHWA) for lane marking and road configurations.<sup>383</sup>

#### Response to Comments and Agency Decisions

For the purposes of evaluating a vehicle’s LDW alert sensitivity and primary LKA intervention capabilities, NHTSA’s testing will include the use of (1) a single solid white lane line, (2) a single dashed yellow lane line, or (3) Botts’ Dots on either the right or left side of the vehicle’s travel lane, depending on testing direction. These lane line colors and types are currently specified in NCAP’s LDW test procedure. These lane line colors/types remain acceptable for NHTSA’s testing because, per the FHWA’s MUTCD, yellow lane markings for longitudinal lines are permitted to delineate, among other things: (1) the separation of traffic traveling in opposite directions and (2) the left-hand edge of the roadways of divided highways and one-way streets or ramps. White markings for longitudinal lines are permitted to delineate: (1) the separation of traffic flow in the same direction or (2) the right-hand edge of the roadway.<sup>384</sup> The MUTCD also states that a solid line shall be used to discourage or prohibit crossing (depending on the specific application) and a broken line shall be used to indicate a permissive condition.<sup>385</sup>

Further, raised pavement markers, such as Botts’ Dots, may serve as a substitute for pavement markings, as long as they simulate that pattern of the markings for which they substitute.<sup>386</sup> Euro NCAP’s LSS test protocol specifies the use of either a solid or dashed line present in the direction of departure for LKA and LDW tests.

Adopting the single-line approach for these evaluations should ensure that LDW and LKA systems can operate in a greater number of real-world situations. Though roadways are typically designed to contain two lane markings denoting left and right sides of the lane, road conditions may vary greatly. The Agency sees merit in several commenters’ suggestions that sometimes only a single line may be visible due to road wear or precipitation. By isolating the test conditions to a single lane line on either the right- or left-hand side of the SV, the test will assess whether the vehicle can detect the lane line independent of its other surroundings, which may vary in an infinite number of ways. Since a real-world vehicle may not have a second lane line to confirm that a lane departure is occurring, a single-line test should improve sensing such that vehicles no longer require the second lane line for LDW or LKA to reliably function. Furthermore, the use of a single lane line for the Agency’s tests should not restrict manufacturers from using a second lane line, when available, to inform a vehicle’s LKA system and further improve performance in the myriad of scenarios a driver will encounter in the real world.

Given the reasons above, systems which only require the presence of one lane line to function are preferable to those which require two (*i.e.*, one on each side of the vehicle); however, certain complications arise when evaluating LKA system performance using only one lane line. NHTSA acknowledges concern exists regarding secondary lane departures that may occur after an LKA intervention. In these cases, the vehicle steers back into the lane but then overcorrects and departs the lane on the opposite side of the original intervention. These cases cannot be accounted for during tests in which there is only one lane line. Therefore, the Agency will also perform additional testing with two lane lines to evaluate a vehicle’s ability to properly

correct the vehicle’s heading after the initial intervention. As detailed in a subsequent section, the lane markings for this test series will consist of (1) a right solid white line and a left dashed white line, meant to simulate an SV traveling on a multi-lane road in the rightmost lane, and (2) a right dashed white line and a left solid yellow line, meant to simulate an SV travelling on a multi-lane road in the leftmost lane. These lane marking configurations are similar to those used<sup>387</sup> in Euro NCAP’s Emergency Lane Keeping (ELK) Solid Line test scenarios.<sup>388</sup> However, unlike in Euro NCAP’s testing, for each dual line configuration, assessments will be made for both left and right departures (*i.e.*, across both dashed and solid lane lines).

Thus, LKA testing will occur with both styles of lane markings: single lane lines on either the right or left side of the travel lane and two lane lines with one on each side of the vehicle. Vehicles traveling in real-world situations will likely encounter both scenarios, as CAS and Rivian remarked. By performing both single line and dual line assessments, NHTSA expects to ensure robust everyday performance. Systems will not be able to rely on the use of the second lane line for normal operation, but performance that is confounded by a second lane line should be evident.

To address concerns regarding initialization of LDW and LKA systems, NHTSA plans to accept information from vehicle manufacturers detailing the procedures necessary to properly initialize systems for use. This information is already being collected prior to NCAP’s current ADAS testing of new vehicle models. Further, the Agency is aware of cases where the vehicle must be driven a minimum number of miles in normal use conditions prior to assessment of ADAS technologies.

Regarding other characteristics of lane markings, as with the BSW and BSI testing included in this final notice, NHTSA has decided to adopt a 3.5 m to 3.7 m (11.5 ft. to 12 ft.) lane width specification for its LDW and LKA tests for this NCAP update. In doing so, the Agency will align with Euro NCAP’s LSS procedure and will more closely reflect AASHTO standards. The Agency will also impose a requirement that lane line markings extend for a minimum of 300 m (984 ft.), as Toyota and Auto Innovators requested. This lane line

<sup>383</sup> 23 CFR 655, Subpart F.

<sup>384</sup> *Manual on Uniform Traffic Control Devices for Streets and Highways, 11th Edition*. U.S. Department of Transportation, Federal Highway Administration, December 2023. See Section 3A.05.

<sup>385</sup> *Manual on Uniform Traffic Control Devices for Streets and Highways, 11th Edition*. U.S.

Department of Transportation, Federal Highway Administration, December 2023. See Section 3A.06.

<sup>386</sup> *Manual on Uniform Traffic Control Devices for Streets and Highways, 11th Edition*. U.S. Department of Transportation, Federal Highway Administration, December 2023. See Section 3B.14.

<sup>387</sup> Euro NCAP’s ELK Solid Line tests utilize only dashed white and solid white lane lines.

<sup>388</sup> European New Car Assessment Programme (Euro NCAP) (December 2023), *Test Protocol—Lane Support Systems, Version 4.3*. See Section 7.2.4.2.

length should be sufficient for LDW and LKA systems to interpret lane departures appropriately during the test validity period and accommodate secondary departure assessments. Finally, the Agency notes that it included the MUTCD as a reference for lane markings in both the LDW and draft LKA test procedures and has included it in the test procedures prepared for this NCAP update.

#### 4. Botts' Dots/Raised Pavement Markers Test Condition

In its March 2022 RFC notice, the Agency proposed to remove the Botts' Dots (*i.e.*, raised pavement marker) test scenario from the current LDW test. This decision stemmed from the fact that information available to NHTSA suggested that the lane markers were being removed from use in California<sup>389</sup> and a preliminary assumption that the traditional dashed and solid lane marking tests may be sufficient to evaluate vehicle performance.

#### Summary of Comments

##### In Favor of Removal

Those in favor of removing the Botts' Dots test scenario from the Agency's LDW test procedure included BMW, GM, HATCI, Honda, Auto Innovators, Bosch, TRC, MEMA, ASC, FCA, IDIADA, Intel, Tesla, and two individuals. Both HATCI and TRC cited reduced test burden as reasons to remove the Botts' Dots test condition. ASC, FCA, Intel, Tesla, and a public commenter all cited discontinued use in California as a reason for removal. Similarly, IDIADA mentioned that the Botts' Dots condition is becoming a "niche scenario with low relevancy" and Honda stated that there is no longer a safety need. TRC suggested replacing the Botts' Dots test condition with a road edge detection test because it is a more common real-world condition and possible at most testing laboratories.

##### Oppose Removal

Although the overwhelming majority of commenters were in favor of removing the Botts' Dots test condition from the Agency's LKA test procedure, Rivian asserted that this test scenario was still a necessary assessment for LDW systems. The manufacturer contended that most vehicles would likely encounter Botts' Dots at some point since lane markings across the U.S. are not uniform. Rivian also stated

that manufacturers may not design for this test condition if it was not part of NHTSA's test protocol which, in turn, would lead to reduced system effectiveness and overall safety. Along these lines, Advocates recommended that NHTSA provide information on the prevalence of Botts' Dots in states other than California and the length of time before Botts' Dots would be replaced before the Agency can be assured that removing them would not be a detriment to safety.

#### Response to Comments and Agency Decisions

NHTSA has decided not to remove the raised pavement markers test scenario, which utilizes Botts' Dots, from its LDW/LKA test procedure for this NCAP upgrade. The Agency agrees with Rivian that it is possible vehicles may encounter Botts' Dots or other raised pavement markers in lieu of painted lane lines at some point during their useful life. In fact, more recent information from Caltrans, which manages over 50,000 miles of California's highway and freeway lanes, suggests the organization has no intention at this time of removing Botts' Dots from California's roadways.<sup>390</sup> The Agency also recognizes that Botts' Dots or similar raised pavement markers are utilized in other states as well. The MUTCD provides guidelines for raised pavement markers as a substitute for broken line, solid line, and dotted lane line markings.<sup>391</sup> Given this, and the fact that such pavement markers are unique compared to painted lane markings, NHTSA agrees with Rivian that retaining Botts' Dots assessments for NCAP's LDW/LKA assessments will best assure overall LDW/LKA system effectiveness and safety. The Agency reasons the slight increase in test burden such testing will generate is worth the assurance that vehicles will react appropriately if they encounter similar lane markings.

Having said this, NHTSA also acknowledges FHWA's most recent guidance to agencies in its December 2023 MUTCD that discourages the use of raised pavement markers as a substitute for lane markings when designing roadways for automated vehicles.<sup>392</sup> As such, the Agency will

<sup>390</sup> <https://dot.ca.gov/programs/public-affairs/faqs>.

<sup>391</sup> *Manual on Uniform Traffic Control Devices for Streets and Highways*, 11th Edition. U.S. Department of Transportation, Federal Highway Administration. December 2023. See Section 3B.17.

<sup>392</sup> *Manual on Uniform Traffic Control Devices for Streets and Highways*, 11th Edition. U.S. Department of Transportation, Federal Highway Administration. December 2023. See Section 5B.02.

monitor changes made to roadway lane demarcations to better accommodate forthcoming vehicle designs and may revisit the necessity of conducting test scenarios using Botts' Dots or other raised pavement markers in the future.

#### 5. Addressing Secondary Departures

The Agency explained in its March 2022 RFC notice that it would like to be assured that, when a vehicle is redirected after an initial LKA system intervention, if the vehicle then approaches the lane marker on the side not tested, the LKA will again engage to prevent a secondary lane departure by not exceeding the same maximum excursion limit established for the first side.

To prevent secondary lane departures, NHTSA sought comments on whether it should consider modifying Euro NCAP's LKA evaluation criteria to be consistent with language developed for NHTSA's BSI test procedure to prevent this issue. NHTSA's BSI test procedure states that the SV's BSI intervention shall not cause the vehicle to travel more than 0.3 m (1 ft.) beyond the inboard edge of the lane line separating the SV's travel lane from the lane adjacent and to the right of it within the validity period. To assess whether this occurs, a second lane line is required; however, only one lane line is specified in the Euro NCAP LSS protocol for LKA testing. The Agency questioned whether the introduction of a second lane line would have the potential to confound LKA testing.

#### Summary of Comments

##### Agree With Adding Assessment for Secondary Lane Departures

The majority of commenters (Advocates, ASC, BMW, CAS, Honda, Intel, Rivian, Tesla, TRC, and ZF Group) expressed support for NHTSA modifying the LKA test procedure to ensure tested LKA systems intervene a second time to prevent secondary lane departures.

BMW did not comment that there was risk to adding a secondary lane line, since LKA systems are designed to align with the lane marking(s) after an intervention, but the commenter also recommended that the Agency adopt a two-line marked lane since it is most common. Along these lines, Intel recommended that, in adding a second lane line, NHTSA should ensure that the created lane represents real-world roadways and lane markings. Like BMW, ASC, Rivian, Tesla, and ZF Group reasoned that the addition of a second lane line should not adversely affect LKA performance. That said, ASC

<sup>389</sup> Winslow, J. (2017, May 19), Botts' Dots, after a half-century, will disappear from freeways, highways, *The Orange County Register*, <https://www.ocregister.com/2017/05/19/botts-dots-after-a-half-century-will-disappear-from-freeways-highways/>.

asserted that it was reasonable to expect that LKA systems would prevent secondary departures regardless, and ZF Group similarly mentioned that the second lane line should simply trigger an LKA intervention. Rivian was supportive of adopting a test scenario that allowed the SV to ‘ping-pong’ between lane lines two or more times to assess system functionality. CAS asserted that whether there is a lane line or not, the LKA system should keep the vehicle in the lane after an initial LKA intervention, and ensuring this functionality is important to consumers.

While CAS maintained that, for safety reasons, no amount of excursion over the other lane line was acceptable for a secondary lane departure, Honda and ASC agreed that the Agency should adopt the same maximum excursion limits for primary and secondary lane departures. Honda saw no point in deviating since the current maximum limit is based on real-world data. The automaker also requested that the Agency adopt the appropriate roadway widths (based on real-world roadways) for the tested speeds if NHTSA adopts a second lane line. The commenter asserted that adopting a lane width that is too narrow for the speeds tested may cause inadvertent LKA system activation for the opposite lane line. Similarly, Intel remarked that a dually marked lane must be greater than a certain width so that the LKA system will have sufficient margin to not exceed the maximum excursion limit.

Advocates also supported evaluating secondary lane departures but requested that if adding the second lane line reduces the stringency of lane or road departure tests, NHTSA should conduct the tests to assess prevention of secondary lane departures separately. Rivian suggested that the Agency reduce ratings for systems that struggle to prevent secondary lane departures. TRC preferred that LKA and BSI protocols have consistent language but also commented that secondary lane departure evaluations require increased space for testing.

#### Do Not Agree With Adding Assessment for Secondary Lane Departures

Some commenters did not agree with modifying the LKA test procedure to ensure systems intervene to prevent secondary lane/road departures. Several of these commenters relayed that such an assessment was not necessary (Bosch and Toyota) or not warranted (Auto Innovators and GM). Bosch indicated that if the system avoids a departure on one side of the lane, and separately when tested for the other side of the lane, then it should prevent a secondary

departure. FCA maintained that each lane departure intervention is a single event that ends after the intervention is complete. As such, the automaker considered a secondary lane departure to be a new lane departure event.

Toyota and Auto Innovators stated that since LKA is designed to prevent or mitigate lane or roadway departures due to driver inattentiveness, drowsiness, etc., secondary departures should not serve as a basis to assess system performance. Likewise, GM commented that the first intervention serves to grab the driver’s attention so that the driver intervenes to prevent a secondary departure. Auto Innovators and GM added that a driver-monitoring system may be necessary for those drivers who are not attentive after an initial LKA intervention, especially for those who may be misusing the system (e.g., driving with no hands on the wheel) and who purposely allow their vehicle to ‘ping-pong’ between lane lines. Both groups further asserted that current systems are designed to re-center the vehicle in the lane after an intervention, not to direct the vehicle toward the opposite lane marker such that a secondary lane departure would occur.

Along the lines of those comments from Auto Innovators and GM, IIHS expressed that it shares NHTSA’s concern about ramifications of LKA interventions because the group’s research<sup>393</sup> has shown that many of those drivers involved in lane departure crashes were sleeping or otherwise incapacitated (34 percent); had a non-incapacitating medical-issue, blood alcohol concentration (BAC) of 0.08 percent or more, or physical factor that could impair their ability to safely control a vehicle (13 percent), such that they would be unlikely to regain control of the vehicle after an initial LKA intervention. Accordingly, the group encouraged NHTSA to add to NCAP technologies that could detect such a driver and intervene to safely stop their vehicle, or preferably pull their vehicle over on the side of the road.

#### Response to Comments and Agency Decisions

Given the comments received, the Agency has decided to incorporate additional LKA test scenarios that are comparable (though not identical) to Euro NCAP’s Emergency Lane Keeping (ELK) Solid Line test to address secondary lane departures. NHTSA agrees with ASC that it is a reasonable

expectation that LKA systems should prevent secondary departures, and, as CAS suggested, ensuring that LKA systems keep a vehicle in the lane after an initial intervention is important to consumers. It is also imperative for safety.

Unlike the Agency’s other LKA test scenarios, these secondary departure scenarios will utilize two lane lines to permit assessment of a secondary departure. Assessments will be made for two configurations—one simulating a vehicle travelling in the rightmost lane of a multi-lane road, with a solid white line to its right and dashed white line to its left, and the second simulating a vehicle travelling in the leftmost lane of a multi-lane road, with a solid yellow line to its left and a dashed white line to its right. Since these lane line combinations are common during real-world driving on multi-lane roads, they are appropriate for inclusion in NHTSA’s testing. Also, utilizing a dashed white line and solid yellow line for the secondary departure tests effectively complements the Agency’s dashed yellow and solid white single lane line tests, respectively.

The Agency had expressed some concern in its March 2022 RFC notice that the addition of a second lane line in NCAP’s lane keeping tests may confound LKA performance and thus test results. At the time, however, the Agency did not take into consideration that Euro NCAP’s ELK Road Edge tests, which were/are performed similarly to their LKA tests, (and which the Agency is adopting for its LKA assessments), required a second lane line. Furthermore, Euro NCAP’s LSS protocol has since been updated to include a second lane line for the program’s ELK Solid Line tests, which will closely mirror the secondary departure tests adopted by NHTSA. As such, NHTSA now agrees with commenters that its initial concern was unwarranted. The Agency has not only adopted test parameters for the secondary departure test that align with Euro NCAP’s current ELK Solid Line test (with the exception of the addition of a solid yellow lane line), but it has also adopted lane width requirements for its LKA testing that match those utilized by Euro NCAP. Euro NCAP’s ability to successfully conduct the ELK Solid Line test demonstrates inherent practicality and should temper Honda’s (and NHTSA’s) previous concerns surrounding inadvertent LKA system activation caused by the opposite lane line. Furthermore, NHTSA has adopted lane marking length specifications to address commenter concerns regarding system lane recognition. The Agency has

<sup>393</sup> Cicchino & Zubly, 2017. Prevalence of driver physical factors leading to unintentional lane departure crashes. *Traffic Injury Prevention*, 18(5), 481–487.

conducted limited testing to observe secondary departures and concludes that such assessments are feasible, even considering TRC's concerns about the space required for test conduct. The Agency will specify that vehicles achieve at minimum of 3 seconds of steady state speed before the lane departure is initiated to establish a baseline path from which the vehicle will deviate. However, to restrict the required space needed for testing, NHTSA will limit the test validity period to the first of the following events: (1) the point in time when the SV travels more than 0.3 m (1 ft.) beyond the inboard edge of the primary lane line separating the SV's travel lane from the lane adjacent to it; (2) 5 seconds after the SV has established a heading away from the primary lane line and is completely within its original travel lane; or (3) 1 second after the SV travels more than 0.3 m (1 ft.) beyond the inboard edge of the secondary lane line, where the primary line is the line the SV heading's was initially directed towards and the secondary line is the line on the opposite side of the SV's travel lane with respect to the primary line. The Agency's testing has shown the track length required to fulfill these requirements is reasonable.

Like the other LKA tests adopted for this NCAP update, the SV will be driven at 72 kph (44.7 mph) for the secondary departure tests, and the lateral velocity of the SV's approach to the lane line will be increased from 0.2 to 0.6 m/s (0.7 to 2.0 ft./s) in 0.1 m/s (0.3 ft./s) increments. Acceptable LKA performance will be defined by the system's ability to prevent the SV from crossing the inboard leading edge of the lane line by more than 0.3 m (1.0 ft.). This maximum lane line excursion limit will apply for both primary and secondary departures, as several commenters requested. NHTSA agrees with Honda that there is no need to deviate from the limit adopted for the initial departure, since as mentioned earlier, it has real-world practicality. If the system's initial intervention satisfies the performance requirement, the test will continue to discern whether the vehicle's subsequent movement will cause a second LKA intervention. If the LKA system once again satisfies the performance requirements for the second intervention or does not trigger vehicle movement that necessitates a second intervention (*i.e.*, aligns the vehicle with the lane marking(s) after the initial intervention) within the validity period, the vehicle will receive passing results. Assessments will be

performed for departures on both sides of the vehicle (*i.e.*, left and right) and the same LDW warning requirements adopted for the Agency's other LKA tests (which will be defined later) will apply.<sup>394</sup>

While NHTSA agrees in theory with Bosch that an LKA system that prevents a lane departure on one side should similarly prevent a lane departure on the opposite side such that evaluations for secondary departures should be unnecessary, the Agency has an obligation to the consumer to confirm Bosch's assumption, particularly since, as will be discussed later, the Agency's testing has shown that a vehicle's response can vary based on departure direction and lane line type. It is NHTSA's hope, however, that most systems are designed to re-center the vehicle in the lane after an intervention, as Auto Innovators and GM stated, and that systems exhibiting alternative performance will undergo design improvements conducive to lane centering. As such, the Agency will not end the test after the first lane departure event, as FCA suggested, but will instead continue to assess performance after the first intervention.

NHTSA also sees merit in conducting testing to assess secondary departures despite commenters' objections that the intent of LKA is for the initial intervention to grab the driver's attention so that the driver intervenes to prevent a secondary departure. While the commenters' perspective regarding the main purpose of LKA systems may be accurate, the Agency maintains that an inattentive or drowsy driver also would likely benefit from a secondary intervention, as the primary intervention may cause the driver to suddenly attempt to retake control, potentially overcorrecting for steering and/or braking and thus imparting additional safety risk. Further, although the Agency acknowledges commenters' assertions that a driver monitoring system may aid an incapacitated driver, NHTSA is not considering evaluations for such technology as part of this effort. As will be discussed later in this notice, such systems may be considered for adoption in NCAP in the future at such time when the research has been completed and objective test procedures are available.

<sup>394</sup> Specifically, LDW warning requirements specify a visual LDW alert and an auditory or haptic alert (which may be an LKA intervention) that must be issued within a tolerance that spans 0.75 m to -0.30 m (2.5 ft. to -1.0 ft.), and the visual alert must be issued prior to, or concurrent with, the LKA intervention.

## 6. Appropriate Lateral Velocities for LKA

In its 2022 RFC notice, NHTSA cited research it had conducted on five model year 2017 vehicles to study the effect of increasing lateral velocity on LKA system performance.<sup>395</sup> For this study, the Agency used a slightly modified and older version of Euro NCAP's LSS test procedure than that discussed previously. Specifically, the Agency deviated from the Euro NCAP procedure and increased the lateral velocity of the SV's approach towards the lane line from 0.1 m/s to 1.0 m/s in 0.1 m/s increments (0.3 ft./s to 3.3 ft./s in 0.3 ft./s increments).<sup>396</sup> LKA performance was considered acceptable in instances where the SV did not cross the inboard leading edge of the lane line by more than 0.4 m (1.3 ft.).<sup>397 398</sup>

An analysis of the five tested vehicles identified performance differences between the vehicles depending on the lateral velocity used during the test. Some vehicles only provided a steering response at lower lateral velocities while others continued to produce a steering input as the lateral velocity increased. As will be discussed further in a subsequent section, the maximum excursion over the lane marking after an LKA activation was also found to be inconsistent, particularly as lateral velocity increased.

Additional LKA tests were run on six model year 2019 vehicles.<sup>399</sup> For each model, vehicle response to solid white and dashed white lines was assessed for both left and right departure directions. The same lateral velocities as those used in the model year 2017 vehicle tests mentioned previously were used in the model year 2019 testing. Findings from this testing were similar.

At the time of publication of the March 2022 RFC, to represent

<sup>395</sup> Wiacek, C., Forkenbrock, G., Mynatt, M., & Shain, K. (2019), Applying lane keeping support test track performance to real-world crash data. *26th International Technical Conference for the Enhanced Safety of Vehicles*, Eindhoven, Netherlands. Paper Number 19-0208.

<sup>396</sup> A robotic steering controller was used to maximize the repeatability and minimize variability associated with manual steering inputs.

<sup>397</sup> At the time of testing, an older version of Euro NCAP's LSS test procedure stipulated a lane keep assist assessment criterion of 0.4 m (1.3 ft.) for the maximum excursion over the inside edge of the lane marking. European New Car Assessment Programme (Euro NCAP). See *Assessment Protocol—Safety Assist, Version 7.0* (2015, November).

<sup>398</sup> Wiacek, C., Forkenbrock, G., Mynatt, M., & Shain, K. (2019), Applying lane keeping support test track performance to real-world crash data. *26th International Technical Conference for the Enhanced Safety of Vehicles*, Eindhoven, Netherlands. Paper Number 19-0208.

<sup>399</sup> Reports for these tests can be found in the docket for this notice.



unintended lane departures (*i.e.*, not an intended lane change), Euro NCAP's LSS protocol specified use of a range of lateral velocities from 0.2 to 0.5 m/s (0.7 to 1.6 ft./s) for its LKA and Road Edge recovery tests and a range of lateral velocities from 0.3 to 0.6 m/s (1.0 to 2.0 ft./s) for its Emergency Lane Keeping—Oncoming vehicle and Emergency Lane Keeping—Overtaking vehicle tests.<sup>400</sup> Given the Agency's findings from its research testing, NHTSA requested comment on whether it should consider adopting a combination of the two lateral velocity ranges specified by Euro NCAP for unintended lane departures, specifically 0.2 to 0.6 m/s (0.7 to 2.0 ft./s), for inclusion in NHTSA's LKA evaluation to encourage the most robust LKA system performance.

#### Summary of Comments

In support of combining and/or aligning tested lateral velocities to 0.2 to 0.6 m/s (0.7 to 2.0 ft./s) were Auto Innovators, Honda, ASC, BMW, FCA, HATCI, Intel, and Bosch. Several of these commenters focused on harmonization, while others mentioned system robustness.

#### Combine for Harmonization

Honda asserted that the lateral velocities should be consistent when test procedures are designed to represent the same pre-crash scenario. As such, the manufacturer supported combining the two ranges of lateral velocities. Similarly, FCA commented that aligning with the Euro NCAP procedures and combining the lateral velocity range would minimize test burden and adequately gauge performance. GM also supported the proposal to adopt a lateral velocity range of 0.2 to 0.6 m/s (0.7 to 2.0 ft./s) to "simplify testing, provide more consistency in testing, and better align with Euro NCAP and limits proposed in SAE J3240 Work In Progress (WIP). HATCI supported combining the lateral velocities to harmonize with Euro NCAP test procedures, which they considered "widely accepted" and "largely representative of the field."

However, Advocates stated that NHTSA had not provided enough data or justification to support adoption of the range of lateral velocities specified in the Euro NCAP test procedures. They asked that the Agency conduct an analysis using data from event data recorders, NHTSA's crash reconstruction databases, naturalistic driving studies, etc. to justify that the

proposed range is representative of U.S. crashes.

#### Combine To Ensure System Robustness

Intel recommended combining the lateral velocity ranges to encourage robust LKA performance, since they asserted that NCAP serves to "raise the bar" and incentivize adoption of the most advanced systems. At a minimum, however, the company recommended that NHTSA harmonize with Euro NCAP's LKA and Road Edge tests. ASC, which also favored combining the lateral velocity ranges, commented that testing at higher lateral velocities should improve system robustness and, in turn, safety and consumer acceptance. Auto Innovators similarly commented that higher lateral velocities will differentiate more robust system designs since respective testing will be more difficult to meet. However, the group cautioned that 0.6 m/s should be the upper limit used for testing, as unintended lane departures may be more difficult to distinguish at higher lateral velocities. Finally, CAS suggested that the Agency look into combining the two unintended departure ranges prescribed by Euro NCAP, as this should "provide an additional safety margin." However, like Advocates, CAS also recommended that NHTSA conduct additional research to determine whether Euro NCAP's protocol best aligns with the crash problem in the U.S.

#### Other Recommendations

ZF Group didn't agree that NHTSA should simply combine the lateral velocity ranges. They stated that "both Euro NCAP tests referenced were carefully developed and address different scenarios." Therefore, the group opined that the Agency should align with Euro NCAP's protocol (to the greatest extent possible) for both tests. In a similar vein, Rivian commented that the 0.6 m/s (2.0 ft./s) lateral velocity is appropriate for oncoming vehicle and overtaking vehicle tests because they are designed to assess systems that offer increased warning and assist thresholds; however, using a 0.6 m/s (2.0 ft./s) lateral velocity to assess vehicles in a traditional LKA test where this extended capability is not necessary may increase false positives and reduce usage of LKA systems. The manufacturer added that systems capable of performing well in oncoming vehicle and overtaking vehicle tests should receive higher scores.

#### Response to Comments and Agency Decisions

As noted at the beginning of this section, when the Agency sought comment on this specification, there were two ranges of lateral velocities being used in the Euro NCAP suite of ELK, LKA, and Road Edge tests: 0.2 m/s to 0.5 m/s (0.7 ft./s to 1.6 ft./s) and 0.3 m/s to 0.6 m/s (1.0 ft./s to 2.0 ft./s). The Agency proposed to adopt a singular range which combined the two Euro NCAP ranges for its LKA testing protocol. Newer versions of Euro NCAP's LSS procedure, dated November 2022 and December 2023, incorporate this combined range for the program's LKA and ELK tests. In tandem with the many comments received regarding harmonization, Euro NCAP's acceptance of this new range further bolsters support for the combined lateral velocity range proposed. Thus, NHTSA will adopt the combined range of 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s) for SV lateral velocities assessed in its LDW/LKA tests, with lateral velocities tested in increasing increments of 0.1 m/s (0.3 ft./s) to ensure robustness throughout the test range.

NHTSA notes that harmonization with Euro NCAP for this test specification is desired not only by the Agency but by many commenters as well. Reasons cited included minimized test burden, simplified testing, and use of widely accepted parameters. Manufacturers and test laboratories should be familiar with performing LKA-style testing using this range of lateral velocities. Further, a move to align test procedures to the most reasonable extent possible satisfies a part of the BIL, as mentioned throughout this notice.

Beyond harmonization, as Intel, ASC, and Auto Innovators noted, a wider range of lateral velocities will be more difficult to meet and should encourage manufacturers to design more robust systems for their vehicle models. NHTSA concludes ZF Group's concern regarding the differences between test types in Euro NCAP is no longer applicable since Euro NCAP has moved toward the 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s) lateral velocity range for all scenarios that will be implemented in NCAP. Also, the Agency notes that both lateral velocity ranges used previously in Euro NCAP were initially intended to approximate lateral velocities experienced during unintended lane departures, lending credence to Honda's comment regarding alignment of test specifications under similar scenarios. NHTSA does not anticipate a greater

<sup>400</sup> European New Car Assessment Programme (Euro NCAP) (July 2019), *Test Protocol—Lane Support Systems, Version 3.0.2*.

number of false positive or nuisance activation events from the use of a 0.6 m/s (2.0 ft./s) lateral velocity, as Rivian asserted, given that it is currently the upper tolerance for LDW testing and has been implemented in Euro NCAP's test protocol and the test procedure does not simulate a driver actively steering but specifies a trajectory.

Data gathered by NHTSA for both model year 2017 and 2019 vehicles shows that most vehicles failed to adequately intervene during the 0.5 m/s (1.6 ft./s) and higher lateral velocity tests; this held true for both solid and dashed line assessments.<sup>401</sup> Three vehicles failed to offer any LKA intervention at least once (*i.e.*, for either left- or right-side departures) at 0.5 or 0.6 m/s (1.6 ft./s or 2.0 ft./s). Overall, four of the 11 vehicles did not offer any intervention at least once in testing from 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s). Notwithstanding, the majority of the 11 vehicles did offer some level of lane correction. Notably, one vehicle of the 11 tested successfully prevented excessive excursion (greater than 0.3 m, or 1.0 ft.) in each of the proposed lateral velocity, departure side, and lane line type combinations tested. This result demonstrates that adequate LKA performance is achievable between the proposed lateral velocities of 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s).

#### 7. Inboard Lane Line Tolerances and Maximum Excursion Limit

The Agency sought comment on what lane line tolerances and/or alert or intervention timing would be appropriate for LDW and LKA, respectively. As mentioned, NHTSA held concerns that the safety benefits afforded by LDW technology were diminished because consumers were disabling LDW systems to address nuisance alerts stemming from excessive activations. To improve consumer acceptance and increase safety benefits, NHTSA requested comment in its 2015 RFC notice on whether to revise certain aspects of NCAP's LDW test procedure. In particular, the Agency proposed to tighten the inboard lane line tolerance for its LDW test procedure from 0.75 to 0.3 m (2.5 to 1.0 ft.). The outboard lane line tolerance would remain -0.3 m (-1.0 ft.) from the inside edge of the lane line. Through this, an LDW alert could only be issued within a window of +0.3 to -0.3 m (+1.0 to -1.0 ft.) with respect to the inside edge of the lane line to pass an NCAP LDW trial. This

<sup>401</sup> For this testing, one trial was conducted per test condition (*i.e.*, combination of lane line type, lateral velocity, and departure direction).

proposal effectively increased the space in which a vehicle could operate within a lane before the triggering of an LDW alert.

The Agency's proposal to revise the lane line tolerances received mixed support in 2015. One commenter stated the proposed change was "unduly prescriptive," and given the typical driver reaction time (*i.e.*, 1.2 s)<sup>402</sup> and target lateral velocity of 0.5 to 0.6 m/s (1.6 to 2.0 ft./s) prescribed in NCAP's LDW test procedure, an LDW alert would have to be issued at a distance of 0.6 to 0.72 m (1.9 to 2.4 ft.) to ensure that the majority of drivers could react in time to prevent a lane departure. Other commenters stated that some of the more robust systems available at the time could comply with the narrower specification and that the tolerance reduction should increase the required accuracy and quality of lane keeping systems, thus producing higher driver satisfaction, and, in turn, system use, compared to those systems that meet the current LDW requirements. Another commenter agreed that the narrowed lateral tolerance should reduce the issuance of false alerts on main roadways but cautioned the Agency that this change may not effectively address false alerts on secondary or curved roads. On these roads, the commenter stated vehicles not only tend to approach within one foot of lane lines, but also may cross them.

Given NHTSA's goal of reducing nuisance notifications to increase consumer acceptance of LDW systems, combined with several commenters' statements that current LDW systems can meet the reduced test specification previously proposed, the Agency believed it reasonable to propose the reduced inboard lane tolerance of 0.3 m (1.0 ft.).

Additionally, the Agency also contemplated reduced maximum excursion limits of the vehicle beyond the lane line. As previously noted, during the Agency's study of LKA system behavior for increasing lateral velocity<sup>403</sup> for a small sample of model year 2017 vehicles, LKA performance was considered acceptable for instances where the SV did not cross the inboard leading edge of the lane line by more

<sup>402</sup> Tanaka, S., Mochida, T., Aga, M., & Tajima, J. (2012, April 16). Benefit Estimation of a Lane Departure Warning System using ASSTREET. *SAE Int. J. Passeng. Cars—Electron. Electr. Syst.* 5(1):133–145, 2012, <https://doi.org/10.4271/2012-01-0289>.

<sup>403</sup> For the Agency's research, the lateral velocity of the SV's approach towards the lane line was increased from 0.1 m/s to 1.0 m/s in 0.1 m/s increments (0.3 ft./s to 3.3 ft./s in 0.3 ft./s increments).

than 0.4 m (1.3 ft.).<sup>404 405</sup> However, the maximum excursions over the lane marking recorded during the tests were also compared to the measured shoulder width of roads where fatal road departure crashes occurred. While the Agency found that most of the roadway departure crashes were on roads where the shoulder width exceeded 0.4 m (1.3 ft.), such that a lane departure could have been prevented if a robust LKA system was engaged and functioned properly, the analysis also identified roadways where the shoulder width of the roadway was less than the 0.4 m (1.3 ft.) maximum excursion limit (*e.g.*, certain rural roadways) used in the Agency's testing. The Agency concluded that only vehicles displaying robust LKA performance, including at higher lateral velocities, would likely prevent the vehicle from departing the travel lane on these roadways. Yet, as mentioned previously, NHTSA found that many of the assessed LKA systems exhibited inconsistent performance, particularly as the lateral velocity was increased. Several vehicles exhibited no system intervention, and others exceeded the maximum excursion limit as the lateral velocity was increased. Subsequent testing for six model year 2019 vehicles revealed similar findings, with half of the vehicle models tested showing instances of no LKA response even at 0.2 m/s (0.7 ft./s).

Since the Agency's analysis showed that most fatal crashes identified in its study were on roadways having shoulder widths that exceeded the current Euro NCAP test excursion limit of 0.3 m (1.0 ft.), NHTSA expressed in its March 2022 RFC notice that adopting the Euro NCAP criterion may provide sufficient safety benefits. However, the Agency also requested comment on whether an even smaller excursion limit may be more appropriate to account for crashes occurring on roads with limited shoulder width.

#### Summary of Comments

##### Inboard Lane Line Tolerance

Many commenters were in favor of harmonizing with Euro NCAP's current LSS test protocol but did not specify

<sup>404</sup> At the time of testing, an older version of Euro NCAP's LSS test procedure stipulated a lane keep assist assessment criterion of 0.4 m (1.3 ft.) for the maximum excursion over the inside edge of the lane marking. European New Car Assessment Programme (Euro NCAP). *See Assessment Protocol—Safety Assist, Version 7.0* (2015, November).

<sup>405</sup> Wiacek, C., Forkenbrock, G., Mynatt, M., & Shain, K. (2019). Applying lane keeping support test track performance to real-world crash data. *26th International Technical Conference for the Enhanced Safety of Vehicles*, Eindhoven, Netherlands. Paper Number 19-0208.

whether they also found the lack of inboard lane line tolerances specified in these procedures for both passive and active safety technologies to be appropriate.<sup>406</sup>

When comparing inboard lane line tolerances for LDW and LKA system activation, Advocates suggested the tolerance for LKA should be tighter than that for LDW, since LKA involves automatic intervention whereas LDW relies on human reaction, which inherently introduces delays. In contrast, FCA suggested that the activation tolerance prior to lane markings for LKA should be wider than for LDW, since LKA “is more accepted by drivers due to fewer activations” and “LKS systems need to deal with actuation latencies of steering and/or braking systems.” Rivian agreed with FCA that the LKA tolerance should be slightly higher for LKA than for LDW, since LKA systems can have a “dynamic activation range based on lateral velocity toward the line and may activate later than this range depending on the speed of the vehicle.”

Auto Innovators suggested a defined inboard lane line tolerance, requesting that the current protocol value, 0.75 m (2.5 ft.), be used. The group explained that this will allow the driver ample time to intervene prior to the LKA intervention. They also noted that if the warning was forced to be issued closer to the lane line, it would become redundant with the active safety technology and would no longer provide the driver time to respond.

#### Maximum Excursion Limits

The Agency also received comments addressing the maximum excursion limits permissible for LKA interventions and/or LDW alerts. ASC, Aptiv, Auto Innovators, BMW, Intel, Tesla, and Toyota supported an excursion limit of 0.3 m (1.0 ft.) over the inboard lane line for both LDW and LKA assessments instead of the 0.4 m (1.3 ft.) limit initially proposed by NHTSA for LKA. Auto Innovators and Toyota added that this limit was justified based on NHTSA’s 2018–2019 CISS data, which showed that most road departure crashes occurred when the departure distance from the lane marking was more than 0.3 m (1.0 ft.), providing reason not to reduce the excursion limit.

<sup>406</sup> Euro NCAP specifies that vehicles must issue an LDW alert prior to  $-0.2$  m (0.7 ft.) from the inner lane edge for all lateral velocities up to at least 1.0 m/s (3.3 ft./s) to receive credit for an LDW system under the Human Machine Interface (HMI) category. It does not dictate an inboard lane line tolerance prior to which an LDW system may not issue an alert. Similarly, Euro NCAP does not prohibit LKA interventions from occurring too early.

Auto Innovators added that this excursion tolerance should be adequate to avoid crashes on road shoulders and limit interventions. Tesla stated that adopting a 0.3 m (1.0 ft.) excursion limit was sufficient to ensure that LKA systems would “maintain tight control over vehicle lateral motion in lane,” and suggested that the Agency maintain this limit for LDW as well.

IDIADA stated that the Euro NCAP test protocol stipulates that the excursion limit (*i.e.*, 0.3 m (1.0 ft.)) is referenced from the outer face of the tire to the inner edge of the lane marking. Since the lane markings are typically 0.2 m (0.7 ft.) wide, this allows a vehicle to have 0.1 m (0.3 ft.) of actual excursion after the lane marking. The laboratory stated that the tolerance is provided to improve consumer acceptance, essentially preventing system designs that are overly intrusive such that they constantly correct vehicle trajectory, but is also limited enough to not cause safety concerns. BMW’s comments closely aligned with those of IDIADA. The automaker explained that, with a 0.3 m (1.0 ft.) excursion limit, intrusion onto the shoulder (or into another lane) would be 0.15 to 0.2 m (0.49 to 0.66 ft.) given lane markings are typically 0.1 to 0.15 m (0.33 to 0.49 ft.) wide, which should be adequate to avoid collisions with other obstacles. Furthermore, BMW asserted that reducing the excursion limit would require earlier system interventions at higher lateral speeds, which could increase the number of interventions overall and lead to reduced acceptance.

Intel specifically remarked that the 0.3 m limit was appropriate for LDW (in addition to LKA) “since it covers the flat and elevated road edges as a lane border.” Other commenters supported a 0.3 m (1.0 ft.) excursion limit specifically for LKA testing. Honda commented that a 0.3 m (1.0 ft.) excursion limit was appropriate for LKA, acknowledging that the ability of a system to mitigate lane departures in the real world is associated with the amount of allowable excursion. HATCI and DENSO also recommended a 0.3 m (1.0 ft.) excursion limit for LKA, with DENSO remarking that LKA may become “cumbersome” when a driver must intentionally move into another lane to avoid an obstacle because of lane and tire widths if a lower limit is allowed. GM expressed support for the 0.3 m (1.0 ft.) limit for LKA, stating that such a tolerance was sufficient to prevent roadway departures even when shoulder width is limited. However, for LDW, the automaker commented that such alerts should not be required until after the referenced excursion limit is

reached to minimize nuisance alerts and subsequent system deactivation.

Bosch supported an outboard excursion limit of 0.3 m (1.0 ft.) for LDW alert issuance and 0.4 m (1.3 ft.) for maximum vehicle excursion during LKA intervention but also supported aligning with Euro NCAP’s tolerances. ZF Group commented that the proposed 0.4 m (1.3 ft.) excursion limit for LKA should be sufficient in most situations, but for construction areas or those with limited shoulder width, the company proposed that LKA should be disabled, and the driver should subsequently be notified.

For LDW, Rivian suggested a maximum range of 0.3 m (1.0 ft.) over the lane line and 0.15 m after crossing the outer edge of the lane line as an “acceptable activation range,” as this would allow for different LDW warning settings (*e.g.*, early, normal, late). The automaker further commented that 0.3 m (1.0 ft.) is an appropriate excursion tolerance for LKA and LDW testing involving lane markings, but not a road edge. Also specific to road edge testing, Rivian suggested a reduced excursion limit of 0.1 m (0.33 ft.) for systems offering road edge detection. For systems not designed for road edge detection, the company suggested that if such systems are able to meet the 0.1 m (0.33 ft.) excursion limit, they should score higher than those that can only meet the 0.3 m (1.0 ft.) limit. Similarly, Advocates suggested that different excursion limits are warranted for different conditions, stating that Euro NCAP proposes a tighter limit for their road edge detection test compared to their single line lane tests. Advocates also noted that the maximum excursion limit should be based on analysis of real-world data, including crashes and road dimensions, in the U.S. Like other commenters, MEMA suggested that the Agency should focus on road edge detection if it desires a “more targeted approach” for the excursion limit.

CAS stated that a 0.3 m (1.0 ft.) excursion limit over the lane marking, as specified by Euro NCAP, was “unacceptable,” and recommended that the limit “be reduced to zero to account for roads with limited or no shoulder width.” The group noted that lane markings serve to promote safety and often denote the edge of the road, such that an excursion of any extent over a lane line may induce a crash with other vehicles, pedestrians, or cyclists, or cause the vehicle to exit the roadway.

In response to NHTSA’s notation that the 0.3 m (1.0 ft.) excursion limit is a Euro NCAP requirement, FCA stated that it supported harmonization efforts with other rating programs in general

but cautioned NHTSA to consider the effect on U.S. driver acceptance when considering a reduced excursion limit. The manufacturer suggested that any further reduced excursion limit may translate to a more intrusive system, resulting in a reduction in acceptance. Finally, TRC did not recommend a specific tolerance, but suggested that the tolerance adopted for LKA should also be adopted for LDW.

#### Response to Comments and Agency Decisions

##### Inboard Lane Line Tolerance

Based on the lack of definitive data regarding the most appropriate LDW alert warning time, and no clear consensus among commenters, the Agency has decided to retain its current 0.75 m (2.5 ft.) inboard lane line tolerance for LDW activation during LKA testing at this time. This tolerance will also apply to LKA engagement. Neither an LDW nor LKA intervention shall occur when a vehicle is farther than 0.75 m (2.5 ft.) from the inboard edge of the lane line. NHTSA reasons this approach will allow manufacturers the flexibility to design LDW and LKA systems to better identify when a driver is actively steering and engaged in the driving task to suppress the alert and intervene when the turn signal is not in use.

NHTSA acknowledges that many commenters responding to the March 2022 RFC supported the whole or partial adoption of Euro NCAP's LSS test protocol. In accordance with the BIL mandate, NHTSA seeks to align with other global rating programs whenever it is appropriate to do so. However, as previously noted, there is no inboard lane line tolerance provided for either Euro NCAP testing or for EU regulations regarding lane keeping systems. Consequently, if enabled, these systems may activate at any time prior to an excursion limit beyond the lane line. There is a need to better define when LDW or LKA should be suppressed, and an open-ended tolerance will not solve the issue of nuisance alerts or inappropriate intervention.

NHTSA also has concerns with the initially proposed inboard tolerance of 0.3 m (1.0 ft.). The Agency is still of the opinion that a tightened inboard lane line tolerance would likely deter the excessive alerting currently driving consumer dissatisfaction. However, based on the comments received, the Agency could also limit a manufacturer from issuing a legitimate alert regarding an impending/ongoing lane departure, or initiating an intervention, at an appropriate time. Based on these

concerns, the Agency has decided to retain its current 0.75 m (2.5 ft.) inboard lane line tolerance for LDW activation during LKA testing at this time. NHTSA may again consider tightening this tolerance in the future once system confidence and accuracy improves or as additional lane keeping systems (*i.e.*, LCA) are introduced.

##### Maximum Excursion Limit for Vehicles During LKA Intervention

The Agency received many comments in support of a  $-0.3$  m ( $-1.0$  ft.) excursion limit from the inboard lane line edge for both LDW issuance and LKA intervention. In addition to commenter support, the Agency notes that adoption of this maximum LKA excursion limit will harmonize NHTSA's NCAP test requirement with Euro NCAP's, meeting one of the Agency's primary objectives.<sup>407</sup> As such, NHTSA will move forward with the adoption of a maximum vehicle excursion of  $-0.3$  m ( $-1.0$  ft.) for its LKA test in NCAP.

The Agency agrees that the ideal amount of allowed vehicle excursion beyond a lane marking would be zero, as CAS suggested. However, NHTSA is concerned that requiring the vehicle to remain solely between the lane lines, particularly at higher lateral velocities, may result in a potential increase in nuisance alerts and/or excessive activations, which could result in greater system deactivation. IDIADA and BMW noted that an excursion limit of  $-0.3$  m (1.0 ft.) from the inboard lane line edge translates to anywhere from 0.1 m (0.3 ft.) to 0.2 m (0.6 ft.) of vehicle encroachment into the adjacent lane or shoulder. Given this, combined with the data supplied by Auto Innovators and Toyota showing that the departure distance from the lane marking for most road departure crashes was greater than 0.3 m (1.0 ft.), NHTSA agrees with GM that this excursion allowance should be sufficient to prevent roadway departures, even on roads where shoulder width is limited. NHTSA also reasons that the adopted approach should balance consumer acceptance difficulties with real-world benefit.

Further, NHTSA's model year 2017 and 2019 LKA testing demonstrated that compliance with this excursion limit is achievable, even up to lateral speeds of 0.6 m/s (2.0 ft./s). Specifically, two of the total 11 vehicles tested were able to comply with an LKA excursion limit of  $-0.3$  m ( $-1.0$  ft.) at least once in a 0.6 m/s (2.0 ft./s) test. Three additional vehicles fell between the  $-0.3$  m ( $-1.0$

<sup>407</sup> It should be noted that the LDW excursion limit in Euro NCAP is  $-0.2$  m ( $-0.7$  ft.).

ft.) and  $-0.4$  m ( $-1.3$  ft.) limit at least once at this upper lateral velocity, demonstrating that some vehicles came within inches of achieving satisfactory performance during a trial.

Finally, NHTSA will adopt the same maximum excursion limit of  $-0.3$  m ( $-1.0$  ft.) over the inboard lane line for LDW alert issuance. As previously discussed, for vehicles with LKA, LDW will become part of an expected LKA activation. Thus, maximum excursion tolerance of these lane keeping technologies will match, as TRC requested. NHTSA notes that the current LDW test procedure allows activation of LDW within the same tolerance range adopted (0.75 m to  $-0.3$  m, or 2.5 ft. to  $-1.0$  ft.).

##### 8. LDW Alert Modalities and Requiring an LDW Alert During LKA Intervention

As part of NHTSA's March 2022 RFC notice, the Agency sought comment on whether it should award LDW credit to vehicles equipped with LDW systems that provide a passing alert, regardless of the alert type issued, or whether there are certain LDW alert modalities (such as visual-only warnings) that it should consider unacceptable when determining whether a vehicle meets NCAP's performance test criteria. NHTSA also asked whether it should consider only certain alert modalities (such as haptic warnings) effective because they may be more effective at re-engaging the driver and/or have higher consumer acceptance. Finally, NHTSA questioned whether it was necessary to require that an LDW alert, designed to re-engage the driver, be issued when an LKA system is activated, since these systems are designed to intervene and provide steering and/or braking to prevent unintentional lane departures (*e.g.*, when a driver is distracted).

The Agency's questions stemmed in part from concerns (similar to those raised for FCW) that LDW systems providing only a visual alert may be less effective than systems utilizing other alert modalities (*i.e.*, auditory or haptic) in medium or high urgency situations.<sup>408</sup> NHTSA notes that results from a large-scale telematics-based study conducted by UMTRI on LDW usage<sup>409</sup> raised questions as well. As

<sup>408</sup> Lerner, N., Robinson, E., Singer, J., Jenness, J., Huey, R., Baldwin, C., & Fitch, G. (2014, September), *Human factors for connected vehicles: Effective warning interface research findings* (Report No. DOT HS 812 068), Washington, DC: National Highway Traffic Safety Administration.

<sup>409</sup> Flannagan, C., LeBlanc, D., Bogard, S., Nobukawa, K., Narayanaswamy, P., Leslie, A., Kiefer, R., Marchione, M., Beck, C., and Lobes, K. (2016, February), *Large-scale field test of forward collision alert and lane departure warning systems*

part of this effort, researchers investigated driver acceptance of LDW alerts in vehicles providing auditory-only alerts and in vehicles where the driver had the option to select between either an auditory or haptic alert. When the latter was available, the study found the driver selected the haptic warning 90 percent of the time; when this setting was chosen as the preferred alert setting, the driver turned the LDW system 'off' 38 percent of the time. Thus, the LDW system was not providing alerts. For the system that only issued an auditory warning with no option for haptic alerts, LDW functionality was turned 'off' 71 percent of the time. Based on the findings from UMTRI's research, NHTSA tentatively concluded that haptic alerts improve driver acceptance of LDW systems.

The Agency's December 2015 notice also addressed the issue of drivers choosing to disable their vehicle's LDW system.<sup>410</sup> In that notice, the Agency referenced several studies finding that LDW system disablement arose from frequent false activations. In response to these findings and concern over diminished safety benefits due to consumer dissatisfaction with LDW systems, the Agency solicited comment at that time as well on whether it should award NCAP credit only to LDW systems that issue haptic alerts. NHTSA opined that haptic alerts may be viewed as less of a nuisance by consumers, offering greater consumer acceptance compared to auditory alerts and potentially improving the effectiveness of LDW alerts because of less frequent system disengagement. However, commenters responding to the December 2015 notice generally did not support a requirement for a specific warning type, with most suggesting the Agency should not require a specific LDW alert modality to promote system availability across a larger number of vehicles and afford flexibility to manufacturers so they may optimize human-machine interface (HMI) designs for a growing suite of ADAS.

#### Summary of Comments

Similar to FCW and BSW, comments received on the allowable alert types for LDW systems were varied. Some respondents recommended the Agency impose no restrictions on alert types, a few recommended certain alerts should be unacceptable, several requested additional requirements for certain alert modalities or multi-modal modalities, and others promoted a specific alert

type. Commenters also provided mixed recommendations on which type of alert, if any, should be issued in the event a vehicle's LKA system intervenes to prevent a lane departure.

#### Allow All Alert Types

Those in favor of allowing any type of LDW alert during Agency testing included Auto Innovators, Honda, IDIADA, HATCI, Intel, Rivian, Bosch, and an anonymous public commenter.

Auto Innovators, citing a lack of evidence that one alert type is more effective than another, stated that NHTSA should pursue a technology-agnostic approach to allow manufacturers to pursue designs preferred by their customers. A public commenter agreed. Rivian stressed that the alert type is often a subjective preference and although many drivers prefer haptic warnings, not all do, and those that don't should be able to purchase vehicles that have alerts suiting their preference.<sup>411</sup> Further, the automaker opined that NHTSA should award credit for any form of alert since all modalities should increase the possibility that the driver will become reengaged.

Like Auto Innovators, IDIADA stressed the importance that NHTSA be flexible with respect to alert type(s) so that manufacturers have greater opportunity to provide real-world benefits, particularly for a technology like LDW, which generally has lower consumer acceptance. HATCI expressed similar sentiments, stating that "[current] flexibilities allow industry to optimize and adjust the alerts based on the multitude of ADAS technology installed, the interaction between the technologies, and research and development findings." The manufacturer warned that restricting system alerts to specific modalities may limit future alert strategies and have unintended consequences as ADAS technology evolves and other systems are introduced. Auto Innovators suggested that the Agency should encourage manufacturers to develop the most effective systems, which may involve a suite of multimodal alerts and not simply a single modality type. Similarly, Honda noted that differences in effectiveness and consumer acceptance stemming from the use of various alert approaches cannot be captured based solely on alert modality and therefore restricting the alert types would not be justifiable. Intel stated that modality should not be restricted because credit should be based on alert

effectiveness (*i.e.*, an alert resulting in passing performance is effective, regardless of the alert modality type). Finally, noting that system reliability is a factor in consumer acceptance of LDW systems, not just warning type, Bosch also remarked that any alert modality type should be accepted for credit.

#### Restrict Alert Types

A few commenters recommended that the Agency award credit to certain alert types and not others. Aptiv and ASC encouraged the Agency to restrict auditory alerts to improve consumer acceptance and usage. Both entities cited UMTRI's findings (referenced in the March 2022 RFC notice and again above) that 90 percent of test participants opted for haptic alerts over auditory alerts, and when an auditory alert was the only option, the LDW system was turned off 71 percent of the time.

#### Add Requirements to Visual Alerts or Require Multiple Modalities

Other commenters suggested that certain alert types may be acceptable, but only if they meet certain requirements or are paired with a second alert modality.

DRI suggested that the Agency discontinue the acceptance of visual alerts, or alternatively, prescribe minimum characteristics for such alerts (*i.e.*, size, color, brightness, location) to help gain the driver's attention. The test laboratory contended that in many LDW systems, the visual alert, which is typically a telltale in the instrument panel that changes color, is "too small," appears in "non-attention-capturing colors (*e.g.*, white)", or is otherwise inconspicuous. The company also stated that a distracted driver's gaze would likely not be forward-looking, such that a visual alert located in the instrument panel would not be helpful like an auditory or haptic alert would be to capture the driver's attention. DRI further stated that a visual LDW alert is often intended to be an indicator to a driver regarding the "real" alert, which may be auditory or haptic, such that it serves to convey visually to the driver why they are hearing or feeling, rather than the visual alert being a warning in and of itself. As such, the laboratory opined that visual LDW alerts are not effective at alerting the driver unless they are combined with an auditory or haptic alert. Toyota and AAA expressed similar comments.

Toyota noted that a visual-only LDW alert may not be effective for a distracted or drowsy driver. Accordingly, the manufacturer recommended that an LDW system

(Report No. DOT HS 812 247), Washington, DC: National Highway Traffic Safety Administration.

<sup>410</sup> 80 FR 78522 (Dec. 16, 2015).

<sup>411</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-4050>. See citation 4.

should be required to have two different warning modalities—visual plus either haptic or auditory, as research has shown that these warning types elicit essentially equivalent drivers' response times.<sup>412</sup> AAA recommended that any visual alert also be accompanied by a haptic alert. GM contended that multimodal (*e.g.*, visual plus directional auditory or directional haptic) alerts are necessary for 'imminent crash alerts', but visual-only alerts are acceptable for 'cautionary crash alerts' to limit instances of drivers turning off LDW systems due to alert annoyance. That said, the manufacturer opined that credit for LDW alerts in NCAP testing should only be provided for multimodal alerts that include both a visual and haptic or auditory alert. Like DRI, GM also suggested that the Agency impose additional requirements for visual alerts, recommending that visual alerts should not only "help explain the alert to the driver (including alert criticality)" but should also "be positioned such that they draw the driver's attention to the general direction of the crash threat." This directional requirement, referenced previously, was also suggested for haptic and auditory components of multimodal alerts.

Other commenters also favored additional requirements for visual alerts. One anonymous commenter recommended that such alerts be directly visible (in the driver's line of sight) without requiring the driver to look down to notice the indicator (*e.g.*, in a heads-up display, instrument cluster that is fairly high on the dashboard, etc.). Similar to Toyota and AAA, however, the commenter stated that visual alerts presented outside of drivers' line of sight could receive credit if a separate warning type (*e.g.*, auditory or haptic) is also provided. FCA held the same view. The manufacturer, which, like others, also mentioned higher effectiveness and improved customer satisfaction for audio-visual and haptic-visual alerts, suggested that the visual warning should appear in the driver's direct line of sight for dual-modality alerts to receive credit.

#### Haptic-Only Alerts

With respect to haptic warnings specifically, FCA commented that the Agency should not limit credit solely to haptic warnings, as consumer acceptance of LDW systems in general has improved in recent years because of

improved line detection capability and overall system performance.

Tesla recommended that NHTSA award credit to systems that issue haptic alerts, regardless of whether other alert modalities are provided. The manufacturer referenced research from the University of Michigan Transportation Research Institute (UMTRI) that cited drivers' preference for haptic alerts.<sup>413</sup> Similarly, IDIADA suggested that since haptic warnings have higher consumer acceptance rates, they may also offer higher real-world benefits if such systems are less prone to deactivation. Advocates favored requiring haptic alerts (to promote their adoption) if they improve driver acceptance, as NHTSA stated in the RFC Notice.<sup>414</sup> The group suggested that automakers would still be able to implement additional human-machine interface (HMI) designs if they chose to. ZF Group suggested that the Agency award credit to haptic seatbelt warnings, as their research has shown them to be more effective than other alternatives.

GM stated that the Agency should award additional credit to their Safety Alert Seat (SAS) vibration alerts, and to other haptic alerts that can support equivalent rationale.<sup>415</sup> While TRC noted testing concerns with haptic alerts, explaining that alert flags for haptic alerts are sometimes difficult to collect due to sensor noise, especially for alerts issued from the seat or steering wheel, GM stated that SAS vibration alerts are triggered simultaneously with an auditory alert by the same ADAS signal and can be detected by various means during testing (*e.g.*, voltage readings, vibration sensors, auditory microphone, etc.). GM stated SAS alerts allow non-visual crash alerts to be detected by hearing-impaired drivers, thus improving accessibility. Further, the manufacturer noted that in a large-scale telematics-based study funded by NHTSA, SAS alerts, relative to auditory alerts, were preferred by drivers and also increased usage of the LDW system.<sup>416</sup> More specifically, for vehicles with SAS vibration alerts, drivers left LDW on 62 percent of the time, compared to 29 percent of the time for vehicles offering only auditory alerts.

#### Weight Alert Credit Depending on Type

A few commenters suggested that different scores or ratings should be assigned to the various alert modalities.

Rivian suggested that higher scores be assigned to systems proven to be more effective. Specifically, it recommended that the Agency should increase ratings for vehicles having alerts comprised of additional modalities beyond a visual cue but stated that vehicles offering visual-only alerts should not be penalized with a test failure. Likewise, ZF Group also recommended that NHTSA provide higher scores for alert types that reduce driver reaction time compared to other types. Along similar lines, citing both increased effectiveness and consumer acceptance for haptic alerts, one public commenter suggested that NHTSA reserve full credit for systems that offer haptic alerts, or which combine haptic alerts with visual or auditory warnings, and award partial credit to those systems that issue only a visual or auditory alert.

#### Other General Topics on LDW Alerts

The Agency received a few other general comments surrounding LDW alerts. One public commenter suggested that an LDW alert issued simultaneously with an LKA intervention should also receive credit. GM stated that NHTSA should only assess LDW functionality in cases where LKA fails to keep the vehicle in the lane per the test procedure requirements (regardless of whether the Agency maintains LDW as a separate assessment or integrates LDW assessments into an LKA test procedure). In such cases, the automaker recommended requiring a visual and non-visual alert, as mentioned previously.

Advocates recommended that the Agency expedite additional research on HMI to identify alert modalities and designs that are most effective at reengaging the driver and "eliciting a safe, timely, and accurate response." The organization suggested there may be further benefit realized from standardizing alerts, especially for drivers that use multiple vehicles. Contrary to this, HATCI favored flexibility with respect to alert types. The automaker mentioned that it supports adopting processes and/or performance-based methods developed by organizations such as SAE's Human Factors committee to evaluate alert effectiveness to not limit future alert strategies for new ADAS technologies.

#### Requiring an LDW Alert During LKA Intervention

Several commenters, including AAA, AASHTO, Advocates, CAS, GM, Honda, Intel, ZF Group, and a public commenter, agreed that the Agency should specify that an LDW alert must be issued even when LKA is activated,

<sup>412</sup> Okuma et al. "A Study of Tactile Driver Interface using Seat Vibrations." Transactions of Society of Automotive Engineers of Japan. Vol. 39, No. 6, November 2008, p.59–54.

<sup>413</sup> 87 FR 13460.

<sup>414</sup> 87 FR 13460.

<sup>415</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-3856>. See Appendix 2 for rationale and supporting data.

<sup>416</sup> DOT HS 812 247.

mainly because they reasoned that re-engaging the driver was important. CAS suggested that an LDW alert could inform the driver that either the LKA system has failed to respond, or the intervention required exceeded the system's capabilities such that the driver's response is required. AASHTO commented that the alert would serve to let the driver know the LKA system was intervening and that the vehicle was not altering its trajectory due to weather or road conditions. Similarly, AAA opined that the alert could serve to ensure the system intervention was not misinterpreted as a system malfunction. Intel requested some type of warning, explaining that it is preferable for a driver to become aware and respond during a lane departure event. IDIADA expressed that it was appropriate to issue an LDW alert in "safety critical scenarios,"<sup>417</sup> but not for other LKA interventions.

Honda specifically mentioned that the system should issue a visual alert to best balance consumer acceptance and system effectiveness (*i.e.*, safety benefits). That said, the automaker, along with many others noted below, asserted that LKA systems inherently provide a haptic alert when they move the steering wheel to actively prevent lane departures. GM also recommended issuance of a visual alert to limit driver nuisance and subsequent system deactivation. The manufacturer, like others, asserted that it may be beneficial to let the driver know that the LKA system has been activated, but this should be communicated via a visual alert, and additional non-visual alerts should not be required unless the LKA intervention is insufficient to prevent the driver from crossing the lane line. In such instances, GM recommended that a flashing visual alert should be used, along with an auditory or haptic alert. ZF Group suggested that an alert should be issued to the driver when LKA is activated, but that this alert should be different than an LDW warning to limit driver confusion.

Many other commenters, including Auto Innovators, BMW, Bosch, FCA, HATCI, Rivian, Subaru, Tesla, and Toyota, objected to NHTSA requiring an LDW alert in the event of LKA activation. Bosch asserted, similar to Honda, that an additional LDW alert would be redundant as a warning to the LKA intervention. Similarly, Rivian explained that the steering and/or braking from the LKA intervention effectively alerts the driver to the fact

they are drifting from their lane. The company further stated, and Toyota agreed, that LDW alerts should only be issued to warn the driver if the LKA system fails to prevent the vehicle's departure from the lane. Toyota, Tesla, and Auto Innovators maintained that frequent LDW alerts can be annoying to drivers, with Tesla adding this is especially true for those that may actually be alert and intentionally drifting to prevent a hazard or for an upcoming turn. As such, the three commenters asserted NHTSA must find the right balance between LDW and LKA to realize the highest benefits.

Other commenters, including BMW, FCA, and Subaru, also stated that an LDW alert is not needed if LKA operates. Subaru and BMW, along with Auto Innovators, indicated, like Rivian, that steering assistance (Subaru) and/or braking (BMW) from an LKA system should serve as an effective alternative to a haptic LDW alert. Subaru pointed to Euro NCAP's 2016–2018 LSS protocol, which recognized LKA steering as a replacement for an LDW haptic alert, and BMW directed the Agency to EU regulations, which also aligned.<sup>418</sup>

#### Response to Comments and Agency Decisions

Many of the comments submitted to the Agency's most recent RFC notice on acceptable LDW alert types echoed those received previously in response to the Agency's 2015 RFC notice. Namely, most respondents were concerned about consumer dissatisfaction with LDW alerts. Thus, they favored an alert requirement that is not prescriptive with respect to the type of alert modality so that alerts may be optimized for consumer preferences. Many also cautioned the Agency that requiring an LDW alert during an LKA intervention may exacerbate existing consumer acceptance issues for LDW and LKA systems.

Considering the comments received, the Agency has decided to require a visual LDW alert for the Agency's LDW/LKA tests; the LKA intervention itself will serve as a secondary haptic alert component. In addition, at the manufacturer's option, other auditory or haptic alert signals may be provided to the driver to warn of an impending lane departure. To pass the LDW

requirements for the LKA tests, no alert component may be issued before the lateral position of the vehicle, represented by a two-dimensional polygon,<sup>419</sup> is within 0.75 m (2.5 ft.) of the inboard edge of the lane line (*i.e.*, the line edge closest to the vehicle when the lane departure maneuver is initiated), and the visual LDW alert component and haptic LKA intervention must be issued before the lane departure exceeds 0.3 m (1 ft.). In addition, the visual alert must be issued prior to, or concurrent with, the start of the LKA intervention.

NHTSA generally agrees with commenters who stated visual alerts, which tend to be more inconspicuous, may best balance consumer acceptance and, thus, system effectiveness (*i.e.*, they limit driver annoyance and subsequent system deactivation) at low lateral velocities when the LKA system should be capable of providing the correcting action. In these situations, visual alerts are informational as they can convey to the driver that the LKA system is intervening. As some respondents stated, without this confirmation, the driver may not know whether the system is malfunctioning or whether some other condition, such as poor weather or road conditions, is altering the vehicle's path. This rationale serves as the basis for a visual alert component requirement. However, the Agency also agrees NHTSA should not dictate additional specifications for the required visual alert beyond the timing requirements mentioned previously. The Agency does not find it necessary to impose additional visual alert requirements, such as those relating to color, brightness, or location as requested by DRI and GM, because it does not wish to limit design flexibility. Additionally, manufacturers may choose to issue a visual alert that becomes escalatory (*e.g.*, flashing) in nature after some point, as GM suggested, but this is not required.

Additionally, NHTSA will consider the LKA intervention itself to be a haptic alert, as several commenters requested. An LKA intervention that is clearly related to the lateral control of the vehicle and is noticeable by the driver (*e.g.*, notable heading correction that prevents the vehicle from exceeding the allowable lateral deviation over the inboard edge of the lane line (*i.e.*, 0.3 m (1 ft.)), such as that ensuing from steering and/or braking, sufficiently provides feedback to a driver such that

<sup>418</sup> Commission Implementing Regulation (EU) 2021/646 of 19 April 2021 laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of motor vehicles with regard to their emergency lane-keeping systems (ELKS) [2021] OJ L133/31, § 3.5.3.1.2.

<sup>419</sup> The two-dimensional polygon is defined by the vehicle's axles in the X-direction (fore-aft), the outer edge of the vehicle's tire in the Y-direction (lateral), and the ground in the Z-direction (vertical).

<sup>417</sup> IDIADA defined "safety critical scenarios" as lane departure scenarios with a risk of road departure or a collision with other vehicles.



it meets the requirements for a haptic LDW alert. The decision to consider an LKA steering intervention to satisfy the requirements for an LDW haptic alert aligns with the LDW alert requirements outlined in Euro NCAP's LSS test protocol for its LDW tests. This decision also reflects the Agency's agreement with respondents who expressed that visual LDW alerts are not effective at eliciting a timely response from an inattentive driver, when necessary, unless they are combined with an auditory or haptic alert. The Agency maintains this position regardless of whether a visual alert is positioned in such a way that it is directly in the driver's [typical] line of sight.

While the Agency has prescribed a visual alert component to provide information to the driver and a haptic alert component in the form of a notable heading correction, it will not stipulate the modality (*i.e.*, auditory versus haptic) for any additional LDW alert components the manufacturer may wish to include. A separate haptic or auditory LDW alert can serve to re-engage the driver in situations where either (1) the LKA system has failed to respond or (2) the system may be responding, but the intervention that is necessary may exceed the LKA system's capabilities such that the driver's response may also be required. Toyota's research showed that both warning types elicit essentially equivalent response times from drivers, suggesting it is not necessary for NHTSA to be overly prescriptive at this time. NHTSA also agrees with Honda's assertion that differences in effectiveness and consumer acceptance stemming from the use of various alert approaches cannot be captured solely based on alert modality and therefore restricting acceptable alert types would not be justifiable. The Agency also reasons there is merit to Bosch's comment that system reliability also factors into consumer acceptance of LDW systems, not just warning type, and agrees with Toyota, Tesla, and Auto Innovators that it is necessary to find the right balance between LDW alerts and LKA interventions to realize the highest safety benefits. Thus, based on the lack of consensus on best practices that optimize consumer acceptance and system effectiveness, it is the Agency's belief that vehicle manufacturers are best suited to optimize LDW alerts for this purpose. By allowing manufacturers to choose whether to issue a separate auditory or haptic LDW alert during an LKA intervention (instead of simply relying on the LKA intervention itself), it will help to abate current consumer acceptance issues for LDW and LKA

systems, a concern cited by many commenters.

NHTSA will also refrain from prescribing specifications (*e.g.*, type, location, decibel level, etc.) for any additional LDW alert components at this time, as GM requested. Additional research is needed to gauge how certain haptic alert types/locations (*e.g.*, seat belt tug, seat/steering wheel vibration) and auditory alert specifications (*e.g.*, decibel level) alter system effectiveness before requiring further standardization. Should research data become available that better describes desirable (or, alternatively, undesirable) characteristics of auditory or haptic alert components, the Agency will consider adopting specifications for these additional modalities. Similar considerations will be made for the required visual alerts. NHTSA will consider being more prescriptive for visual alerts if new data suggests there is a safety need.

For haptic alerts specifically (including the LKA intervention and any additional haptic alerts), NHTSA will require that manufacturers provide additional information to NCAP's test laboratories to detail how to accurately record haptic signals without incurring damage to the test vehicle. Manufacturers who choose not to provide laboratories with such information or opt to provide information that is deemed insufficient for data collection, may risk not passing the LKA tests if the laboratories are unable to capture the alert flag for a haptic signal to ensure it meets the lane line requirements. This additional requirement is necessary because alert flags for haptic alerts may be difficult to collect due to sensor noise, particularly for alerts issued from the vehicle seat or steering wheel. Additionally, this additional requirement will not hinder a vehicle manufacturer's ability to continue to optimize alerts for current and future technologies as they see fit.

Finally, the Agency is concerned about the limited effectiveness and low consumer acceptance of LDW and its potential impact on the acceptance of LKA, which has demonstrated higher system effectiveness. However, LDW has merit and the updates the Agency is making for its lane keeping tests will provide sufficient restrictions to ensure nuisance LDW alerts are reduced during real-world driving. NHTSA's strategy will ensure higher real-world benefits for lane keeping systems overall while also providing manufacturers with the flexibility to optimize alerts for consumer preferences and future alert strategies for new ADAS technologies, which many commenters requested.

## 9. User-Configurable Settings for LDW and LKA Tests

Currently, the Agency requires at least one warning time setting to meet the test procedure criteria for LDW testing. NHTSA did not specifically request comment on the appropriate settings to use for LDW and/or LKA during its NCAP testing, but the Agency received several comments on this topic.

### Summary of Comments

For LKA systems with adjustable settings, Honda recommended that the Agency evaluate LKA using the middle setting, as it is "the best compromise" to properly assessing system capabilities. HATCI proposed that NHTSA utilize the default system settings during testing. The commenter explained that their research has shown that most Hyundai and Kia customers do not change ADAS settings after purchasing a new vehicle and that changing the settings for testing purposes would likely not be most representative of most real-world driving situations. The automaker recommended that the Agency conduct a similar, fleet-wide study, and use those findings for system settings to guide future test procedural changes.

One public commenter suggested that LDW and LKA systems should be required to be default 'ON' at the start of every trip. However, Auto Innovators suggested that the 'Default ON' requirement should be changed to 'Last saved setting' because 'Default ON' has low customer acceptance in Europe.

### Response to Comments and Agency Decisions

Aligning with its decisions for FCW and BSW, the Agency has decided to set the timing for the LDW alert and LKA intervention to the middle (or next latest) setting (if adjustable) during its LDW/LKA evaluations, as previously shown in Figure 2. The Agency will not adopt the default setting for the LDW alert or LKA intervention, as HATCI requested. NHTSA concludes, similar to its earlier decision for FCW, that it is reasonable to expect that the setting most preferred by drivers would (or rather, should) be the default setting, and this setting should generally fall in the middle of the range of driver setting preferences that span either earlier or later alert settings. Further, NHTSA notes that these system setting configurations align with Euro NCAP's LSS test protocol. For LDW and LKA systems having only two settings, the Agency will select the later of the two settings to align with Euro NCAP's requirements. This test setting will meet

NHTSA's middle (or next latest) LDW/LKA setting requirement. Lane centering functions will also be set to 'Off' for all LDW and LKA tests in alignment with Euro NCAP's LSS test protocol.

Tests will also be conducted without cruise control (*i.e.*, conventional or adaptive cruise control) engaged. The longitudinal speed of the SV will be maintained through manual or robotic control. Since cruise control is designed to regulate a vehicle's longitudinal movement and there is no vehicle present in the forward path of the SV during NCAP's LDW/LKA tests, NHTSA does not expect the use of manual/robotic control or cruise control to affect how the SV's speed is maintained during a test trial. The Agency also does not expect that cruise control should impact the SV's lateral movement. That being said, NHTSA will conduct testing utilizing only one method of speed control to ensure that the performance of one vehicle system (LKA) is not affected in any way by the performance of another system (cruise control). As mentioned in the BSI discussion, testing with manual or robotic control in lieu of cruise control is appropriate since consumers may sometimes opt not to use a cruise control feature, particularly on non-highway roads.

Regarding the system settings upon "key on," NHTSA will require that the lane keeping technologies (*i.e.*, LDW and LKA systems) appear 'Default ON' during each ignition/key cycle. While the Agency is not prohibiting a disabling function for lane keeping technologies in its NCAP evaluation, it is taking steps to reduce the false positive alerts and activations that prompt a driver to turn off the systems in the first place. Drivers should be able to adjust their system's settings to meet their personal preference instead of needing to disengage the system altogether.

#### 10. Radius of Curvature

In its LSS Protocol, Euro NCAP specifies use of a 1,200 m (3,937.0 ft.) curve and a series of increasing lateral offsets to establish the desired lateral velocity of the SV towards the lane line it must respond to. In the proposed LKA tests in the March 2022 RFC notice, the SV, laterally offset from the center of its travel lane,<sup>420</sup> is driven at a steady velocity of 72 kph (44.7 mph). After a short period of steady-state driving, the SV driver (*e.g.*, robot or human input) initiates steering to follow a 1,200 m

(3,937 ft.) radius curved path until the desired lateral velocity towards the lane line is achieved. The SV driver then releases the steering wheel. Preliminary NHTSA tests have indicated that use of a 200 m (656.2 ft.) curve radius provides a clearer indication of when an LKA intervention occurs when compared to the baseline tests performed without LKA, a process specified by the Euro NCAP LSS protocol. This is because the small curve radius allows the SV to establish the desired lateral velocity more quickly, requires less initial lateral offset within the travel lane, and allows for a longer period of steady state lateral velocity to be realized before an LKA intervention occurs. Given the findings from the Agency's testing, it sought comment on whether a 200 m (656.2 ft.) curve radius was more appropriate for inclusion in NHTSA's LKA test procedure than the 1,200 m (3,937.0 ft.) radius currently specified in Euro NCAP's protocol.

#### Summary of Comments

##### Agree With Adopting a 1,200 m (3,937.0 ft.) Radius of Curvature

Many commenters did not support a reduction in curve radius to 200 m (656.2 ft.) and preferred that the Agency adopt the 1,200 m (3,937.0 ft.) radius specified by Euro NCAP instead. Commenters voiced concerns over potential lack of system intervention, unwanted consequences (including a reduction in customer satisfaction and system acceptance), and real-world relevance.

Several commenters, including GM, Toyota, Honda, and Auto Innovators, stated that the steering input (*e.g.*, constant larger steering angle/torque, higher steering velocities/speeds) and lack of steady state lateral velocity (Auto Innovators) required to navigate a tight, 200 m (656.2 ft.) curve would appear as an intentional steering input, akin to a deliberate lane change or maneuver to avoid roadway hazards, not an unintentional drift from the lane, like LKA is designed to prevent. In such instances, GM and Auto Innovators asserted that LKA systems may not intervene if a small radius of curvature is used during NCAP testing. Likewise, Rivian mentioned that although a smaller curve radius may make it easier during testing to determine when LKA activates, "a sharper attack angle" toward the lane line may override the LKA system in some vehicles such that the Agency would not observe the LKA systems' true capabilities at higher lateral velocities. Conversely, Honda stated that adopting a small curve radius for NCAP assessments may encourage

future LKA system designs to provide undesired steering intervention even in situations where drivers intentionally input higher steering velocities, such as when the driver is intentionally changing lanes without using the turn signal or during emergency avoidance maneuvers. The automaker further stated that adopting a smaller curve radius for testing purposes may have a negative effect on an LKA system's ability to perform its intended design function and on consumer acceptance, and in turn, safety benefits. Bosch and Subaru asserted that evaluating LKA operation in a smaller, 200 m (656.2 ft.) radius curve may prompt a more aggressive system intervention if the vehicle deviates from the lane than would typically be expected for normal LKA operation, resulting in reduced driver comfort, satisfaction, and overall acceptance of LKA. Further, Auto Innovators stated that a 200 m (656.2 ft.) curve radius may encourage system designs that issue an excessive number of alerts, particularly for intentional maneuvers. Auto Innovators indicated this would be in conflict with EU regulation 2021/646 on ELKS, which "includes a requirement to 'minimize warnings and interventions for driver intended maneuvers.'" <sup>421</sup>

Several commenters, including FCA, suggested that the Agency align with Euro NCAP's radius of curvature because it better represents real-world situations. Specifically, Toyota referenced AASHTO's "A Policy on Geometric Design of Highways and Streets" manual and stated that the potential test condition (*i.e.*, navigating a 200 m curve at 72 kph) is at the limit of road design and therefore not appropriate.<sup>422</sup> Toyota provided a table showing that a design speed of 70 kph (45 mph) corresponds to a minimum radius of 203 m (666.0 ft.). HATCI stated that a 200 m (656.2 ft.) radius may be "a startling input for a vehicle driving in a straight lane" and seemed unrepresentative of a real-world situation. The group further asserted, like Honda, that such a change made to improve testing may have unintended

<sup>421</sup> Commission Implementing Regulation (EU) 2021/646 of 19 April 2021 laying down rules for the application of Regulation (EU) 2019/2144 of the European Parliament and of the Council as regards uniform procedures and technical specifications for the type-approval of motor vehicles with regard to their emergency lane-keeping systems (ELKS) [2021] OJ L133/31, § 2.2.

<sup>422</sup> American Association of State Highway and Transportation Officials (AASHTO). (2018). Policy on Geometric Design of Highways and Streets (7th Edition), including 2019 Errata. American Association of State Highway and Transportation Officials (AASHTO). Table 3-7. Minimum Radius Using Limiting Values of *e* and *f*.

<sup>420</sup> The initial lateral offset (based on the vehicle width and the desired lateral velocity) of the vehicle from the centerline is to ensure the SV is being operated at the desired steady state lateral velocity before LKA and LDW operate.

consequences in how future derivations of the technology operate. Finally, GM pointed to NHTSA's proposed BSI test procedure, which uses an 800 m (2,625 ft.) curve for an intentional lane change, in support of its opinion that a 1,200 m (3,937.0 ft.) curve more accurately represents an unintentional drift out of the lane.

Several commenters remarked on a variety of other potential consequences of adopting a reduced curve radius. For example, Bosch remarked that a reduction in radius to 200 m (656.2 ft.) could create challenges for test execution. ZF Group cautioned that NHTSA should not change the curve radius too drastically, especially without further research and consideration for the consequences of doing so, since Euro NCAP's LSS protocol resulted from coordinated efforts of both vehicle manufacturers and suppliers.

Agree to a Radius of Curvature Between 200 m and 1,200 m (656.2 ft. and 3,937.0 ft.)

If a smaller curve radius is preferred, Subaru suggested that the Agency adopt an 800 m (2,624.7 ft.) curve radius. Intel commented that it would support a reduced curve radius up to 700 m (2,296.6 ft.). However, the company cautioned that even this radius may be unacceptable since drivers tend to cross lane markings while in a turn, which may elicit false positive warnings.

IDIADA recommended that the Agency use variable radii (between 200 m and 1,200 m, or 656.2 ft. and 3,937.0 ft.) and the same arc length to generate multiple lateral speeds towards the lane line instead of one fixed radius and variable arc lengths to generate the lateral speeds, as used by Euro NCAP. The laboratory stated that the appropriate lateral speed range of 0.1 m/s to 0.6 m/s could likely be generated within radii ranging between 200 m (656.2 ft.) and 1,200 m (3,937.0 ft.).

Agree With Adopting a 200 m (656.2 ft.) Radius of Curvature

Other commenters, like the ASC, BMW, and CAS, remarked that they would support reducing the curve radius to 200 m (656.2 ft.). However, BMW stated that the company's support was contingent on there being a long period of steady state lateral velocity (also referenced by Auto Innovators) to be classified as an unintended lane departure. CAS commented that it was "essential" to add both curve radii to the LKA test procedure to ensure that LKA systems are not designed to a test, but instead designed to perform well in multiple real-world conditions,

especially since such additions would "impose no additional cost on manufacturers."

#### General Comments

Advocates recommended that NHTSA provide comparative performance data to show there are benefits of adopting a smaller curve radius rather than a 1,200 m (3,937.0 ft.) curve. Advocates also stated that "convenience or expediency in testing should not be a substitute for robust and accurate protocols."

#### Response to Comments and Agency Decisions

NHTSA is adopting a 1,200 m (3,937.0 ft.) curve radius for SV travel paths in its LKA test procedure.

Based on the comments received, NHTSA concludes a larger (*i.e.*, 1,200 m (3,937.0 ft.)) curve radius rather than a smaller (*i.e.*, 200 m (656.2 ft.)) radius is most appropriate for its LKA testing. In an unintentional lane departure, the vehicle would be expected to drift out of its lane rather than abruptly turn, as some commenters noted. As such, curve radii for unintentional lane departures would be expected to be larger than those of intentional lane changes. Along these lines, NHTSA finds merit in GM's comment noting the Agency's BSI test procedure for assessing intentional lane changes includes a (now-adopted) curve radius of 800 m (2,625 ft.), a radius significantly larger than the 200 m (656.2 ft.) curve radius considered for NHTSA's LKA testing, which simulates unintentional lane departures. The Agency also sees validity in comments that a smaller curve radius may signal an intentional departure due to the necessary steering input, such that LKA system designs which take driver intent into account may not engage the LKA system as expected. NHTSA also acknowledges the opinion that evaluation of LKA capabilities at small curve radii may encourage intervention in cases where it is not desired. Besides being potentially hazardous, excessive warnings and false activations, in addition to aggressive interventions, may deter consumers from enabling lane keeping technologies, thus reducing potential benefits, as several respondents suggested.

The Agency will not proceed as IDIADA requested and adopt variable (smaller) radii for LKA testing for this upgrade. Although the Agency recognizes CAS's concern regarding the use of a single curve radius to evaluate LKA system performance, NHTSA also agrees with FCA, Toyota, and HATCI that the use of a curve radius of 200 m (656.2 ft.) would be aggressive and not necessarily representative when

considering real-world events involving straight roads, even if considering intentional lane departures. Adopting smaller curve radii would also deviate from Euro NCAP's LSS test protocol for the test conditions adopted by NHTSA. As NHTSA aims to harmonize its NCAP with other testing programs globally unless there are compelling reasons to do otherwise, it is best to mirror Euro NCAP and adopt a 1,200 m (3,937.0 ft.) curve radius for SV travel paths in its LKA test procedure at this time.

Although NHTSA acknowledges the use of a smaller curve radius could produce a positive effect on test conduct, NHTSA agrees with Advocates' comment that the Agency should first quantify any benefits of adopting any curve radius smaller than 1,200 m (3,937.0 ft.). While the Agency does not currently have plans to conduct research to compare track tests of LDW and LKA to real-world data for different combinations of curve radius, vehicle speed, and departure timing, should it choose to pursue such testing in the future, NHTSA would consider the need to amend the prescribed curve radius or to add additional assessments at that time based on the data.

#### 11. Adding a Road Edge Detection Test

In its March 2022 RFC notice, NHTSA recognized that Euro NCAP has adopted a road edge detection test that is conducted similarly to the group's LKA tests, but which does not require the use of lane markings. The Agency also acknowledged that, while the number of vehicles equipped with an ability to recognize and respond to road edges not defined with a lane line may presently be low, there are U.S. roadways on which this capability could prevent crashes. In a study of fatal crashes using 2005 to 2007 National Motor Vehicle Crash Causation Survey (NMVCCS) and 2017 Crash Investigation Sampling System (CISS) lane/roadway departure cases that was undertaken (1) to classify the shoulder type present on the side of the roadway when a vehicle first departed its travel lane and (2) to estimate the shoulder width just after departure, NHTSA identified fatal crashes where lane markers were not present on the side of the roadway where a departure occurred.<sup>423</sup> In these cases, LKA would not provide any benefit unless it had the capability to identify the edge of the roadway.

<sup>423</sup> Wiacek, C., Forkenbrock, G., Mynatt, M., & Shain, K. (2019). Applying lane keeping support test track performance to real-world crash data. *26th International Technical Conference for the Enhanced Safety of Vehicles*, Eindhoven, Netherlands. Paper Number 19-0208.

In its March 2022 RFC notice, the Agency also recognized that it had received public comments pertaining to the addition of a road edge detection test in response to its 2015 RFC notice. Specifically, Mobileye recommended that the Agency add not only road edge detection scenarios but also scenarios that include curbs and non-structural delimiters such as gravel or dirt to reflect real-world conditions and crash scenarios more accurately. Similarly, Bosch suggested that NHTSA consider introducing road edge detection requirements in addition to lane markings since not all roads have lane markings.

Given the safety need and commenter suggestions, NHTSA sought comment in its March 2022 RFC notice on whether it should add Euro NCAP's road edge detection test to NCAP for either its LDW and/or LKA assessments to address crashes that occur where lane markings may not be present.

#### Summary of Comments

##### In Favor of Adding a Road Edge Detection Test

AASHTO, Aptiv, ASC, CAS, GM, Intel, Rivian, Bosch, ZF Group, and a public commenter recommended that a road edge detection test be added to address roads where lane markings are not present, or the markings have faded or are worn. AAA, Advocates, IDIADA, CAS, IIHS, and Toyota were also in favor, citing crash frequency and/or severity as a reason for inclusion. Advocates expressed support for the test scenario's inclusion because the Agency identified road edge departures as the third most common lane keeping scenario. Likewise, Toyota pointed to NHTSA's 2018 to 2019 CISS data which showed that there were no lane markings on the side of departure in approximately 30 percent of road departure cases. AAA commented that the possibility of injury and/or death increases for roadway departures. IDIADA similarly commented that rollovers may stem from roadway departures, therefore making road edge detection an important technology, and IIHS remarked that crashes with fixed objects are a common occurrence when vehicles leave the road, accounting for 32 percent of passenger vehicle occupant fatalities (7,253 people) in 2019. IIHS further asserted that "44 percent of these deaths occurred on minor roads, which are more likely than other road types to have unmarked road edges." The group also stated that systems capable of detecting unmarked road edges should also be better able to detect obstructed or worn lane lines.

GM stated that it supported a road centerline plus road edge configuration if NHTSA elected to add a road edge detection test to its LKA protocol, since such an arrangement would accurately represent a common U.S. roadway condition.

Vayyar did not comment specifically on including a road edge detection scenario in NCAP but did state that it is "highly advisable to monitor unmarked road edges" and noted that this can often be achieved using radar.

##### A Road Edge Detection Test Is Unnecessary

Two commenters, FCA and Subaru, were not in favor of adding a road edge detection test to NCAP's LDW and/or LKA test procedures. FCA cited low frequency of single lane lines<sup>424</sup> in the U.S. relative to other countries as a reason not to add a road edge detection scenario. Subaru opined that adding a road edge detection test to U.S. NCAP is unnecessary, but also stated that NHTSA should conduct further analysis of crash data to ascertain the relative frequency of road departures on roads with unmarked edges to better gauge representative conditions for road edge testing in the U.S.

##### Include for LDW, LKA, or both systems?

AAA, TRC, CAS, Rivian, and ZF Group suggested adding a road edge detection test to assess both LDW and LKA systems. Honda expressed support for adding a road edge detection test for both LDW and LKA if real-world data supports its inclusion, and Advocates indicated support for adding the assessment for both technologies if any LKA system capable of identifying a road edge also issues an LDW alert prior to automatic intervention. ASC suggested that adding a road edge detection test for both LDW and LKA would be appropriate, stating that inclusion of this test scenario would improve the safety benefits for both systems. GM additionally voiced support for adding the test scenario assessment for both systems, though they referenced only improved safety benefits for LKA. Both Intel and IIHS suggested that it would be reasonable to adopt the test for LDW, but stated priority should be given to LKA, with IIHS adding that their research has shown that drivers are more likely to use LKA compared to LDW,<sup>425</sup> and LKA

systems that provide earlier and more frequent steering input to avoid lane departures were used more by drivers than LKA systems with later and less frequent interventions.<sup>426</sup> IDIADA stated that since a road edge detection test represented a "safety critical scenario," it was most relevant for the active technology, LKA.

##### Adopt Euro NCAP's Test

AAA, ASC, CAS, GM, HATCI, IIHS, MEMA, Bosch, and Tesla specifically mentioned adding Euro NCAP's road edge detection test to the U.S. test protocol. IIHS stated that since this test has been part of Euro NCAP's protocol since 2018, vehicle manufacturers should be "reasonably familiar" with it and should already be developing or even implementing systems having road edge detection capability. For those vehicles lacking this capability, however, Bosch asserted that adding this test would drive the availability of these more robust LKA systems through the fleet. GM and MEMA stated that road edge excursion limits for LDW and LKA should be aligned and standardized with Euro NCAP protocols, with GM adding that more stringent limits, adopted by other regions, have spurred customer complaints and system disablement due to the need for more aggressive systems. However, GM did not support all aspects of the Euro NCAP protocol. Specifically, the manufacturer, along with Auto Innovators, stated they do not support "the Euro NCAP double road edge lane detection" because it can cause activation on gravel roads, which are common in rural areas in the U.S. Auto Innovators also noted that dashed road edges are not common in the U.S.

##### Additional Specifications Are Necessary

To improve test-to-test and lab-to-lab repeatability/reproducibility, Tesla recommended that NHTSA define what constitutes a "road edge condition" and specify how to detect it to minimize varying interpretations. Auto Innovators and Toyota also sought clarification regarding the road edge test conditions, further stating that selection of a road edge should be supported by validation testing using vehicles that are already equipped with LDW/LKA technology that permits road edge detection. The commenters asserted that, unlike lane

and Behaviour, 52, 176–190. <https://doi.org/10.1016/j.trf.2017.11.015>.

<sup>426</sup> Reagan, I.J., Cicchino, J.B., & Montalbano, C.J. (2019). Exploring relationships between observed activation rates and functional attributes of lane departure prevention. *Traffic Injury Prevention, 20(4)*, 424–430. <https://doi.org/10.1080/15389588.2019.1569759>.

<sup>424</sup> The Agency believes FCA's comment was referring to two-lane, two-direction roadways having only a centerline.

<sup>425</sup> Reagan, I.J., Cicchino, J.B., Kerfoot, L.B., & Weast, R.A. (2018). Crash avoidance and driver assistance technologies—Are they used? *Transportation Research Part F: Traffic Psychology*

markings, which can be clearly defined (e.g., length, width, color, etc.), road edges have no quantitative definition. Auto Innovators added that systems must therefore use artificial intelligence to compare and classify how similar a captured camera image is to “pre-learned” road edges. Like Tesla, Auto Innovators expressed concern regarding repeatability and reproducibility issues during testing if the road edge is not clearly defined.

Toyota requested that NHTSA base selected road edge test conditions on real-world U.S. roadways, which through a review of 2009 NASS-CDS cases, showed brush, curbs, and dirt as the three primary surfaces involved in road departure crashes.<sup>427</sup> HATCI also stated that NHTSA should select a “field-representative” road edge that shows the highest safety need and suggested that road owners and vehicle manufacturers could work together to develop road edge specifications (e.g., materials, shoulders, straightness, etc.) so that vehicles may more easily identify them. TRC also stressed the importance of specifying the material for the road edge (e.g., gravel, dirt, etc.) and recommended a gravel road edge for safe test conduct, especially when a steering robot is used during LKA tests and for departures exceeding one foot over the road edge. Both BMW and Auto Innovators specifically mentioned that they would not approve of scenarios that use artificial turf to denote the road edge, with BMW adding that the test conditions should closely mirror real-world conditions. Finally, Auto Innovators and HATCI requested that NHTSA submit for public review and comment road edge specifications prior to inclusion in the applicable test procedure(s).

#### Response to Comments and Agency Decisions

Road edge departure crashes are common and may result in rollovers or collisions with fixed objects, both of which may have critical consequences. However, despite the noted frequency and severity of road departures on roads with faded or absent lane markings at the road’s edge, at this time, NHTSA will not include a road edge detection test in its NCAP LDW/LKA test procedure.

NHTSA recognizes that Euro NCAP currently assesses a vehicle’s ability to detect a passenger-side road’s edge when no lane marking is present. This test is performed both with and without a driver-side lane marking. However,

the test procedure’s road edge specifications are not well-defined; the road edge may consist of grass and/or gravel, or any other approved surrogate. As noted in Annex A of the Euro NCAP LSS procedure, there is no artificial road edge with consensus at this time. Thus, a variety of real road edges are used, each of which is different.

It is the Agency’s belief that every NCAP vehicle should be assessed using the same test conditions to promote fairness and maintain the program’s credibility. To do so, NHTSA would have to select a road edge type and more clearly define specifications. However, it is currently unclear which single road edge type would be most appropriate. As noted by Toyota, a variety of real-world road edge types that drivers regularly encounter exist (gravel, curbs, brush, dirt, etc.). While the selection of a gravel road edge may be most desirable for safe test conduct, as TRC suggested, there is not currently data to suggest that this road edge type is the most representative.

While the Agency is not adopting a road edge detection test for this NCAP update, given the safety need identified previously to address road departure crashes in which a line at the road’s edge may not be visible or present, as outlined in the NCAP roadmap long-term plans, NHTSA will consider enhanced evaluations of LKA systems in NCAP, including a road edge detection test at a future time. Prior to inclusion of a road edge detection test scenario, NHTSA must determine which road edge test condition(s) best represents road edges that drivers may encounter in real-world driving conditions, or alternatively, that which represents the largest number of crashes and thus may offer the largest safety benefit. NHTSA agrees with Bosch’s comment that adding a road edge detection test would encourage the availability of more robust LKA systems throughout the fleet, but the Agency does not want to cause unintended consequences by doing so before adequate test specifications can be developed, reviewed, and adopted. Prior to implementing any future road edge detection assessments, NHTSA would consider reducing excusing limits, as mentioned in an earlier section, or aligning excursion limits with those included in Euro NCAP’s test protocol, as GM and MEMA requested. It would also conduct testing with then-current vehicle models to validate any new test procedure, as Toyota and Auto Innovators suggested.

#### 12. Correlating Straight and Curved Road Performance

NHTSA has only performed test track LKA evaluations using the straight road test configuration specified in Euro NCAP’s LSS test protocol. However, the Agency recognized in its March 2022 RFC notice that a significant portion of road departure and opposite direction crashes resulting in fatalities and injuries occur on curved roads. A review of Volpe’s 2011 to 2015 data set showed that for road departure crashes where roadway alignment was known, 37 percent of fatalities and 21 percent of injuries occurred on curved roads.<sup>428</sup> For opposite direction crashes where roadway alignment was known, 30 percent of fatalities and 32 percent of injuries occurred on curved roads.<sup>429</sup>

In NHTSA’s study of the 2005 through 2007 fatal crashes from NMVCCS,<sup>430</sup> an analysis of lane departure crashes occurring on curved roads<sup>431</sup> showed that LKA systems would have to provide sustained lateral correction (*i.e.*, corrective steering) to prevent the vehicle from departing the travel lane. This differs from the smaller corrective steering inputs required of LKA systems to prevent lane departures on straight roads.

In its 2022 notice, NHTSA stated that it is unsure how LKA performance observed during straight road trials performed on a test track would correlate to real-world system performance on curved roads. However, the Agency hypothesized, based on on-road performance testing experience of newer model year vehicles, that some current LKA system designs include provisions to address lane departures on curved roads. The Agency found that some LKA systems engage by providing limited operation throughout a curve and thus provide little (if any) safety benefit. Conversely, more sophisticated LKA systems maintain engagement longer and offer added directional authority throughout a curve. These latter systems may provide additional

<sup>428</sup> Roadway alignment was unknown or not reported for 1 percent of fatal roadway departure crashes and 4 percent of roadway crashes where police-reported injuries occurred.

<sup>429</sup> Roadway alignment was unknown or not reported for 1 percent of fatal opposite direction crashes and 2 percent of roadway crashes where police-reported injuries occurred.

<sup>430</sup> Wiacek, C., Fikenscher, J., Forkenbrock, G., Mynatt, M., & Smith, P. (2017). Real-world analysis of fatal run-out-of-lane crashes using the National Motor Vehicle Crash Causation Survey to assess lane keeping technologies, *25th International Technical Conference on the Enhanced Safety of Vehicles*, Detroit, Michigan. June 2017, Paper Number 17-0220.

<sup>431</sup> It should be noted that the paper identified crashes where lane markings were not present on the side of the departure.

<sup>427</sup> <https://www.regulations.gov/comment/NHTSA-2021-0002-3898>. See submitted graphics.

safety gains because the driver has more time to re-engage (*i.e.*, restore effective manual control of the vehicle).

Given the real-world need to address lane departure crashes occurring on curved roads and the Agency's observations of vehicle system performance during on-road driving, NHTSA expressed a desire to correlate LKA performance on straight roads to that on curved roads, if possible. Specifically, NHTSA sought comment on whether it could correlate better LKA system performance at higher lateral velocities on straight roads with better curved road performance. The Agency also solicited comment on whether it could assume that a vehicle that does not exceed the maximum excursion limits at higher lateral velocities on straight roads will have superior curved road performance compared to a vehicle that only meets the excursion limits at lower lateral velocities on straight roads. Finally, the Agency asked whether it could assume that the steering intervention while the vehicle is negotiating a curve is sustained long enough for a driver to re-engage.

#### Summary of Comments

##### Straight and Curved Road Correlation

There were many commenters who suggested that the Agency could correlate better performance on straight roads at higher lateral velocities to that on curved roads. Tesla, for one, stated that vehicles that afford better straight road performance are often better at lane line detection, which typically translates to better lateral control in a curve and maintaining tighter and steadier control over the vehicle's position within the lane. Another commenter, Rivian, suggested that lane line detection, not the ability to handle high lateral velocities, was often a problem for LKA systems that offer poor performance on curved roads. The commenter recommended that assessment of LKA performance should be based on relative lateral velocity to the lane line, not absolute lateral velocity. Toyota and Auto Innovators opined that there is a correlation, and as such, there would be no need to adopt a separate curved road test, but since the entities did not have data to support their opinion, they recommended, like others below, that the Agency should conduct additional research to definitively conclude that a correlation exists. Toyota further requested that, if NHTSA was to perform such research, it should "clarify whether the target (for LKS performance) is on a constant curve, during curve entry, or both."

There were also several commenters that agreed the performance may be able to be correlated across the two roadway configurations; however, a few of these respondents suggested that the Agency conduct additional research to confirm the strength of the correlation. Aptiv and CAS mentioned that banking and sight line restrictions due to changing elevations may affect LKA performance on curved roads, but only research to provide comparative test results would indicate how much influence these variables have. Bosch stated that an LKA system that supports high lateral velocities on straight roads could also afford better performance on curved roads because the system should likely react faster and earlier, but like Aptiv and CAS, they suggested NHTSA conduct additional research to be sure. Although BMW didn't suggest additional research, the automaker, like Aptiv and CAS, referenced additional factors affecting curved road intervention (*i.e.*, accurate detection of road curvature and orientation angle toward the lane marking) that could lead to performance variations compared to straight roads, thus making a relative comparison difficult. ZF Group additionally cited lane detection capability, steering controller and torque overlay limits, and vehicle weight as other variables that would influence results.

GM commented that a correlation may be possible under limited conditions, such as at certain lateral velocities, but generally, curved road performance is influenced by factors like banking (*i.e.*, superelevation) (as also mentioned by Aptiv and CAS) and surface crowning which can't easily be simulated in a test environment and will vary based on design speed, curve radius, etc.

There were also commenters, including Intel and FCA, who stated that a straight road/curved road correlation was not possible. FCA, like others, voiced that many factors, including speed, lateral position in the lane, and road curvature, affect LKA system performance on curved roads, and there is currently no reliable or repeatable test method to capture these characteristics.

##### Equating Excursion at Higher Lateral Velocities on Straight Roads to Superior Performance on Curved Roads

With respect to whether the Agency could assume that those vehicles that don't exceed maximum excursion limits at higher lateral velocities on straight roads would have superior performance on curved roads compared to a vehicle that only meets the excursion limits at lower lateral velocities on straight roads,

CAS reasoned that was not a valid assumption. The group cited influencing factors like sight line restrictions, road construction differences (*e.g.*, elevation changes), and "underlying additive lateral acceleration" that may affect relative performance. Bosch agreed that superior performance cannot be assumed because reaction time is often different in a curve (*i.e.*, often later) and therefore system behavior may vary compared to that observed on a straight road.

##### Driver Re-Engagement

A few commenters opined on whether NHTSA could assume that LKA-induced steering intervention while a vehicle is negotiating a curve is sustained long enough for the driver to re-engage. Almost all respondents said no, that is not a safe assumption. CAS expressed that there are too many variables to be considered (*i.e.*, speed, curve geometry, the ADAS warnings provided, and the driver response) for such an assumption to be made. Intel remarked that the steering intervention doesn't end until the vehicle is parallel to the road lane marking (with sufficient margin) for a few seconds. However, in sharp curves, the commenter noted that the system torque is "limited and [it] will not be comfortable for the driver to re-engage."

Unlike the other commenters, BMW stated that the driver would have enough time to re-engage, stating that the system intervention will last for several seconds as the system attempts to align with the lane marking. Likewise, ZF Group stated that corrective steering is provided when the system detects it is entering the 'intervention zone,' and it should be maintained throughout the curve (if the vehicle remains in the 'intervention zone') until it disengages once the vehicle is brought back into the appropriate position. Rivian stated LKA intervention *should be* sustained in a curve until a driver re-engages because the consequence of system deactivation in the middle of the curve (before driver re-engagement) could be dangerous. The commenter further stated that vehicles that disengage prior to reengagement by the driver should receive lower scores.

Unlike the other respondents who said re-engagement either was or wasn't possible, Bosch remarked that it is dependent on the system design, with some systems providing only a slight correction to the heading angle, whereas others guide the vehicle back to the center of the lane.

### Adoption of a Separate Curved Road Test

BMW asserted it was more appropriate to incorporate a curved road test than to assess systems at high lateral velocities on straight roads since some systems may interpret a fast approach towards the lane marking to be an intentional lane change (without use of the turn signal) and would suppress an intervention accordingly. Auto Innovators also shared BMW's concern (though they did not favor adopting a separate curved road assessment) and added that a fast or strong system intervention in such instances may affect customer satisfaction, which must also be considered in system design. ASC agreed with BMW that NHTSA should develop a curved road test rather than attempt to correlate performance. Advocates supported incorporation of a curved road test in general, since a large proportion of crashes, especially road edge departure crashes, occur on curved roads.

Unlike Advocates, Rivian suggested that NHTSA should not adopt a curved road test because most lane departure crashes occur on straight roads<sup>432</sup> and therefore the safety need is not as great for curved roads. The manufacturer further asserted, along with IDIADA, that drivers tend to be more attentive on curved roads since they know they are required to steer. Because of the influential testing variables mentioned previously, GM was also not supportive of adopting a curved road test, relaying that adding test scenarios that do not accurately depict real-world driving conditions may drive LKA system changes to meet test requirements that degrade performance for real-world drivers, thus compelling drivers to turn systems off. GM further stated that Korean NCAP performs a curved road test and there is high variability in test results.

Toyota and Auto Innovators also recommended adopting only a straight road test condition at this time. The commenters expressed concerns related to repeatability and reproducibility for curved road testing, stating that (1) lane departure speed, which is the key input to initiate and evaluate LKA system performance, is strongly affected by initial lateral offset and yaw angle, and (2) it would be difficult to configure the exact same curved lane (*i.e.*, same curve radius, clothoid length, banking angle, lane width, etc.) at all testing locations, including those used by vehicle manufacturers for NCAP performance verification assessments. Similar to

GM's assertion regarding Korean NCAP, the groups also relayed that Euro NCAP has not adopted a curved road assessment because of repeatability concerns.

Test labs also expressed concerns regarding the feasibility of curved road testing, with TRC cautioning that curved road testing requires much more space than straight road testing, and as such, testing locations are limited. Further, IDIADA stated that curved road scenarios are "extremely difficult to implement."

### Response to Comments and Agency Decisions

At this time, NHTSA cannot assume that LKA performance on straight roads correlates with that expected for curved roads.

Commenters unanimously agreed that superior performance on curved roads could not be assumed for those vehicles that do not exceed maximum excursion limits at higher lateral velocities on straight roads. NHTSA acknowledges, as several commenters stated, that there are vehicle-specific factors like vehicle weight and speed, in addition to the vehicle's capability for lane line detection, which may affect LKA system performance on curved roads more so than on straight roads. The Agency also recognizes commenter concerns surrounding system suppression and unintended consequences of abrupt or strong system interventions stemming from the high lateral velocities needed to simulate curved road conditions on straight roads, both of which suggest a correlation is impracticable. Further, the Agency acknowledges that most commenters expressed that it is unreasonable to assume that an LKA steering intervention is sustained long enough in a curve for a driver to re-engage in the driving task. While Rivian acknowledged that LKA intervention *should* be sustained in a curve until a driver re-engages because of the consequences inherent to system deactivation in the middle of the curve (before driver re-engagement), most commenters contended that there are too many variables at play to have such assurance, with Bosch stating that it depends on the system design, as some systems may only offer a slight heading correction whereas others direct the vehicle back into the center of the lane. Without such assurance, it would be misguided for the Agency to consider a correlation to be a sufficient surrogate for an actual curved road assessment.

Further, commenters provided mixed support for adopting a designated curved road test in NCAP. Commenters expressing support noted that such a

test would be more appropriate to reflect true system performance. Those opposed cited testing feasibility concerns, specifically limitations posed by space constraints and repeatability and reproducibility concerns arising from the need to replicate the exact test conditions/curved lane configuration across all testing locations. NHTSA acknowledges, as many commenters stated, that there are numerous roadway characteristics that can affect curved road intervention, including curve radius, elevation changes (*i.e.*, superelevation), and sight line restrictions, which are difficult to simulate in a test environment, especially in a reliable and repeatable manner. It further acknowledges GM's concern that test scenarios that don't accurately reflect real-world driving conditions may spur degradation in real-world LKA performance, leading to system deactivation and a loss of safety benefits.

In consideration of commenter concerns, the Agency plans to initiate a multifaceted curved road research effort. As part of this research, NHTSA intends to: (1) review lane and road departure crash data to identify curve radii and other roadway variables (*e.g.*, superelevation, lane width, etc.), vehicle speed, and departure timing (*e.g.*, at curve entry, mid curve, or near curve exit); (2) identify other lane departure protocols, or parts of protocols, that may be most relevant to real-world road departures, particularly those related to curved lanes; (3) identify vehicle models that have LKA systems that are designed to prevent lane departures on curved roads; (4) identify next generation LKA systems and document expected functionality; and (5) perform pilot testing to evaluate potentially suitable curved road test protocols. By taking these steps, NHTSA hopes that it will be able to develop a test protocol that accurately simulates real-world lane departures on curved roads to best address the safety problem. After the research is completed, NHTSA will consider these enhanced evaluations of LKA systems in NCAP, as noted in the NCAP roadmap long-term plans.

### 13. Increasing LKA Test Speed

In its recent RFC notice, NHTSA noted that a sizeable portion of fatal road departure and opposite direction crashes occur at higher posted and known travel speeds. As part of its independent analysis of the 2011 to 2015 FARS data set, Volpe found that, of those crashes where posted speed limits were known, 58 percent of fatal road departure crashes and 69 percent of fatal opposite direction crashes

<sup>432</sup> 87 FR 13452 at 13494.



occurred on roads with posted speeds exceeding 72.4 kph (45 mph).<sup>433 434</sup> Further, the study revealed that speeding was a known factor in 33 percent and 13 percent of fatal road departure and opposite direction crashes, respectively.<sup>435 436</sup> Volpe also found that when travel speed was known, 83 percent of fatal road departure crashes and 74 percent of fatal opposite direction crashes occurred at known travel speeds exceeding 72.4 kph (45 mph).

Since NHTSA did not have data to show that LKA system performance at Euro NCAP's current test speed of 72 kph (44.7 mph) would be indicative of system performance when tested at higher speeds, the Agency requested comment on whether it would be beneficial to incorporate additional, higher test speeds to assess the performance of lane keeping systems in NCAP, or whether the current test speed is sufficient to indicate performance at higher speeds, especially on straight roads. Given the findings from NHTSA's LKA testing of model year 2017 and 2019 vehicles, which showed differences in LKA performance at greater lateral velocities, the Agency also expressed concern about LKA performance at higher travel speeds when the vehicle first transitions from a straight to a curved road, since lateral velocity may be high in those situations.

#### Summary of Comments

##### Maintain Current Test Speed

Many commenters suggested the LKA test speed should remain at 72.4 kph (45 mph). ASC, BMW, and Bosch commented that the current NCAP test speed accurately evaluates LKA performance at higher speeds and that increasing the test speed was unnecessary. Auto Innovators agreed that performance at the current test speed is indicative of performance at

higher test speeds, and additionally mentioned that performance at lower speeds could also be assured. Similarly, GM stated that the proposed 72.4 kph (45 mph) test speed accurately evaluates performance at other speeds. HATCI recommended that NHTSA harmonize with Euro NCAP's test speed of 72 kph (44.7 mph), as it is representative of LKA performance at higher speeds and sufficient to address fatal road departure and opposite direction crashes.

Similarly, ZF Group agreed that the Agency should harmonize with existing protocols to the extent possible. FCA expressed that high-speed unintentional lane departures occur at lower lateral velocities, and such events would be encompassed by the 0.2 m/s lateral velocity in the current 72.4 kph (45 mph) LKA test such that no additional speed increase is necessary. On the other hand, Advocates expressed that NHTSA must have data to "indicate whether longitudinal velocity is correlated with lateral velocity and which of these or their interaction are determining factors in assessing performance of LKS systems." The organization questioned whether testing at a lower longitudinal speed and higher lateral velocity is the best way to differentiate between systems having different performance.

TRC, Auto Innovators, and GM referenced logistical concerns for higher speed test assessments. TRC stated that if speeds were increased, additional lane markings and distance would have to be maintained. Likewise, Auto Innovators and GM expressed that longer and wider test tracks having additional runoff space would be necessary for safe testing at higher speeds, and yet, such testing would yield similar results to those obtained at 72 kph (44.7 mph).

##### Consider Additional Test Speeds

A few commenters, including Intel and CAS, favored higher test speeds to assess LKA system performance. Specifically, CAS asserted that higher speed testing would be a better indicator of LKA performance. The organization suggested that test speeds should be increased until safe performance limits are established, and these speed limits should then be communicated to consumers. That said, CAS also acknowledged that "some LKS testing is better than no LKS testing." Like CAS, one public commenter recommended that the LKA test speed be increased to "ensure accuracy." The commenter mentioned that most fatal road and lane departure crashes occur at higher speeds, and at such speeds, the driver's ability to react and maintain control of

the vehicle is reduced. IDIADA stated that since LKA system activation occurs at speeds of 65 kph (40.4 mph) or greater, the current 72.4 kph (45 mph) test speed covers only the lower limit of system intervention. As such, the company suggested that the Agency could consider conducting testing at speeds up to 120 kph (74.6 mph). MEMA did not expressly recommend increasing the LKA test speeds. However, MEMA did mention that there is "no technical barrier to detecting lanes at a range that would reliably support higher LKS test speeds." Similarly, ZF Group mentioned that "there is no technology concern associated with testing at higher speeds." Finally, Rivian suggested that NHTSA evaluate LKA performance at both higher and lower speeds to better assure expected performance.

#### Response to Comments and Agency Decisions

As mentioned earlier, NHTSA is adopting a test speed of 72 kph (44.7 mph) for its LDW/LKA tests. This test speed aligns with many real-world road departure and opposite direction crashes and serves as an appropriate starting point for the Agency's newly adopted lane keeping tests. The Agency reasons this test speed is also appropriate because it further promotes harmonization. It is the same speed used in Euro NCAP's LDW, LKA, and ELK tests, which are comparable to those NHTSA is incorporating in NCAP.

Many commenters asserted that LKA performance at a test speed of 72 kph (44.7 mph) would be sufficient to assure similar LKA performance at higher (and lower) test speeds, and therefore, adding additional test speeds for NCAP's tests is unnecessary. However, the Agency hesitates to agree without additional research testing. It may be true, as Advocates suggested, that testing at a lower longitudinal speed and higher lateral velocity may not sufficiently differentiate between systems that have different performance at higher speeds. In this case, higher-speed tests would also be necessary to effectively address the safety problem. Conversely, it may be true, as FCA asserted, that a 72.4 kph (45 mph) LKA test is sufficient to address unintentional lane departure crashes occurring at high speeds because these real-world crashes occur at lower lateral velocities, such as those already included in the Agency's test matrix. Unfortunately, NHTSA does not currently have data to indicate whether longitudinal velocity is correlated with lateral velocity, as Advocates requested, nor does it know the extent to which each of these factors influence LKA

<sup>433</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745). Washington, DC: National Highway Traffic Safety Administration.

<sup>434</sup> For data where the travel speed was known, 63 and 65 percent of the data is unknown or not reported in FARS for road departure and opposite direction crashes, respectively. For road departure and opposite direction crashes, respectively, 3 and 1 percent of the posted speed data is unknown or not reported in FARS.

<sup>435</sup> Swanson, E., Foderaro, F., Yanagisawa, M., Najm, W.G., & Azeredo, P. (2019, August), *Statistics of light-vehicle pre-crash scenarios based on 2011–2015 national crash data* (Report No. DOT HS 812 745). Washington, DC: National Highway Traffic Safety Administration.

<sup>436</sup> It was unknown or not reported whether speeding was a contributing factor in 7 percent of fatal road departure crashes and 4 percent of fatal opposite direction crashes.

system performance. It also does not fully understand how driver reaction time or the driver's ability to maintain control of the vehicle as speed increases may influence overall LKA system performance or crash outcomes. As such, more research is needed before NHTSA can conclude with certainty whether the adopted LKA test conditions will be sufficient to ensure safety benefits at alternative test speeds, or whether additional test conditions are necessary. Regardless, because of the significant crash problem currently at hand, it is prudent to move forward with the adopted 72.4 kph (45 mph) SV speed at this time rather than wait for the completion of further research.

As discussed previously, the Agency plans to review real-world road departure crash data as part of a future research effort. NHTSA will document the roadway conditions associated with these crashes (*e.g.*, posted speed limits, roadway curvature, etc.) as well as other influencing factors, such as vehicle speed and lateral velocity. The Agency will consider higher speeds in future evaluations as well as other logistical concerns posed by commenters (*e.g.*, longer and wider tracks).

#### 14. Reducing the Number of Required Test Conditions

Given the Agency's LKA test procedure currently contains many test conditions (*i.e.*, line type and departure direction), NHTSA requested comment on whether it is necessary to perform all test conditions to adequately address the lane departure safety problem or whether it could instead only test only certain conditions to minimize test burden. Specifically, NHTSA sought comment on whether it should consider incorporating the test conditions for only one departure direction if the vehicle manufacturer provides test data to assure comparable system performance for the other direction or consider adopting only the most challenging test condition(s). If commenters preferred the latter, the Agency questioned which test condition(s) would be most appropriate.

#### Summary of Comments

##### Departure Directions

NHTSA received several responses on whether it would be sufficient to assess LKA performance for only one departure direction (*i.e.*, left or right), with both BMW and Auto Innovators suggesting that this could be possible. BMW mentioned that their internal assessments evaluate performance for both departure directions, so they could provide data for the direction the

Agency chooses not to assess. However, Auto Innovators, GM, and Bosch cautioned NHTSA that identical performance cannot be guaranteed for both departure directions since not all LKA systems are symmetrical. Auto Innovators recommended that manufacturers attest to their vehicles' symmetry if NHTSA was to eliminate testing on one side to reduce test burden.

Bosch maintained that the Agency should still evaluate all conditions (*e.g.*, departure directions and lane marking types) to ensure system robustness and effectiveness and consistency of test results. GM, ASC, and Aptiv agreed with the need to test both directions. In a similar vein to that expressed by Auto Innovators and Bosch, DRI and TRC also commented that they have observed different performance depending on departure direction. As such, TRC encouraged NHTSA to assess both directions for all test conditions, but at a minimum, both directions for both solid and dashed lines.

##### Lane Line Types

Responses received on limiting LKA testing to a specific lane line type(s) were varied. FCA and ZF Group asserted that LKA systems should afford equal performance regardless of lane line type, while DRI claimed that it has observed differing performance for various lane lines. GM and Toyota claimed the dashed lane line condition was more challenging for LKA systems since cameras detect the contrast between the road surface and the lane line paint; however, GM stated that it has not seen meaningful performance differences for the various lane line types. GM further stated that Euro NCAP reduced the number of lane lines assessed starting in 2023 for this reason. Intel suggested that the Agency assess LKA performance for only the dashed lane line to reduce test burden, whereas, for the reasons stated earlier, Bosch recommended assessing all lane line types.

##### Minimizing Test Burden in General

In general, Auto Innovators stated that NHTSA should minimize test burden by prioritizing those test conditions representing the highest real-world risk and harmonizing with other organizations where possible. Advocates suggested that NHTSA should determine the number of scenarios that are necessary for testing based on whether performance in the selected scenarios would be sufficient to address the [targeted] safety need. Likewise, Rivian cautioned the Agency not to sacrifice coverage of real-world

conditions in an attempt to reduce test burden. Therefore, the company did not support selecting only the most challenging conditions in general, especially since, depending on the technology, system types may vary (*i.e.*, some may be camera-only, while others may use radar, lidar, or be fused) and may thus have different challenges.

On the other hand, Toyota stated that adopting the most challenging conditions, as NHTSA had also suggested, may be a viable solution to reduce test burden. As an example, Toyota suggested that if sensing for LKA systems becomes more difficult for higher lateral speeds and dashed lane lines, then that test condition would be the one adopted. CAS agreed with Toyota in sentiment but cautioned, like Advocates earlier, that if the most challenging test conditions do not actually encompass test conditions that are removed, the Agency risks the possibility that manufacturers will design to the test and thus safety benefits will be lost.

It is for this reason (*i.e.*, loss of safety benefits) that IDIADA opposed adopting only the most challenging test conditions. The test laboratory asserted that LKA systems may be designed to intervene only at high lateral speeds, which may be considered "worst-case," but won't intervene at lower speeds, which will only further reduce consumer acceptance, and thus benefits. IDIADA suggested adopting a reduced test matrix (*e.g.*, 0.2, 0.4, 0.6 m/s lateral velocity) or introducing a "GRID approach," whereby the manufacturer would provide all results for all tests required in the test matrix, but NHTSA would only verify testing for a subset of the required test conditions.

Intel and FCA suggested a similar concept to IDIADA's first suggestion, a reduced test matrix. The two entities suggested that, to reduce test burden, the Agency should limit the number of lateral velocities assessed, with FCA specifying that NHTSA should test the minimum and maximum lateral velocities considered. Along these lines, Toyota also favored "efficient" testing, whereby only those test conditions and trials should be performed that are necessary to communicate performance to consumers. Like FCA, the automaker mentioned if testing one speed can assure performance across a speed range, then only that speed should be tested.

To reduce test burden, GM also favored reducing the number of test scenarios, where possible, instead of the number of test runs (as proposed separately by NHTSA). The manufacturer stressed that setup for a

different test scenario requires significantly more time than conducting additional runs. ASC suggested that NHTSA should not reduce the number of test conditions and pointed out that the removal of the Botts' Dots test condition inherently presents a reduction. ZF Group was supportive, in general, of using manufacturer test data to augment NHTSA's results for those test conditions not assessed by the Agency. The group commented that this should not affect NHTSA's ability to provide an accurate performance assessment for LKA systems.

#### Response to Comments and Agency Decisions

Given the comments received, NHTSA has decided to continue testing both departure directions (*i.e.*, left and right) and several lane line types for its lane keeping performance tests. As mentioned previously, the Agency will also incorporate an additional test scenario that is similar to Euro NCAP's ELK Solid Line test. With the addition of this test, the Agency will conduct LDW/LKA assessments with dashed yellow, solid yellow, dashed white, and solid white lines, in addition to Botts' Dots. This approach, which adopts two departure directions and several common lane line types, should allow the Agency to continue to ensure system effectiveness and robustness, as Bosch asserted, as well as coherence with test protocols to maintain safety benefits.

The Agency shares concerns expressed by those commenters who contended that system performance may vary for each departure direction depending on vehicle symmetry and system robustness. NHTSA has observed performance failures in one departure direction but not the other during NCAP testing of LDW systems and research testing of LKA systems.<sup>437</sup> While the Agency could use manufacturer data or symmetry attestations to limit testing to one departure direction to reduce test burden, NHTSA agrees with Bosch that only the Agency's own tests will ensure consistency of results for consumers.

The Agency's testing has also shown LDW system failures for a particular lane line type but passing results for the others assessed, proving, contrary to assertions from several commenters, that equivalent performance is not guaranteed. Furthermore, while several commenters suggested that NHTSA could conduct assessments for only the dashed lane line condition because it is the most challenging for lane departure systems, the Agency's LDW data has

shown run failures for other lane line types as well. Notably, NHTSA has observed LDW run failures during Botts' Dots assessments but passing results for all runs conducted for the dashed line condition. Additionally, the Agency has seen LDW run failures for the solid line conditions and passing results for the dashed line configuration for a given vehicle. Similar observations were also made during NHTSA's LKA research for each of the model year 2019 vehicles tested. For a given lateral velocity, it was typically the case that failures were observed for the solid line condition but not the dashed line condition or vice versa. The Agency's data seems to show, as Rivian asserted, that different lane departure system types may have different challenges. As such, there is merit to continuing to assess multiple lane line types during the Agency's testing.

Even with the addition of Euro NCAP's ELK Solid Line test, NHTSA is taking sufficient steps to reduce test burden by integrating LDW and LKA testing and eliminating repeat trials (as discussed next) such that it is not necessary to further limit testing to assessments for one lane line type, departure direction, or, as Toyota suggested, lateral velocity. Only by retaining test conditions representing greater coverage of real-world situations will the Agency ensure that it continues to address the safety need, as several commenters requested. NHTSA also reasons, as mentioned for the other ADAS technologies included herein, that pursuing an incremental approach to increasing test stringency (*i.e.*, that realized by increasing lateral velocity) best ensures that only those lane departure systems affording robust performance achieve passing results during the Agency's testing. It is for this reason that the Agency does not plan to adopt a reduced test matrix with fewer lateral velocities, as several commenters suggested. NHTSA agrees with GM that conducting additional runs with slightly different parameters (*i.e.*, incremented lateral velocity) for a given test scenario can be accomplished rather quickly. Furthermore, NHTSA expects that its attempt to harmonize to a large extent with Euro NCAP's LSS test protocol for its future lane keeping tests should, as Auto Innovators suggested, further reduce burden such that this concession is not necessary.

#### 15. Number of Required Trials To Pass, Repeat Trials, and Pass Rate for LKA

Similar to its request for other ADAS technologies proposed for adoption as part of this update to NCAP, the Agency sought feedback from commenters on an

appropriate number of test trials to adopt for each LKA test condition, and an acceptable pass rate.

#### Summary of Comments

Comments on these topics were varied, with some commenters suggesting that only one test trial for each test condition was appropriate, and others recommending up to seven trials per test condition.

Those favoring one test trial per LKA test condition and lateral velocity included TRC, IDIADA, and HATCI. IDIADA suggested that current systems are very robust such that performance is repeatable. They also noted that system robustness can be evaluated two ways—performing the same test many times (as NHTSA currently does) or performing many tests one time. TRC and HATCI mentioned that if a system did not pass requirements at a given test speed (*i.e.*, lateral velocity), performance could be verified with an additional test run (TRC) or runs (HATCI) at that speed. HATCI mentioned performing seven runs in such instances and proposed a pass rate of five out of seven. TRC also recommended that testing cease and not progress through higher lateral velocities if poor performance is observed for two of three test runs.

Some commenters (GM, Rivian, FCA, Toyota, and ASC), preferred maintaining the number of trials and pass rate from NCAP's current LDW test. Currently, NCAP performs five trials for each of the LDW test conditions (defined by a combination of lane type and departure direction), and vehicles must pass three out of the five trials (60 percent) for each test condition, and 20 of the 30 trials (66 percent) overall. Both Rivian and GM stated five trials would be sufficient to assure reliability of system performance, and a pass rate of three out of five would suffice to address any variances in testing conditions. In general, GM favored optimizing the number of test conditions rather than reducing the number of test runs since the former does more to reduce overall test burden and the latter leads to a diminished understanding of system performance variation. However, GM also noted that WIP SAE J3240 is proposing four tests per condition and a pass rate of 75 percent (*i.e.*, three out of four).

Other commenters, including Bosch, BMW, Tesla, and Auto Innovators, supported a pass rate of two out of three, with BMW specifying that the pass rate apply for each lateral velocity. The automaker stated that the Agency should accept one failed run since perfect system performance in the real world cannot be guaranteed. Tesla

<sup>437</sup> See model year 2019 LKA test data.

suggested that the Agency harmonize test protocols with Euro NCAP, but in instances of failed runs, NHTSA should repeat the test at least two more times (*i.e.*, three runs in total) to assess “performance consistency.” Auto Innovators said that although it supports the current pass rate (*i.e.*, five out of seven), it would also support a reduced pass rate of two out of three to lessen test burden.

Intel expressed no preference on either the number of runs conducted for each test condition or the pass rate adopted for LKA testing, but suggested that NHTSA try to minimize test burden when deciding what is appropriate. CAS stated that NHTSA use a binomial distribution to determine an appropriate reliability and confidence so that consumers may know how reliable a technology is. Advocates opined that the Agency should select the number of trials and pass/fail criteria to ensure a higher level of confidence in testing to assure consumers that the system will work as intended across a wide range of road and line conditions, not just those limited conditions assessed by NHTSA during testing.

#### Response to Comments and Agency Decisions

For each LKA test condition, NHTSA will follow a testing approach similar to those it has adopted for the other ADAS technologies included in this notice. The Agency will increment the SV’s lateral velocity towards the lane line in 0.1 m/s (0.3 ft./s) increments from the minimum lateral velocity to the maximum for each of the required tests (*i.e.*, 0.2 m/s to 0.6 m/s (0.7 ft./s to 2.0 ft./s)), conducting one trial for each required lateral velocity. In the event the SV fails to provide an acceptable LKA system intervention or fails to issue an LDW warning that meets the requirements outlined for the Agency’s tests, testing will cease for the test condition, the test scenario, and LKA testing overall. Vehicles must pass all required trial runs (*i.e.*, one run per lateral velocity) for all test conditions to receive credit for the lane keeping tests. A vehicle that provides an acceptable LDW alert in all trials, but fails to produce an acceptable LKA intervention for a given run, will not separately receive credit for LDW and vice versa.

#### Number of Test Trials/Repeat Trials

Like AEB and PAEB, several respondents recommended that the Agency perform multiple trials (*e.g.*, two, three, four, five, seven, etc.) for each LKA test variant (*i.e.*, for each lateral velocity assessed for each test condition), often with the number of

recommended trials varying based on prior results. However, NHTSA has made the decision to run only one valid trial per LKA test variant. The Agency concludes this decision, which aligns with what it has adopted for AEB and PAEB testing, as well as for BSW and BSI, is appropriate for the LKA tests as well.

The adopted testing approach will limit test burden while ensuring a greater number of real-world crashes are represented. As mentioned, the Agency will assess LDW alerts for multiple lateral velocities instead of one, as is required currently. NHTSA has also added a modified version of Euro NCAP’s ELK Solid Line tests, which will include two additional lane marking types (*i.e.*, dashed white and solid yellow) and double lane lines, to its LDW/LKA test matrix to assess secondary departures. While this results in (at most) 50 test trials overall for the Agency’s LKA testing, this is less than the number of trials that will be required for the Agency’s PAEB tests and far fewer than the number of trials that would be required if NHTSA were to adopt an approach that required five trials per test variant (as is currently specified for its LDW tests) for each of the 10 test conditions adopted for LKA. Adopting five trials per test variant, as some commenters suggested, would result in 250 total test trials for the Agency’s LKA testing. This would be a significant burden to both vehicle manufacturers and NHTSA and would prohibit the Agency from communicating safety information quickly to consumers.

NHTSA’s decision to conduct one trial per test variant and discontinue testing upon the first instance of the system’s inability to satisfy the associated performance requirements limits consumer confusion and better instills confidence and reliability in a vehicle’s LDW and LKA systems. As the Agency has mentioned previously for other ADAS technologies, conducting repeat trials in the event the system fails to meet test procedural requirements—essentially, giving a system multiple opportunities to pass—may provide consumers with a false assurance of system robustness and repeatability. So, while BMW suggested that the Agency should accept a limited number of failures in system performance during testing because system performance cannot be guaranteed under all real-world conditions, NHTSA disagrees. An assessment approach that affords no tolerance for system error during controlled laboratory testing best assures that passing systems offer robust

performance during real-world operation.

Furthermore, while other respondents expressed that the Agency should perform multiple trials for each test variant to ensure system reliability, the Agency maintains, as it conveyed for other ADAS technologies prior, that it is appropriate to require one trial run per test variant instead of multiple runs to achieve this goal. This point was echoed by IDIADA in its comments. The test laboratory asserted that system robustness can be evaluated two ways—either the same test can be performed many times, or, as NHTSA intends, many tests can be performed one time. Since, as discussed earlier, NHTSA will increment the SV’s lateral velocity by 0.1 m/s (0.3 ft./s) from the minimum lateral velocity established for each test condition to the maximum, the slight increase in lateral velocity from one trial to the next should effectively provide the same benefit of assuring reliability as multiple runs conducted at the same speed. Inconsistent systems may pass at one lateral velocity but will likely fail at another (higher) lateral velocity as the test stringency increases. Since a failure of any one run at any given lateral velocity for any one test condition will result in an overall test failure for the tested vehicle, NHTSA concludes its approach is sufficient to serve as an acceptable gauge of system robustness.

The Agency’s planned test method affords the most balanced approach to ensure system reliability across a wide range of real-world conditions with an acceptable degree of confidence without exponentially increasing test burden, sacrificing program integrity, or introducing delays in providing information to consumers.

#### Pass Rate

As mentioned, NHTSA has decided to adopt a pass rate of 100 percent for NCAP’s LKA testing. This decision aligns with the Agency’s choice for the other ADAS technologies discussed herein. Both LDW and LKA systems must achieve passing results (*i.e.*, issue a warning or intervention, respectively, to meet the associated performance requirements) for all adopted test conditions (*i.e.*, 50 tests) to receive credit for lane keeping technology. By dictating a 100 percent pass rate, consumers will be able to quickly recognize which vehicles offer robust, repeatable system performance.

The Agency has decided not to assign credit separately for LDW and LKA since the LDW and LKA requirements will be fundamentally linked such that an LDW alert will be a requirement for the LKA tests. Furthermore, like FCW,

which the Agency will similarly not provide separate credit, LDW is an existing warning technology in NCAP. NHTSA reasons that it is not appropriate to continue to assign separate credit to an existing warning system (*i.e.*, LDW) once the complementary active safety system

(*i.e.*, LKA) is introduced. This decision does not pertain to BSW and BSI since both blind spot technologies are simultaneously being added to NCAP as part of this program update. Furthermore, unlike the test procedure requirements for FCW and AEB as well as LDW and LKA, which will share the

same test scenarios, different test scenarios are being adopted for BSW and BSI technology.

Test scenarios and conditions adopted for LDW/LKA testing are shown in Table 25.

TABLE 25—LANE DEPARTURE WARNING (LDW)/LANE KEEPING ASSIST (LKA) ADOPTED TEST CONDITIONS

Test scenario	Line type	Departure direction	Lateral velocity (m/s (ft./s))	Passing criteria	
				Maximum SV excursion (m (ft.))	LDW alert issued (m (ft.))
Primary Departure ..... (Single Straight Lane Line) .....	Solid White .....	Left .....	0.2 (0.7)	-0.3 (- 1.0)	0.75 to -0.3 (2.5 to -1.0)
			0.3 (1.0)		
			0.4 (1.3)		
			0.5 (1.6)		
	Solid White .....	Right .....	0.6 (2.0)		
			0.2 (0.7)		
			0.3 (1.0)		
			0.4 (1.3)		
	Dashed Yellow .....	Left .....	0.5 (1.6)		
			0.6 (2.0)		
			0.2 (0.7)		
			0.3 (1.0)		
Dashed Yellow .....	Right .....	0.4 (1.3)			
		0.5 (1.6)			
		0.6 (2.0)			
		0.2 (0.7)			
Raised Pavement Markers .....	Left .....	0.3 (1.0)			
		0.4 (1.3)			
		0.5 (1.6)			
		0.6 (2.0)			
Raised Pavement Markers .....	Right .....	0.2 (0.7)			
		0.3 (1.0)			
		0.4 (1.3)			
		0.5 (1.6)			
Secondary Departure ..... (Dual Straight Lane Line) .....	Solid Yellow (L)/Dashed White (R) ..	Left .....	0.6 (2.0)	-0.3 (- 1.0)	0.75 to -0.3 (2.5 to -1.0)
			0.2 (0.7)		
			0.3 (1.0)		
			0.4 (1.3)		
	Solid Yellow (L)/Dashed White (R) ..	Right .....	0.5 (1.6)		
			0.6 (2.0)		
			0.2 (0.7)		
			0.3 (1.0)		
	Dashed White (L)/Solid White (R) ...	Left .....	0.4 (1.3)		
			0.5 (1.6)		
			0.6 (2.0)		
			0.2 (0.7)		
Dashed White (L)/Solid White (R) ...	Right .....	0.3 (1.0)			
		0.4 (1.3)			
		0.5 (1.6)			
		0.6 (2.0)			

16. Test Procedure Changes and Refinements

The Agency also asked commenters if there are any aspects of NCAP’s current

LDW or proposed LKA test procedure that need further refinement or clarification.

Summary of Comments

Comments on this topic were varied and ranged from test procedure clarifications to future considerations.

Comments are grouped into general topics below.

#### Lane Line, Environmental, and Traffic Conditions

TRC, GM, Toyota, and Auto Innovators requested that the Agency clarify the lane line condition that is acceptable for testing to improve repeatability and reproducibility. The latter three commenters asserted that lane lines must be “of high quality and free from irregularities” to not affect detection and thus, system performance. Accordingly, they recommended that there be no coal tar, tire marks, shadows/reflections, or faded markings, while TRC additionally requested clarification regarding brightness specifications. In contrast, AASHTO suggested NHTSA should perform LDW and LKA testing using roadway conditions prevalent in the real world, including faded and undetectable lane markings, since lane markings undergo wear and tear and vary with weather conditions. CAS mentioned the U.S. typically uses double lines to separate vehicle travel lanes from bicycle lanes, whereas Europe often uses physical barriers to create lane separation. Given the rise in fatalities for cyclists, CAS asserted that it was necessary to assess U.S. roadway conditions. CAS also proposed that the Agency adopt tests to assess general system functionality under certain environmental conditions (e.g., rain, ice, fog, low sun angles, roadway conditions, line of sight, etc.), traffic conditions (e.g., congestion, density), or operating conditions (e.g., speed) and ensure that vehicles inform drivers via a warning when the system is not working.

#### Test Procedure Changes

Regarding test procedure changes, GM and Auto Innovators proposed that NHTSA harmonize conceptually with Euro NCAP by specifying use of a particular robot, e.g., the ABD SR15 steering robot, to initiate drift during LKA testing. Both organizations also asked that NHTSA devise a procedure to ensure that robot friction and inertia do not affect system performance, as well as consider procedural clarifications for steering friction and electric power steering tuning.

Rivian asked that the Agency add “improved illustrations” and “diagrams detailing what passing each test looks like” to the LKA test procedure so that manufacturers may better understand each test scenario.

Finally, Auto Innovators recommended that NHTSA adopt the nomenclature in SAE J3063 and the Clearing the Confusion: Recommended

Common Naming for Advanced Driver Assistance Technologies document.

#### Additional Scenarios

Some commenters suggested test procedure additions. Massachusetts Vision Zero Coalition and Vision Zero Network, among others, suggested that the Agency should perform an assessment of LKA systems to ensure they respond appropriately to passing cyclists (*i.e.*, allow a safe distance—minimum of three feet—between the vehicle and cyclist when passing). Similarly, the League and NACTO requested that the Agency conduct research on LDW and LKA systems to document their interactions with cyclists and pedestrians (NACTO), because anecdotal reports suggest that systems are providing unwanted corrections when drivers attempt to cross a double-yellow center line into an opposing traffic lane to pass a cyclist safely. Like other commenters, NACTO stated that vehicles’ LKA systems should provide cyclists with at least three feet of space while passing, as this is required by law in 36 states and the District of Columbia.

ASC, Aptiv, and an anonymous commenter recommended that the Agency consider how to change the current LDW/LKA test protocol to evaluate lane centering systems, a system the groups asserted NHTSA should encourage. These respondents stated that NHTSA could likely use the current LDW/LKA test protocol for testing of lane centering systems, but requirements for such systems should be more stringent. The commenters also suggested that it would be “highly appropriate” to include enhanced curved road testing as part of a lane centering test procedure. ITS reasoned that NHTSA should include lane centering assist alongside the other two lane keeping technologies in NCAP because the Agency noted it, too, can address the same pre-crash scenarios. The company requested details on why this technology was excluded.

Advocates recommended that the Agency develop tests to limit false positives for LDW based on the most frequent causes of dissatisfaction and non-use., based on the reported driver satisfaction issues with LDW and the frequency with which such systems are turned off as a result. In contrast, Aptiv and ASC did not support the addition of a false positive test for LKA systems. One anonymous public commenter stated that NHTSA should consider evaluating systems for how they react after a period of driver inactivity, suggesting that the Agency should have requirements for how long the system

should operate without driver action and specify what the system should do in such instances (e.g., bring the vehicle safely to stop).

While Auto Innovators generally supported harmonization with Euro NCAP, the group did not support adoption of several of the consumer information program’s LSS scenarios for U.S. NCAP’s LDW/LKA tests. In addition to the ELK Overtaking vehicle scenario already discussed previously in the Removal or Integration of LDW section, the organization recommended that NHTSA not include the ELK Oncoming vehicle scenario as well. The group remarked that it is similar in intent to NHTSA’s Oncoming Traffic Safety Assist (OTSA) test procedure, which was included in NCAP’s roadmap.

#### Response to Comments and Agency Decisions

##### Lane Line, Environmental, and Traffic Conditions

A wide variety of road conditions exist across the U.S. Nonetheless, one of the Agency’s main objectives is to evaluate each vehicle model against the same protocol. To maintain a reasonable test burden, testing with multiple lane line and all pavement surface conditions that a vehicle may encounter is not possible. This is also a reason that NHTSA is unable to test general system functionality under multiple atmospheric conditions and traffic conditions.

That being said, it is necessary to clearly specify pavement condition and marking qualities to ensure vehicle models are undergoing the same procedure. The Agency will maintain the road test surface and lane line markings specifications currently included in NCAP’s LKA draft test procedures. Specifically, the road test surface shall be a dry, uniform, solid-paved high-mu surface having no debris, irregularities, or undulations, such as loose pavement, large cracks, or dips. The road test surface shall produce a peak friction coefficient (PFC) of  $1.02 \pm 0.05$  when measured using ASTM F2493 standard reference test tire when tested in accordance with ASTM Method E 1337–19 at a speed of 64.4 kph (40 mph), without water delivery.<sup>438</sup> Surface friction is a critical factor in testing LKA systems as vehicles are dynamically assessed for various conditions, including multiple lateral velocities and turns. Vehicles

<sup>438</sup> ASTM E1337–19, *Standard Test Method for Determining Longitudinal Peak Braking Coefficient (PBC) of Paved Surfaces Using Standard Reference Test Tire*.

also use steering and/or braking maneuvers for the LKA intervention during testing. Thus, the presence of moisture will significantly change the measured performance of a vehicle's ability to turn. A dry surface is more consistent and provides for greater test repeatability. Lane line markings shall have high contrast, meet U.S. DOT specifications, as required by the MUTCD, and be considered in very good condition. Lane marker color and reflectivity shall meet all applicable standards from the International Commission of Illumination (CIE) for color and the American Society for Testing and Materials (ASTM) on lane marker reflectance.

With respect to environmental conditions, the Agency's lane keeping technology tests will be performed when the ambient temperature is any temperature between 0° C (32° F) and 40° C (104° F) and the maximum wind speed is no greater than 10 m/s (22 mph). While the Agency reasons that lane keeping systems can operate acceptably at lower temperatures, the limiting factor is braking performance during LKA interventions. NHTSA has selected an ambient temperature range that matches the range specified in NHTSA's safety standard for brake system performance.<sup>439</sup> Excessive wind during testing could affect the ability of the SV to maintain consistent speed and/or lateral position.

Tests will be conducted during daylight hours with an ambient illumination on the test surface that is not less than 2,000 lux, as this approximates the minimum light level on a typical roadway on an overcast day. In addition, to better ensure test repeatability, testing may not be performed while driving toward or away from the sun such that the horizontal angle between the sun and a vertical plane containing the centerline of the subject vehicle is less than 25 degrees and the solar elevation angle is less than 15 degrees. The intensity of low-angle sunlight can create sensor anomalies that may lead to unrepeatability test results. Visibility (*i.e.*, a clear field of view) must be 5 km (3.0 mi) or greater. Testing will not be run during periods of precipitation (*i.e.*, rain, snow, or hail) or when visibility is affected by fog, smoke, ash, or other particulate. NHTSA reasons that the presence of precipitation could influence the outcome of lane keeping tests because wet, icy, or snow-covered pavement has

lower friction. Conducting a test under those conditions also poses risks to lab personnel. This choice is also supported by crash data from 2011 to 2015 which shows that 91 percent of fatal and 87 percent of injurious road departure crashes occurred in clear weather and 87 percent of fatal and 81 percent of injurious road departure crashes occurred on dry roadway surfaces, on average, annually.<sup>440</sup> Additionally, when considering opposite-direction crashes, 88 percent of fatal and 85 percent of injurious crashes occurred during clear conditions, and 83 percent of fatal and 76 percent of injurious crashes occurred on dry roadway surfaces on average, annually.<sup>441</sup>

As stated in the March 2022 notice, LDW telltales are often present when the activation threshold speed, lane markings, and environmental conditions meet system requirements. These telltales disappear when the system is inoperable due to inadequate conditions or those which introduce too much uncertainty for the vehicle's systems to function. Given the lack of a telltale indicates to the driver a change in system status, NHTSA chose not to propose a requirement that the vehicle issue an alert if the lane keeping system is not functioning. This decision will be upheld for this NCAP update.

#### Test Procedure Changes

The Agency will use the AB Dynamics SR15 steering robot for its LKA tests, as GM and Auto Innovators requested. Due to its inherent low inertia, low drag (*i.e.*, friction) design, NHTSA concludes it is unnecessary to devise a procedure to ensure that steering robot friction and inertia do not affect system performance. It can also be installed on the steering wheel without removing the airbag.

NHTSA has reviewed its LDW and LKA test procedures for the release of this final notice and has added descriptive language and illustrations to improve clarity of the procedures, as Rivian has requested.

The Agency has also adopted the nomenclature for lane keeping systems in SAE J3063 and the Clearing the Confusion: Recommended Common Naming for Advanced Driver Assistance Technologies document, as Auto Innovators requested. As reflected

throughout this notice and in the accompanying test procedure, the Agency will refer to lane keeping systems as Lane Keeping Assistance (LKA) systems.

#### Additional Scenarios

While NHTSA is not actively conducting research or developing test procedures to assess the performance of LDW and/or LKA systems around cyclists and pedestrians, in light of the comments received, it will consider doing so in the future.

NHTSA recognizes that SAE has recently finalized a performance-based test procedure to assess LCA systems; however, at this time, the Agency has not had a chance to evaluate this protocol to determine its acceptability for adoption in NCAP.<sup>442</sup> Even minor changes to its current LDW/LKA test protocol to make requirements more stringent, as ASC and Aptiv suggested, would require evaluation. Accordingly, LCA performance will not be assessed as part of this NCAP update. That being said, as noted earlier when discussing secondary departures after an initial LKA intervention, NHTSA expects that vehicles will continue to undergo lane centering design improvements even without a prescribed test. The Agency will reconsider assessing the performance of LCA systems in NCAP once it has thoroughly evaluated the SAE test procedure.

Regarding false positive testing for lane keeping technologies, NHTSA maintains its previous stance that a lane keeping technology false positive test is not appropriate at this time. Concerns with repeatability and reproducibility exist currently with respect to defining the appropriate delineation between a driver who is actively steering and not utilizing the turn signal, such that the system should be suppressed, and one who is not, such that the intervention would be necessary. This delineation must be assured to adequately address consumer acceptance issues. NHTSA plans to conduct research to assess such situations, as well as others where LKA interventions should be suppressed, such as when ESC, FCW, and/or AEB is in operation, or when a VRU is residing at a 25 percent offset in the SV travel lane. The Agency also notes it is further investigating human factors involved during intended and unintended driver maneuvers for future applications. Nuisance alerts often occur because the driver's intent to maneuver in a

<sup>439</sup> FMVSS No. 135, "Light vehicle brake systems," <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-V/part-571/subpart-B/section-571.135>.

<sup>440</sup> For road departure crashes, weather conditions were unknown or not reported in 1 percent of fatal crashes. Roadway surface conditions were unknown or not reported in 1 percent of fatal road departure crashes and 2 percent of road departure crashes with injuries.

<sup>441</sup> For opposite direction crashes, weather conditions were unknown or not reported in 1 percent of fatal crashes.

<sup>442</sup> SAE J3240, Passenger Vehicle Lane Departure Warning, Lane Keeping Assistance, and Lane Centering Assistance Systems Test Procedure, published December 20, 2023, includes provisions for an LCA assessment.



particular direction does not align with the vehicle's movement due to poor environmental/road conditions and/or vehicle hardware or software shortfalls for a particular situation. Currently, the Agency defines driver intent by the vehicle's lateral velocity; low lateral velocity is meant to simulate unintended drift without the use of a turn signal. It is possible that other information gathered by the vehicle (*i.e.*, torque on the steering wheel, steering rate, driver gaze, etc.) can play a role in determining a driver's intent to maneuver, thus allowing the vehicle to suppress unnecessary warnings and activations. Data gathered may also help inform next steps to address concerns regarding driver inactivity or distraction, which may result in unintended drifting. NHTSA notes this human factors research is ongoing, and the Agency continues to monitor consumer complaint data related to false positive activations of LDW and LKA systems. NHTSA will consider adopting additional LDW/LKA tests in the future to address relevant safety needs if such tests are found to be repeatable and reproducible during the Agency's research.

At this time, as Auto Innovators requested, NHTSA is not adopting Euro NCAP's ELK Overtaking vehicle or ELK Oncoming vehicle scenarios for NCAP's LDW/LKA assessments. However, as indicated previously, the Overtaking vehicle scenarios is similar to two of the test scenarios adopted for the NCAP's BSI assessments—the SV Lane Change with Constant Headway scenario and SV Lane Change with Closing Headway scenario.

### VIII. Self-Reported Data

Currently, through the Agency's approved information collection,<sup>443</sup> vehicle manufacturers report internal physical test data that demonstrates whether the recommended ADAS technologies installed on their vehicle models pass NHTSA's system performance test requirements. NHTSA uses this data, in conjunction with random verification testing, to determine whether each vehicle model's

performance meets NCAP's requirements. This process, in place since model year 2011, has been critical to the successful administration of the program. However, as the Agency noted in its March 2022 RFC, there are challenges associated with this process. NHTSA has identified inconsistencies in vehicle manufacturers' self-reported data submissions, many of which may stem from unfamiliarity with NCAP's test procedures. To address this issue, NHTSA stated one approach would be to require all vehicle manufacturers to provide data from independent test facilities that meet criteria demonstrating competence in NCAP testing protocols. NHTSA concludes that this step would help the Agency maintain credibility and retain public trust in its program.

#### A. NHTSA's Proposals, Summary of Comments, Response to Comments, and Agency Decisions

##### 1. Self-Reported Data From Non-NHTSA Contracted Laboratories

In its March 2022 RFC notice, NHTSA proposed to only accept self-reported ADAS performance data from designated NHTSA-contracted laboratories.

##### Summary of Comments

Commenters were divided on whether the Agency should only accept self-reported test data from NHTSA's contracted test laboratories. TRC, Auto Innovators, Honda, GM, Mitsubishi, Toyota, FCA, Tesla, and Hyundai stated that the Agency should continue to accept self-reported test data from non-NHTSA contracted test laboratories, as restricting acceptance of data to NHTSA-contracted laboratories may increase burden and contribute to delays in the dispensing of information to the public. Honda, among others, cautioned that if the Agency limits testing to only NHTSA's contracted test laboratories, there may not be sufficient capacity available to complete all required testing, especially considering the proposed additions to the ADAS testing program. Vehicle models would then not receive credit for having a NHTSA-approved ADAS technology despite being otherwise eligible. FCA noted that self-reported data is accepted for FMVSS compliance and should therefore be acceptable for NCAP as well. Honda further requested clarification regarding NHTSA's statement in its March 2022 RFC that NHTSA will refuse data when it is not provided from a test facility that is designated as a NHTSA-contracted test lab or when tests are not conducted in

accordance with NCAP's protocols, noting that the Agency's use of "or" was unclear.

TRC, a test laboratory, offered that the criteria most relevant to the successful conducting of ADAS testing are quality process and management accreditation, facility and lane marking conditions, equipment condition, calibration and traceability, independence, and a positive history of performing testing. Mitsubishi requested that test laboratories be made available in other world regions, including Japan.

Auto Innovators acknowledged NHTSA's desire to maintain program credibility and proposed that this could still be done while allowing manufacturers to conduct testing at an in-house or third-party facility. The group supported the Agency's ability to request test documentation and to review any relevant data related to the vehicle or test facility on a case-by-case basis. Tesla also suggested that NHTSA could request a dossier containing evidence of a valid ADAS test prior to granting credit, similar to Euro NCAP's process.

On the other hand, CAS, Bosch, Advocates, and a public commenter supported accepting self-reported test data only from NHTSA-contracted test laboratories. CAS suggested that NHTSA publish standards with which laboratories could comply and become a NHTSA-certified lab as well as standards for third-party organizations to audit and certify other laboratories. The public commenter opined that the Agency might consider accepting data from laboratories contracted for UN ECE testing. Bosch strongly opposed self-reported data altogether and proposed that tests should be conducted and/or contracted by an authority to ensure the repeatability and reproducibility of results. The company referred to Euro NCAP's testing process, in which vehicle manufacturers, test laboratories, or a third party pays for a vehicle test, and one of Euro NCAP's eight test laboratories must perform the testing.

##### Response to Comments and Agency Decisions

Regarding Honda's request for clarification on its proposal, NHTSA's intent was to not accept manufacturers' self-reported data that is either (1) derived from tests that were not conducted in accordance with NCAP's testing protocols, or (2) generated by test laboratories that are not contracted by the Agency to perform the tests in question, regardless of whether test protocols were followed. The Agency's proposal differed from the current submission process, which allows

<sup>443</sup> NHTSA has a current information collection under the Paperwork Reduction Act (OMB Control Number: 2127-0629) to obtain vehicle information for the general public in support of NCAP. The information collection requests responses from major motor vehicle manufacturers about the crashworthiness, crash avoidance, and other capabilities of their vehicle models. The collection is voluntary and conducted annually. The information is primarily used to provide information to consumers. It is used to disseminate safety information on <http://www.nhtsa.gov/ratings> and to address consumer inquiries as well as for internal agency analyses.

manufacturers to provide test data from any test laboratory if the test is deemed valid by the manufacturer.

Maintaining public trust is critical and has been NHTSA's long-standing goal for NCAP. However, NHTSA acknowledges that the concerns expressed by Honda and others regarding test laboratory capacity is credible. Delays in test scheduling will ultimately translate to delays in providing updated information to the American public. Due to the limited number of NHTSA-contracted test laboratories currently available, it is not currently practicable to require manufacturers to perform ADAS testing at NHTSA-contracted laboratories in order to gain NCAP ADAS credit.

As such, the Agency has determined that for data gathered in response to this NCAP update, vehicle manufacturers may utilize an in-house or third-party facility, either in the U.S. or globally, provided that the test is conducted (1) in accordance with NCAP's test procedures and (2) using U.S. production-level vehicles identical to those that could be purchased by a consumer at dealers' lots in the U.S. at any particular time during a given model year. However, it should be noted that this decision is subject to change in the future. For example, when NHTSA completes a rulemaking to update the Monroney label, the Agency may require the use of specific laboratories to generate ratings data, a testing method already used for NCAP's optional testing program. Under this provision, vehicle manufacturers fund desired testing through specified laboratories; however, test setup, test conduct, and data quality control must adhere to NHTSA's protocols.<sup>444</sup> In addition, NHTSA wants to be clear that vehicles failing to provide passing performance during the Agency's assessments will not receive credit for the related technology, regardless of whether passing results were provided by the vehicle manufacturer in response to the NCAP's annual data information request.

## 2. Other Means To Address Programmatic Challenges With Self-Reported Data

The Agency requested feedback from the public regarding new ways to alleviate some of the programmatic challenges it has encountered with NCAP ADAS testing.

### Summary of Comments

GM and ASC suggested NHTSA should accept virtual forms of testing data, including computer simulations,

software-in-the-loop, and hardware-in-the-loop methods. GM noted that producing data in this way would be more resource efficient. ASC recommended allowing a combined submission including real and virtual tests, particularly upon implementation.

Auto Innovators and HATCI suggested the Agency engage with vehicle manufacturers to provide clarity regarding test procedures. In particular, HATCI proposed that NHTSA conduct test procedure "workshops" to ensure that vehicle manufacturers and test laboratories have a common understanding of test conduct practices. Auto Innovators noted that updates to test procedures could be made to ensure more repeatable and reproducible results. Along those lines, GM supported a thorough test procedure development process involving the development of confidence intervals and adjustment to procedures after enough NHTSA-sponsored and internal tests are conducted.

Consumer Reports supported efforts to continuously review the NHTSA complaints database for ADAS systems as well as defect investigations to identify situations where systems may be creating "a perceived or real risk" of increasing crashes rather than mitigating them. The group also proposed reviewing data for consumer acceptance issues, such as ADAS false activations in the real world.

### Response to Comments and Agency Decisions

The Agency will accept only self-reported data from physical testing at this time. NHTSA acknowledges that manufacturers must gather a significant amount of data to receive credit for any of the ADAS technologies recommended in NCAP. However, at this time, there is not sufficient evidence that virtual or computer-generated data would sufficiently demonstrate that vehicle models meet NCAP's ADAS performance requirements.

As mentioned throughout this notice, NHTSA plans to closely monitor real-world data for problematic activations, unintended consequences, and consumer acceptance concerns. As ADAS technologies become more prevalent in the fleet and more complex, it is critical that the Agency keeps abreast of the changing crash landscape. The Agency also plans to continue its research efforts to make ongoing improvements to the program, as discussed in the following NCAP Roadmap section.

## IX. NCAP Roadmap

In accordance with section 24213(c) of the BIL, the March 2022 RFC notice proposed a 10-year roadmap setting forth NHTSA's plans to upgrade NCAP with mid-term plans spanning 2024 through 2028 and long-term plans spanning 2024 through 2033. NHTSA has long-established criteria for evaluating safety technologies for inclusion in NCAP. Potential program updates must meet the following four prerequisites: (1) the update to the program addresses a safety need; (2) there are system designs that can mitigate the safety problem, (3) existing or new system designs have the potential to improve safety, and (4) a performance-based objective test procedure exists that can assess system performance.

NHTSA uses the notice and comment process to seek public input on updates to NCAP and ensure the reasonableness of the time periods for NCAP changes, and the Agency expects this practice to continue. As part of the Agency's development of next steps for NCAP, NHTSA regularly evaluates other rating systems from vehicle safety consumer information programs within the United States and abroad, including whether there are safety benefits from consistency with those other rating systems.

In the mid-term portion of the roadmap, NHTSA has included only those technologies that are practicable and for which objective tests, evaluation criteria, and other consumer data exist. The mid-term potential program updates proposed in the 2022 NCAP RFC included the following:

- Adding four ADAS technologies (LKA, BSW, BSI, and PAEB).
- Updating the performance evaluation of current recommended ADAS technologies (FCW, LDW, DBS, and CIB).
- Including evaluation of advanced lighting technologies and other ADAS technologies.
- Creating a new crash avoidance rating system.
- Updating the Monroney label to include crash avoidance rating information.
- Adding a crashworthiness pedestrian protection testing program.
- Adding the THOR-50M in NCAP's full frontal impact crash tests and the WorldSID-50M in NCAP's side impact barrier and side impact pole test.
- Considering a new frontal oblique crash test with the advanced THOR-50M.

The long-term initiatives discussed in the March 2022 NCAP RFC notice

<sup>444</sup> 52 FR 31691.

include a variety of new technologies with safety potential that are not sufficiently mature, and thus require additional agency research and review. These include: intersection safety assist (intersection AEB); opposing traffic safety assist; and more advanced automatic emergency braking that accounts for vehicles turning right or left at intersections across the path of pedestrians, as well as bicyclists, motorcyclists, and other VRUs in applicable crash scenarios. NHTSA also stated its intent to explore opportunities to encourage the development and deployment of emerging technologies for safe driving choices such as driver monitoring systems for reducing distraction and drowsy driving, intelligent speed assist, alcohol detection systems, seat belt interlocks, and rear seat child reminder assist.

The March 2022 NCAP RFC notice explained that while the Agency can reasonably anticipate when the start of actions may occur in the mid-term portion of the roadmap, many technologies in the long-term portion of the roadmap require additional research, test procedure development, and product development and maturity, among other factors. These factors prevent the Agency from providing more details on the anticipated start of action at this time. For the mid-term initiatives, the Agency stated that the completion of action and subsequent implementation dates are highly dependent upon the notice and comment process, among other factors. Specifically, the Agency stated that completion dates depend on the number and depth of the comments received in response to an RFC notice, along with any technical research necessary to resolve any challenging issues or potential policy considerations raised in the comments. Therefore, the March 2022 NCAP RFC notice explained that the Agency cannot reasonably anticipate those timelines in advance.

NHTSA requested comment on (1) safety opportunities or technologies in development that could be included in future roadmaps, (2) opportunities to benefit from collaboration or harmonization with other consumer vehicle safety information programs, and (3) other issues to assist with long-term planning.

#### Summary of Comments

NHTSA received numerous comments on the proposed roadmap. Many commenters expressed general support for the proposed NCAP roadmap, with industry stakeholders noting that a roadmap with near, mid, and long-term strategies for updating NCAP

incentivizes manufacturers to prioritize and accelerate the most relevant and effective safety technologies. However, many commenters, including Advocates for Highway and Auto Safety, the Consumer Federation of America, and Auto Innovators, stated that the proposed NCAP roadmap lacks sufficient specificity on future timelines, dates, and required actions. Industry stakeholders commented that the roadmap did not provide stakeholders with enough information to plan for the future. Stakeholders requested the roadmap include proposed and ongoing research and contain target dates for key milestones, decision points, and implementation of new program items to allow automakers to proactively plan and develop long-term design strategies and technology integration. Commenters also requested that the NCAP roadmap timetables align with the three-to-five-year duration associated with vehicle development.

Several industry stakeholders (Honda, Toyota, BMW, Mercedes-Benz, GM and others) requested NHTSA harmonize the NCAP roadmap with other global programs, such as Euro NCAP, with appropriate objective test procedures and evaluations tailored to the U.S. market. Industry stakeholders stated that test procedures to evaluate new technologies should be objective, measurable, repeatable, and harmonized with other global NCAP test procedures where possible. Commenters noted that harmonizing the NCAP roadmap with global NCAPs will introduce safety technologies to U.S. consumers more quickly at reduced cost to consumers and manufacturers.

Commenters encouraged NHTSA to establish regularly scheduled opportunities for stakeholder engagement and collaboration to develop the NCAP roadmap. Auto Innovators suggested establishing a representative advisory panel with annual discussions between NHTSA and stakeholders to help prioritize initiatives in the NCAP roadmap and establish timelines for the roadmap. Commenters also suggested updating the NCAP roadmap every three to five years depending on the current field data, available countermeasures, and effectiveness and safety implications of the available countermeasures.

Auto Innovators and its members requested that NHTSA align NCAP initiatives with relevant ongoing regulatory actions. Industry stakeholders recommended ensuring consistency between NCAP and planned FMVSS where possible. Specifically, they requested that, similar to how the existing NCAP is structured for

crashworthiness, FMVSS should set the baseline standard for vehicle performance, with NCAP requirements evaluating safety at a level either equal to, or above, the baseline. Safety advocates stated that vehicle safety standards that save lives outside the vehicle should not be left to consumer choice. For example, commenters stated that new NCAP items, such as better headlamps, redesigned hoods and bumpers, and direct visibility should be included in FMVSS.

Commenters supported NHTSA's four prerequisites for inclusion of items into NCAP. However, industry stakeholders also requested that the roadmap include items for removal from NCAP for various reasons such as a parallel regulation already addressing the same target population.

Industry stakeholders expressed concern that certain technologies such as alcohol ignition and seat belt interlocks may not be appropriate to include in or show effectiveness through NCAP. The stakeholders further explained that certain consumers may not voluntarily seek this type of technology in a vehicle purchase, and it may be difficult to convince the average consumer who refrains from driving under the influence or driving unrestrained that these technologies directly benefit them. In contrast, several safety advocates and organizations encouraged NHTSA to include testing in NCAP to mitigate the risk of alcohol-impaired driving, and limit distracted driving caused by infotainment systems and other sources.

Commenters requested that NCAP updates include the latest safety technologies, including: rear cross-traffic warning and rear automatic braking, intersection safety assist, intelligent speed assist, driver monitoring systems (DMS), alcohol detection systems, and human-machine interaction. Several commenters suggested including rear seat child passenger detection and alert systems, along with bicyclist and motorcyclist crash avoidance and crash protection systems, similar to that in Euro NCAP. Several commenters also expressed concerns about vehicles with higher hoods and reduced direct visibility of pedestrians in the vicinity of these vehicles for the driver, requesting an evaluation of driver direct visibility in NCAP.

Safety advocates and industry stakeholders requested including advanced lighting technologies, such as automatic high beam and high beam assist systems, in NCAP. Several commenters also requested enhanced testing scenarios in future NCAP

updates for all types of crash avoidance technologies to reflect less-than-ideal conditions like low light, glare, and fog.

Several commenters requested expanding the range of test dummies in crash tests to include dummies representing female occupants and older adults in driver and passenger seating positions. Additionally, commenters suggested that vehicle safety technology testing consider such factors as: micro-mobility, wheelchair users, bicyclists, and diverse human variations including size, shape, and skin color. Commenters also requested the use of advanced crash test dummies, (e.g., THOR–50M and WorldSID–50M), and the use of additional crash test conditions such as frontal oblique impacts and rear seat occupant protection.

Several commenters requested the inclusion of vehicle communication systems (vehicle-to-vehicle and vehicle-to-everything technologies), while other commenters expressed cybersecurity and privacy concerns with such systems. Some commenters focused on post-crash safety and requested hazard lighting for disabled vehicles and automatic crash notification.

#### Response to Comments and Agency Decisions

NHTSA has developed a final roadmap for updating NCAP in multiple phases for the period 2024 through 2033. The mid-term initiatives in the roadmap span the period 2024–2028 and the long-term items span the period 2024–2033. The NCAP roadmap in this decision notice includes four phases for each NCAP initiative, along with a completion milestone for each phase. The four phases are: (1) Research phase if applicable, (2) Request for comment (RFC) phase, (3) Final decision phase, and (4) Implementation phase.

The Research phase may include field data analysis, test procedure and performance criteria development, and evaluation of vehicle technologies and designs. The Research phase may also include rulemaking to federalize tools used in the test procedures, such as new crash test dummies. The RFC phase includes the development of the proposal and publication of the RFC notice. The Final decision phase includes review of comments received, responding to the comments, and the publication of the final decision notice. The final test procedures and evaluation criteria will be provided in the final decision notice.

Depending on the comments received, there could be additional research necessary between the RFC phase and Final decision phase. There could also be overlap between the Research phase

with the RFC and Final decision phases to conduct supplementary research and draft and publish research reports supporting the NCAP notice. The Implementation phase generally begins one to two calendar years after the publication of the Final decision notice.

While timing details are provided in the roadmap, NHTSA notes that some of the milestone dates may need to be changed in the future, as the completion of action and subsequent implementation dates are highly dependent upon the notice and comment process. NHTSA plans to update the NCAP roadmap approximately every four years, with timelines updated accordingly.

NHTSA asserts that the notice and comment process, which seeks input from the public on updates to NCAP, works well and effectively. Thus, the Agency intends to continue to use this method to solicit input from the public on updates to NCAP. The Agency may also consider a stakeholder meeting on updating NCAP before an update to the roadmap is released.

NHTSA will continue to monitor vehicle technologies and field data to select appropriate technologies and vehicle features to address safety needs. As requested by commenters, NHTSA will consider appropriate areas for harmonizing with other global programs such as Euro NCAP. In evaluating whether harmonization is appropriate, the Agency will assess existing procedures for updates to improve objectivity and ensure test procedures are representative of real-world crash conditions in the U.S. The Agency will also ensure any proposed tests can be used on U.S. vehicles to assess safety performance, and that the tests will evaluate technologies and vehicle designs addressing a U.S. safety need.

This roadmap outlines NHTSA's plans to update NCAP in the following three safety programs: crashworthiness, crash avoidance, and VRU safety. The NCAP rating system will consider systems that could include any of the following combinations: (1) distinct ratings for each of the safety programs; (2) a safety rating that combines the three distinct ratings; (3) other options suggested by commenters and consumers. Future updates to the roadmap could include additional safety programs, evaluation of new technologies and vehicle design features, and enhanced evaluation of vehicle technologies and designs currently in NCAP. As described in its March 2024 response to GAO

recommendations,<sup>445</sup> NHTSA is focused on reducing fatality and injury risk for all motor vehicle occupants and addressing identified disparities expeditiously. NHTSA is taking several steps to address sex-based disparities in motor vehicle crash outcomes. Regarding requests for the use of expanded range of advanced crash test dummies and test surrogates, NHTSA developed and published a detailed plan on the development and implementation of advanced crash test dummies. This plan discusses the Agency's efforts to address the limitations of NHTSA's current test dummies to provide information relative to certain demographic groups, such as female and elderly vehicle occupants, and certain body regions, such as the lower extremities. NHTSA plans to incorporate advanced dummies into NCAP crash tests when the research is completed, necessary tools are available for implementation, and they meet the criteria for inclusion in NCAP. For example, since NHTSA has efforts underway to include the advanced 50th percentile male dummy, THOR–50M, into Federal regulation, the mid-term roadmap initiatives include using the THOR–50M in NCAP frontal impact crash tests. Since research is still underway regarding the advanced 5th percentile female dummy, THOR–05F, the NCAP long-term roadmap initiatives include adding the THOR–05F in frontal impact crash tests.

Consistent with standard practice, NHTSA conducts ongoing evaluation of technological advances in anthropomorphic test devices available in global and domestic markets to determine whether the Agency should include those devices in NCAP and will continue to do so with respect to anthropomorphic test devices that would help address the identified sex-based disparities.

While NHTSA primarily plans to update NCAP with new technologies and vehicle countermeasures, it will also consider removing existing evaluation programs found redundant due to regulations or that no longer effectively incentivize safety improvements.

The roadmap outlined in this decision notice takes into consideration the aforementioned efforts, the input received from all stakeholders on the potential updates to NCAP, the readiness of the technologies, safety

<sup>445</sup>NHTSA Advanced Anthropomorphic Test Devices Development and Implementation Plan, March 2024, <https://www.nhtsa.gov/sites/nhtsa.gov/files/2024-04/NHTSA-Advanced-Anthropomorphic-Test-Devices-Development-Implementation-041624-v1-tag.pdf>.

potential, and the availability of objective and representative test procedures that can be applied to the U.S. vehicle fleet. NHTSA's NCAP roadmap for mid-term and long-term updates to the program are shown in Figures 18 and 19, respectively. This roadmap represents the current state of knowledge, and any safety opportunity or technology not included in this roadmap was omitted because it did not meet the four prerequisites for inclusion in NCAP at this time. In the next update to the roadmap, the addition of other technologies or safety programs would be subject to NHTSA's four prerequisites for inclusion in NCAP and the appropriateness of the technology or opportunity for a consumer information program.<sup>446</sup>

In general, the implementation timing of an update in NCAP ranges from 2 to 4 years from the time of publication of an RFC notice announcing the proposed update.

#### A. Mid-Term Updates to NCAP (2024–2028)

##### 1. Updates to the Crash Avoidance Program

In the near-term, NHTSA plans to finalize and implement the four additional ADAS technologies proposed in the 2022 NCAP RFC (LKA, BSW, BSI, and PAEB). NHTSA will identify vehicles with these recommended technologies by way of check marks on the NHTSA website starting in the fourth quarter of 2025 with model year 2026 vehicles. Until a crash avoidance rating system is developed and implemented, the check mark on the NHTSA website will remain the primary way of notifying consumers of available crash avoidance technologies meeting NHTSA's system performance criteria.

NHTSA plans to complete research on rear automatic braking (RAB)<sup>447</sup> in 2024 and plans to evaluate RAB systems in NCAP starting in the fourth quarter of 2027 with model year 2028 vehicles.

<sup>446</sup> Though various commenters requested V2X technology be included in NCAP, NHTSA has not included it in the roadmap because of uncertainties in the deployment of cellular V2X technologies, the research needed to determine the safety potential of these technologies in light of other emerging technologies, including AEB for intersection crashes, and the need to develop test procedures for evaluating V2X technologies, including cybersecurity.

<sup>447</sup> Though a number of commenters requested rear cross traffic warning (RCTW) be included in NCAP, NHTSA is not including evaluation of RCTW in NCAP at this time because the Agency's analysis of field data indicates that current RCTW systems have low safety benefits and are mainly associated with reduction in property damage crashes.

##### 2. Updates to the Crashworthiness Program

As noted in the March 2022 NCAP RFC notice, NHTSA plans to use advanced crash test dummies with enhanced biofidelity (human-like response to impact loads) and injury assessment capabilities in current crash testing and any additional crash tests considered for the program. Mid-term updates to NCAP's crashworthiness program include:

- Using the THOR–50M instead of the HIII–50M in the NCAP frontal impact crash tests.
  - Conducting a full-frontal rigid barrier crash test with the HIII–05F dummy in the driver seat.
    - Equity in crash outcomes, including female occupant safety, is a priority for NHTSA. Since the advanced 5th percentile female frontal impact test dummy, THOR–05F, is currently under evaluation and refinement, it is not yet ready for implementation in NCAP crash tests. The THOR–05F is in the long-term update to NCAP in this roadmap. Until the THOR–05F dummy is implemented in NCAP, NHTSA will use the current HIII–05F dummy for assessing small female occupant risk in the driver seating position.
      - Including a frontal oblique crash test using the THOR–50M.
      - Given the enhanced biofidelity and instrumentation of the THOR–50M, especially for lower extremity injury prediction, testing with the THOR–50M in the frontal oblique crash test would help reduce the high rates of leg, foot, and ankle injuries seen in both females and males.<sup>448</sup>
      - Replacing the ES–2re dummy with the WorldSID–50M dummy in the driver seat in the side impact Moving Deformable Barrier (MDB) crash test.
      - Including the SID–IIs chest and abdomen deflections to assess overall injury potential in both the MDB crash test and the side pole impact test.<sup>449</sup>
- NHTSA plans to implement the updated crashworthiness evaluation described above starting in the fourth

<sup>448</sup> Detailed analysis of field data suggests that when controlling for various factors, including crash speed and restraint use, female drivers have a higher risk of moderate lower extremity (leg and foot/ankle) injuries than male drivers in frontal crashes. Though the THOR–50M dummy is used for injury assessment, the countermeasures would also mitigate lower extremity injuries for 50th percentile and larger female occupants.

<sup>449</sup> This update would encourage countermeasures to reduce thoracic and abdominal injuries to small female occupants in side impact crashes. This is an interim upgrade to side impact protection for female occupants until the advanced 5th percentile female side impact test dummy, WorldSID–05F, is included in NCAP. The inclusion of WorldSID–05F in NCAP is a long-term update in this roadmap.

quarter of 2027 with model year 2028 vehicles. Implementation of the changes discussed will address comments received pertaining to the use of advanced crash test dummies, including those representing female occupants, as well as the incorporation of additional crash test conditions capturing frontal oblique impacts.

##### 3. Updates to the VRU Safety Program

As noted earlier, NHTSA plans to finalize the implementation of PAEB in the near term. NHTSA also plans to finalize in the near term the crashworthiness pedestrian protection proposed on May 26, 2023. The Agency will consider expanding the head impact test areas to include bicyclists' impact areas. NHTSA will include a check mark on the NHTSA website for PAEB and vehicle designs that meet the performance requirements in the NCAP crashworthiness pedestrian protection tests starting in the fourth quarter of 2025 with model year 2026 vehicles.

In response to commenters requesting protection for additional VRUs, NHTSA has expedited its research for bicyclists and motorcyclists, and is currently developing and evaluating test procedures specific to the vehicle fleet and the crash scenarios and injury profiles of bicyclists and motorcyclists in the U.S. NHTSA plans to include evaluation of AEB for mitigating crashes with bicyclists and motorcyclists (along path crash scenarios) starting in the fourth quarter of 2027 with model year 2028 vehicles.

Starting in the fourth quarter of 2024 with model year 2025 vehicles, NHTSA plans to provide consumers with information obtained from vehicle manufacturers related to whether a vehicle is equipped with direct sensing technology and an alert system to mitigate heatstroke to unattended children in vehicles. By providing this information, which will be made available in the "Safety Features" section of the ratings page on the NHTSA website, NHTSA is taking initial steps to address comments received pertaining to rear seat occupant protection.

##### 4. Rating Systems

NHTSA intends to develop and propose crash avoidance and VRU safety rating systems, an updated crashworthiness rating system, and an overall safety rating system for each vehicle and seek public comment. NHTSA plans to develop the crash avoidance, crashworthiness, VRU safety, and overall safety rating system with the flexibility to allow for the addition of ratings of new technologies and vehicle

safety countermeasures, or for the removal of existing ones in a way that would not result in significant change to the rating systems. The final decisions on the crash avoidance, crashworthiness, and VRU safety rating system including overall vehicle rating are planned for completion in the third quarter of 2025 (crash avoidance), in the first quarter of 2026 (crashworthiness, VRU, overall vehicle safety) and implementation in NCAP in the fourth quarter of 2027 beginning with model year 2028 vehicles.

NHTSA is currently conducting consumer research on approaches to display the crashworthiness, crash avoidance, VRU safety, and overall vehicle rating on the Monroney label. NHTSA plans to complete a rulemaking update to the Monroney label by the first quarter of 2026. NHTSA also plans to implement the new rating system, to include crashworthiness, crash avoidance, and VRU safety on the Monroney label and the NHTSA website, beginning in the fourth quarter of 2027 with model year 2028 vehicles.

#### *B. Long-Term Updates to NCAP (2024–2033)*

##### 1. Updates to the Crash Avoidance Program

NHTSA plans to include in NCAP the assessment of advanced lighting systems such as automatic driving beam (ADB), semi-automatic beam switching (SABS), and lower beam headlighting. NHTSA plans to implement the evaluation of advanced headlighting systems starting in the fourth quarter of 2030 with model year 2031 vehicles.

NHTSA will conduct research to assess AEB performance in intersection crash scenarios such as left turn across path and straight crossing path conditions. After needed research is completed, the Agency plans to consider AEB evaluation in these intersection crash scenarios for inclusion in NCAP, with possible implementation starting in the fourth quarter of 2031 with model year 2032 vehicles. NHTSA will also consider further enhancement to the current finalized AEB evaluations by including additional scenarios and conditions, with implementation starting in the fourth quarter of 2032 with model year 2033 vehicles.

The Agency is conducting research on enhanced assessment of LKA systems to include evaluation at higher speeds, curved path, and/or road edge detection scenarios. After the research is completed, NHTSA will consider these enhanced evaluations of LKA systems in NCAP, with possible implementation starting in the fourth quarter of 2030 with model year 2031 vehicles. NHTSA is postponing its research on opposing traffic safety assist technology due to low fitment of this technology in vehicles and will consider its inclusion in the next update of the roadmap.

NHTSA is researching various safe driving technologies, including driver monitoring systems to mitigate driver distraction and drowsy driving, and intelligent speed assist to mitigate crashes due to speeding. NHTSA will consider including intelligent speed assist in NCAP for occupant safety when the research on this technology is completed in 2028.<sup>450</sup> NHTSA is considering implementation of certain other safe driving technologies starting in the fourth quarter of 2031 with model year 2032 vehicles.

##### 2. Updates to the Crashworthiness Program

NHTSA is conducting research on the THOR–05F crash test dummy and is considering replacing the HIII–5F dummy in crash tests with the THOR–05F starting the fourth quarter of 2031 with model year 2032 vehicles. At that time, NHTSA also plans to evaluate rear seat occupant protection using the THOR–05F, which will seek to address comments received regarding this topic.<sup>451</sup>

NHTSA is still developing and evaluating the WorldSID–05F dummy and will consider its adoption into NCAP when research and rulemaking actions<sup>452</sup> are complete. The Agency is considering replacing the SID–IIs dummy with the WorldSID–05F dummy in NCAP tests starting in the fourth quarter of 2033 with model year 2034 vehicles.

As part of these efforts, NHTSA will also consider applying different injury criteria to data collected from the crash tests utilizing these new dummies to target performance thresholds that are more appropriate for older adults to address broader equity concerns.

##### 3. Updates to the VRU Safety Program

NHTSA plans to enhance AEB evaluation by including intersection crash scenarios (e.g., crossing path, left turn across path) for bicyclists and motorcyclists, with implementation starting in the fourth quarter of 2030 with model year 2031 vehicles. NHTSA will also consider further enhancement to the current finalized PAEB evaluations to incorporate additional test speeds, test scenarios, and VRUs (such as those representing wheelchairs, scooters, and diverse human attributes), with implementation starting in the fourth quarter of 2032 with model year 2033 vehicles.

NHTSA also plans to evaluate BSW and BSI to mitigate crashes with motorcyclists and bicyclists in multiple scenarios, with implementation starting in the fourth quarter of 2030 with model year 2031 vehicles.

NHTSA plans to evaluate and include the advanced pedestrian legform impactor (aPLI, a newer pedestrian legform impactor with upper body mass and enhanced injury assessment capabilities), to assess crashworthiness pedestrian protection instead of the current FlexPLI (a flexible pedestrian legform impactor which lacks upper body mass). This VRU safety program update will be implemented starting in the fourth quarter of 2029 with model year 2030 vehicles.

NHTSA is researching driver visibility to better understand the safety problem and scenarios associated with forward blind zones and front-over crashes to develop accurate and rigorous methods of evaluating driver's visibility. After the research is completed, NHTSA will consider inclusion of driver visibility in NCAP.

By pursuing these efforts, the Agency will continue to work towards protecting those inside and outside the vehicle, as encouraged by public comments.

NHTSA's NCAP roadmaps for mid-term and long-term updates to the program are shown in Figures 18 and 19, respectively. In these two figures, the timeframe of the research, RFC, and final decision phases are in calendar years. The start of the implementation phase, represented by a star, is with vehicle models of the proceeding calendar year.

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<sup>450</sup> Since NCAP is a consumer information program with voluntary participation by vehicle manufacturers, NHTSA needs to evaluate consumer acceptance of intelligent speed assist technology for improving occupant safety.

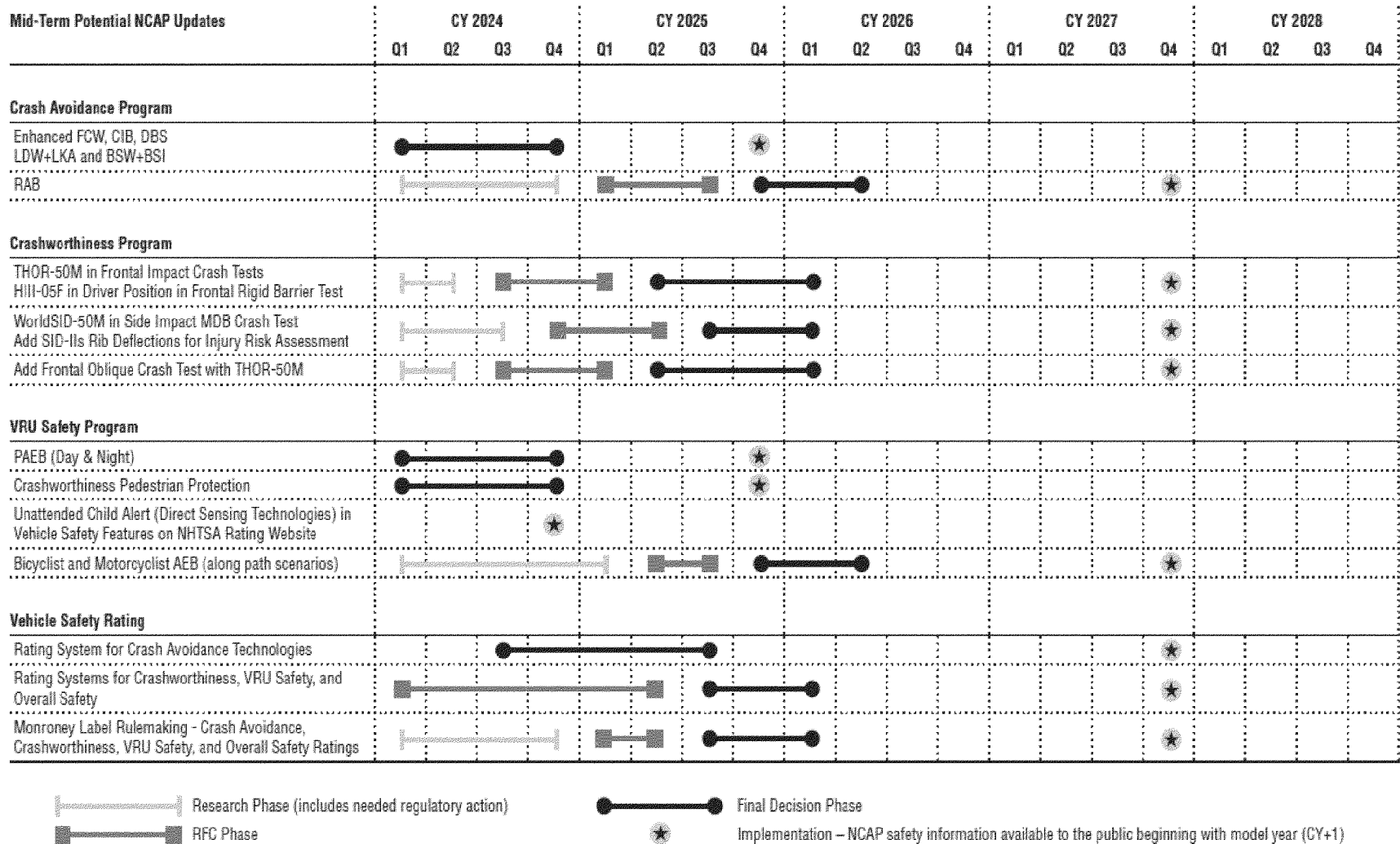
<sup>451</sup> While NHTSA has accelerated research on the THOR–05F dummy, uncertainties remain on federalizing the dummy and its implementation in crash testing. Therefore, NHTSA is considering its

inclusion in NCAP in the long-term phase of the roadmap.

<sup>452</sup> The corresponding rulemaking action is the inclusion of WorldSID–05F in Part 572.

Figure 18: Roadmap for Mid-Term Upgrades to NCAP

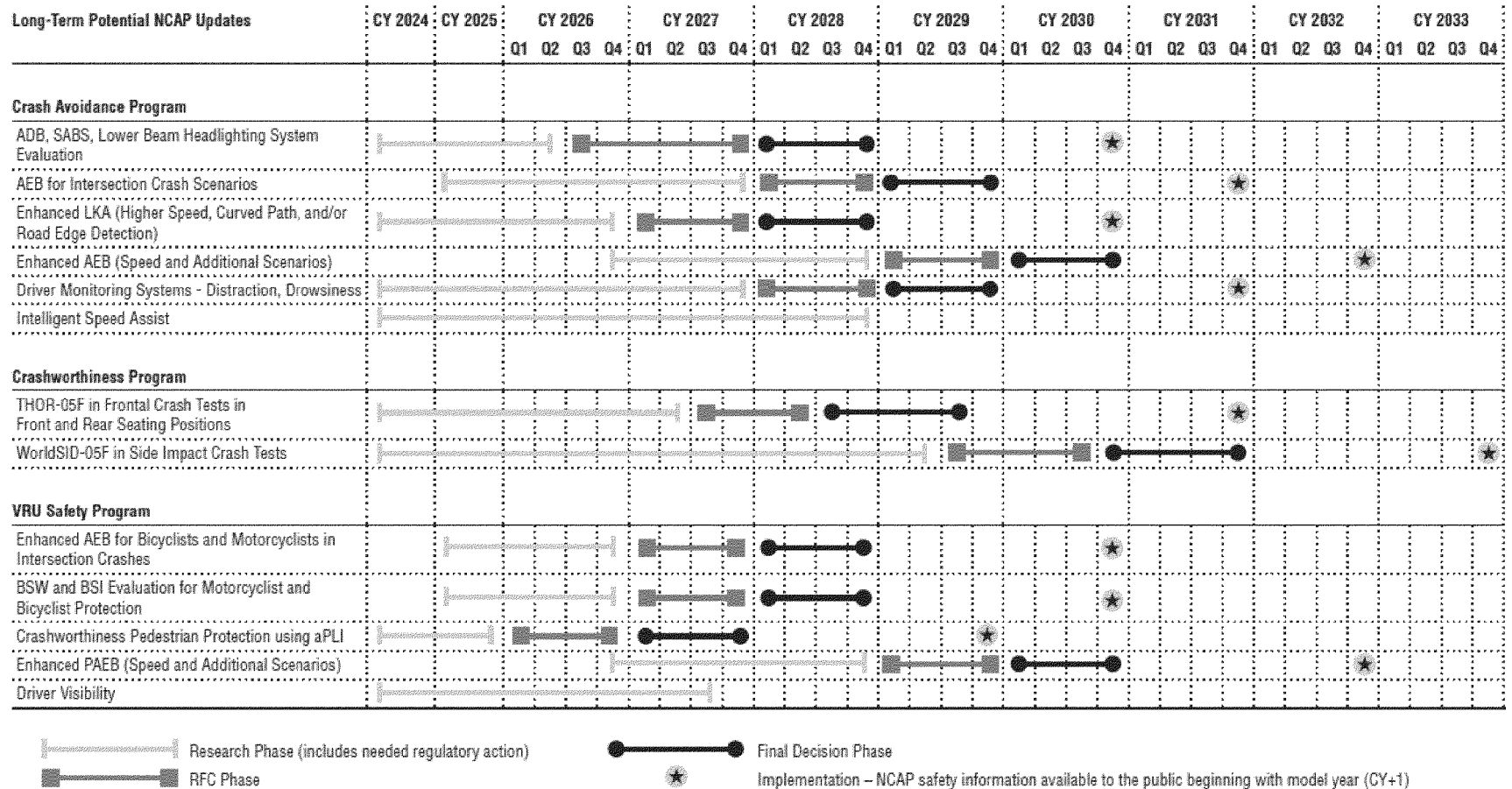
### Roadmap for Mid-Term Potential Updates to NCAP Evaluations





**Figure 19: Roadmap for Long-Term Upgrades to NCAP**

**Roadmap for Long-Term Potential Updates to NCAP Evaluations**



Research Phase (includes needed regulatory action)
  Final Decision Phase
  Implementation – NCAP safety information available to the public beginning with model year (CY+1)
  RFC Phase
  Implementation – NCAP safety information available to the public beginning with model year (CY+1)

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## X. Economic Analysis

The various changes in NCAP adopted in this final decision notice would enable the development of a new set of rating systems, which will expand the current rating system to include not only crashworthiness but also crash avoidance information and improve consumer awareness of ADAS safety features as well as encourage manufacturers to accelerate their adoption. This increased information to consumers and potential for accelerated adoption of ADAS would drive any economic and societal impacts that result from these changes and are thus the focus of this discussion of economic analysis. Hence, the Agency has considered the potential economic effects for ADAS technologies proposed for inclusion in NCAP and the potential benefit of introducing a rating system for ADAS technologies.

Unlike crashworthiness safety features, where safety improvements are attributable to improved occupant protection when a crash occurs, the impact that ADAS technologies have on fatality and injury rates is a direct function of their effectiveness in preventing crashes or reducing the severity of the crashes they are designed to mitigate. This effectiveness is typically measured by using real-world statistical data, laboratory testing, or Agency expertise.

With respect to vehicle safety, the Agency concludes, as discussed in detail in this notice, the adopted ADAS technologies have the potential to reduce vehicle crashes and crash severity. As cited in the RFC notice, researchers have conducted preliminary studies to estimate the effectiveness of ADAS technologies. Although these studies have been limited to certain models or manufacturers, which may not represent the entire fleet, they illustrate how these systems can provide safety benefits. Thus, although the Agency does not have sufficient data to determine the monetized safety impacts resulting from these technologies in a way similar to that frequently done for mandated technologies, when compared to the future without the proposed update to NCAP, NHTSA expects that these changes would likely have substantial positive safety effects by promoting earlier and more widespread deployment of these technologies.

NCAP also helps address the issue of asymmetric information (*i.e.*, when one party in a transaction is in possession of more information than the other), which can be considered a market failure. Regarding consumer information, the

introduction of an upcoming new ADAS rating system is anticipated to provide consumers additional vehicle safety information (*e.g.*, rating based on ADAS performance and capability as well as the types of ADAS in vehicles) as opposed to the information provided in the current program (*e.g.*, check mark based on ADAS performance as pass/fail) to help them make more informed purchasing decisions by better presenting the performance of different ADAS technologies. The future ADAS rating would increase consumer awareness and understanding of the safety benefits in these technologies, and, in turn, incentivize vehicle manufacturers to offer the ADAS technologies that lead to higher ratings across a broader selection of their vehicles. Furthermore, as these ADAS technologies mature and become more reliable and efficient, a large portion of vehicles equipped with such systems would achieve higher ADAS ratings, and in turn consumers would have an increasing number of safer vehicles to choose from. There is an unquantifiable value to consumers in receiving accurate and comparable information about the safety performance of those technologies among manufacturers, makes, and models.

IHS/HLDI predicted that the number of vehicles equipped with ADAS technologies, including blind spot warning and lane departure warning, will increase substantially from 2020 to 2030 and reach near full market penetration in 2050.<sup>453</sup> Although the Agency has limited data on costs of ADAS technologies to consumers, assuming consumer demand for safety remains high, the future ADAS rating system would likely accelerate the full adaptation of the ADAS technologies included in this notice. Nevertheless, the Agency does not have sufficient data, such as unit cost and information on how quickly full adaptation might be reached once an ADAS rating system is implemented, to predict the net increase in cost to consumers with a high degree of certainty.

## XI. Appendix

The Agency's final decision for AEB and PAEB testing in NCAP is generally similar to the standards for those technologies contained in the May 9, 2024, final rule establishing FMVSS No. 127. The two standards are based on the Agency's separate authorities and are intended to serve the distinct purposes of NCAP and the FMVSS. The Agency

provides the below summary to assist readers in understanding the key areas of similarity and difference.

With regard to vehicle AEB, the minimum and maximum subject vehicle (SV) test speeds and principal other vehicle (POV) test speeds for lead vehicle stopped (LVS), lead vehicle moving (LVM), and lead vehicle decelerating (LVD) crash imminent braking (CIB) and dynamic brake support (DBS) tests (as applicable) are the same in both NCAP and FMVSS No. 127, except for the minimum SV test speed for the LVS CIB test. For this LVS CIB test, the Agency has prescribed a minimum SV test speed of 40 kph (24.9 mph) for NCAP, whereas a 10 kph (6.2 mph) minimum speed is specified in FMVSS No. 127. Further, both FMVSS No. 127 and NCAP impose a test passing criterion of "no contact" and stipulate conducting only one trial per test condition. Other specifications pertaining to test conduct such as SV accelerator pedal release timing and manual brake application timing are also identical for NCAP and FMVSS No. 127.

There are various differences that exist with respect to the testing methods. For a given NCAP test scenario, the Agency will begin testing at the minimum prescribed test speed and will increase the test speed in 10 kph (6.2 mph) increments until the maximum test speed is reached. In comparison, FMVSS No. 127 permits testing at any speed within the speed range defined by the minimum and maximum test speeds. Similarly, for the LVD tests, NCAP and FMVSS No. 127 both establish minimum and maximum headways between 12 and 40 m (39.4 and 131.2 ft.) and POV deceleration between 0.3 and 0.5g, but NCAP will only conduct tests at those minimum and maximum values, while the FMVSS No. 127 permits testing at any headway within the range.

In addition, while both FMVSS No. 127 and NCAP will evaluate FCW functionality during AEB testing, and the requirements for the timing of the FCW alert as well as the necessary alert modalities (*i.e.*, visual and auditory signals) are identical, FMVSS No. 127 imposes additional FCW alert specifications, including auditory signal intensity and visual symbol color and location requirements. Further, FMVSS No. 127 allows for a wider variety of vehicle test devices, as any device that complies with certain specifications defined in ISO 19206-3:2021<sup>454</sup> is

<sup>453</sup> Highway Loss Data Institute. (2023). Predicted availability of safety features on registered vehicles—a 2023 update. *Loss Bulletin*, 40(2).

<sup>454</sup> "Road vehicles—Test devices for target vehicles, vulnerable road users and other objects, for assessment of active safety functions—Part 3:

permitted, whereas the Agency has adopted a particular device (Revision G of the ABD GVT) that meets the requirements of the ISO standard for NCAP's AEB testing. Finally, the pass-through false positive test is included in FMVSS No. 127 but has not been adopted for NCAP.

Many of the PAEB testing requirements adopted for FMVSS No. 127 are also identical to those adopted for NCAP. In particular, the same test scenarios and pedestrian test mannequins are specified for the two initiatives, and the mannequin travel speeds align for all test conditions. Minimum and maximum SV speeds are also the same for test conditions S1a, S1b, S1e, and S4c during daylight testing and for S1b and S4c during darkness testing.

For other test conditions, though, the minimum and maximum SV travel speeds for the FMVSS and NCAP do not align. In particular, for daylight testing,

Requirements for passenger vehicle 3D targets, Edition 1, 2021–05.”

NCAP imposes an upper test speed of 60 kph (37.3 mph) for the S1d test condition, whereas FMVSS No. 127 has established an upper test speed of 50 kph (31.1 mph). Similarly, for S4a, NCAP has adopted a maximum test speed of 60 kph (37.3 mph), whereas 55 kph (34.2 mph) has been adopted in FMVSS No. 127. For darkness testing, NCAP has established a maximum test speed of 60 kph (37.3 mph) for the S4a test condition, whereas FMVSS No. 127 specifies an upper test speed of 55 kph (34.2 mph) for this test condition. FMVSS No. 127 has also imposed 65 kph (40.3 mph) as the upper test speed for S4c, while NCAP has adopted a maximum test speed of 60 kph (37.3 mph) for this test condition.

Other differences between FMVSS No. 127 and NCAP's PAEB testing requirements exist for darkness testing. While NCAP, like FMVSS No. 127, will require testing in darkness, NCAP will not conduct separate performance assessments for both the SV's lower and upper beam headlamps and, instead, will only engage the vehicle's lower

beams. Furthermore, FMVSS No. 127 does not require darkness testing for PAEB test conditions S1a, S1d, and S1e, whereas such testing is specified for NCAP.

The overall test requirements and test conduct for PAEB are also in general alignment, as both FMVSS No. 127 and NCAP include a passing criterion of “no contact” and stipulate conducting only one trial per test condition. As with vehicle AEB, though, for a given NCAP test scenario, the Agency will begin testing at the minimum prescribed test speed and will then increase the test speed in 10 kph (6.2 mph) increments until the maximum test speed is reached, while FMVSS No. 127 permits testing at any speed within the speed range.

Issued in Washington, DC, under authority delegated in 49 CFR 1.95 and 501.

**Adam Raviv,**

*Chief Counsel.*

[FR Doc. 2024–27447 Filed 12–2–24; 8:45 am]

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December 3, 2024

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Part III

The President

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Proclamation 10865—Thanksgiving Day, 2024



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# Presidential Documents

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Title 3—

Proclamation 10865 of November 27, 2024

The President

Thanksgiving Day, 2024

**By the President of the United States of America****A Proclamation**

This Thanksgiving, as families, friends, and loved ones gather in gratitude, may we all celebrate the many blessings of our great Nation.

Thanksgiving is at the heart of America's spirit of gratitude—of finding light in times of both joy and strife. The Pilgrims celebrated the first Thanksgiving to honor a successful harvest, made possible by the generosity and kindness of the Wampanoag people. On the way to Valley Forge, as General George Washington and his troops continued the fierce struggle for our Nation's independence, they found a moment for Thanksgiving. And amid the fight to preserve our Union during the Civil War, President Abraham Lincoln established Thanksgiving as a national holiday, finding gratitude in the courage of the American people who sacrifice so much for our country.

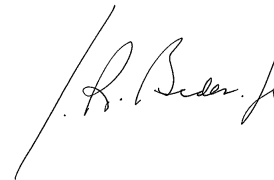
We are a good Nation because we are a good people. The First Lady and I remain inspired by the everyday Americans who lift this country up and push us forward. Today, so many are among their family and friends, celebrating the love that binds them and creating new traditions that will carry on for generations. To anyone with an empty seat at the dinner table, grieving the loss of a loved one, the First Lady and I hold you in our hearts and prayers.

America is a Nation of promise and possibilities—and that is because, every day, ordinary Americans are doing extraordinary things. Our service members and veterans have given all, risked all, and dared all to keep our Nation free. Our first responders, firefighters, and police officers risk their lives every day to keep the rest of us safe. I can see the best of America in them and in our workers and union leaders, public servants and teachers, doctors and scientists, and all who give their heart and soul to ensuring people are treated with dignity and respect. And I find hope in our Nation's families, who sacrifice so much to achieve the American Dream and build a future worthy of our highest aspirations.

This Thanksgiving—the last one I will declare as President—I express my gratitude to the American people. Serving as President has been the honor of a lifetime. America is the greatest country on Earth, and there is so much to be grateful for. May we celebrate all that unites us—because there is nothing beyond our capacity if we do it together.

NOW, THEREFORE, I, JOSEPH R. BIDEN JR., President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim Thursday, November 28, 2024, as a National Day of Thanksgiving. I encourage the people of the United States of America to join together and give thanks for the friends, neighbors, family members, and communities who have supported each other over the past year in a reflection of goodwill and unity.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-seventh day of November, in the year of our Lord two thousand twenty-four, and of the Independence of the United States of America the two hundred and forty-ninth.

A handwritten signature in black ink, appearing to read "R. Biden Jr.", written in a cursive style.



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