

GAO

Report to the Ranking Member,
Subcommittee on Environment and
Hazardous Materials, Committee on
Energy and Commerce, House of
Representatives

July 2005

ENVIRONMENTAL JUSTICE

EPA Should Devote More Attention to Environmental Justice When Developing Clean Air Rules



G A O

Accountability * Integrity * Reliability



Highlights of [GAO-05-289](#), a report to the Ranking Member, Subcommittee on Environment and Hazardous Materials, Committee on Energy and Commerce, House of Representatives

Why GAO Did This Study

Executive Order 12898 made achieving “environmental justice” part of the mission of the Environmental Protection Agency (EPA) and other federal agencies. According to EPA, environmental justice involves fair treatment of people of all races, cultures, and incomes. EPA developed guidance for considering environmental justice during the development of rules under the Clean Air Act and other activities.

GAO was asked to examine how EPA considered environmental justice during two phases of developing clean air rules: (1) drafting the rule, including activities of the workgroup that considered regulatory options, the economic review of the rule’s costs, and making the proposed rule available for public comment, and (2) finalizing the rule, including addressing public comments and revising the economic review. GAO reviewed the three clean air rules described in the next column.

What GAO Recommends

GAO recommends, among other things, that EPA improve workgroups’ ability to identify environmental justice issues and enhance the ability of its economic reviews to analyze potential environmental justice impacts. EPA disagreed with the recommendations because it believes it pays appropriate attention to environmental justice. GAO believes the recommendations are still valid.

www.gao.gov/cgi-bin/getrpt?GAO-05-289.

To view the full product, including the scope and methodology, click on the link above. For more information, contact John B. Stephenson at (202) 512-3841.

ENVIRONMENTAL JUSTICE

EPA Should Devote More Attention to Environmental Justice When Developing Clean Air Rules

What GAO Found

When drafting the three clean air rules, EPA generally devoted little attention to environmental justice. While EPA guidance on rulemaking states that workgroups should consider environmental justice early in this process, GAO found that a lack of guidance and training for workgroup members on identifying environmental justice issues may have limited their ability to identify such issues. In addition, while EPA officials stated that economic reviews of proposed rules consider potential environmental justice impacts, the gasoline and diesel rules did not provide decision makers with environmental justice analyses, and EPA has not identified all the types of data necessary to analyze such impacts. Finally, in all three rules, EPA mentioned environmental justice when they were published in proposed form, but the discussion in the ozone implementation rule was contradictory.

In finalizing the three clean air rules, EPA considered environmental justice to varying degrees. Public commenters stated that all three rules, as proposed, raised environmental justice issues. In responding to such comments on the gasoline rule, EPA published its belief that the rule would not create such issues, but did not publish the data and assumptions supporting its belief. Specifically, EPA did not publish (1) its estimate that potentially harmful air emissions would increase in 26 of the 86 counties with refineries affected by the rule or (2) its assumption that this estimate overstated the eventual increases in refinery emissions. For the diesel rule, in response to refiners’ concerns that their permits could be delayed if environmental justice issues were raised by citizens, EPA stated that the permits would not be delayed by such issues. Moreover, after reviewing the comments, EPA did not change its final economic reviews to discuss the gasoline and diesel rules’ potential environmental justice impacts. Finally, the portions of the ozone implementation rule that prompted the comments about environmental justice were not included in the final rule. Overall, EPA officials said that these rules, as published in final form, did not create an environmental justice issue.

Three Clean Air Rules

GAO reviewed EPA’s activities relating to three clean air rules issued between October 1999 and September 2004. These rules were selected because, of the 19 issued during this period that were deemed significant by EPA and the Office of Management and Budget, they were the only rules that mentioned environmental justice.

- **Gasoline rule** to reduce sulfur in gasoline, to reduce emissions from new vehicles (2000).
- **Diesel rule** to reduce sulfur in diesel fuel, to reduce emissions from new heavy-duty engines (2001).
- **Ozone implementation rule** to implement a new ozone standard (2004).

Source: GAO analysis of EPA data.

Contents

Letter

Results in Brief	1
Background	3
EPA Generally Devoted Little Attention to Environmental Justice in Drafting Three Rules	7
EPA Considered Environmental Justice to Varying Degrees in Finalizing Three Rules	10
Conclusions	16
Recommendations for Executive Action	23
Agency Comments and Our Evaluation	24

Appendixes

Appendix I: Information about the Three Final Clean Air Rules That We Examined	29
Appendix II: EPA's Consideration of Environmental Justice in the Drafting of Three Proposed Clean Air Rules	30
Workgroups Devoted Little Attention to Environmental Justice	32
Little Attention Was Devoted to Environmental Justice in the Economic Reviews	33
Proposed Rules Did Not Discuss Environmental Justice	33
Appendix III: Scope and Methodology	34
Appendix IV: Comments from the Environmental Protection Agency	35
GAO Comments	49
Appendix V: GAO Contact and Staff Acknowledgments	52

Tables

Table 1: Changes in Estimated Emissions of National Air Pollutants, 1995-2004	8
Table 2: EPA Guidance for Discussion of Executive Orders in Proposed Rules	15
Table 3: Estimated Potential Changes in Selected Emissions in 2007 Resulting from the Gasoline Rule in Counties with Refineries	18
Table 4: Information about Three Proposed Clean Air Rules	31

Contents

This is a work of the U.S. government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



United States Government Accountability Office
Washington, D.C. 20548

July 22, 2005

The Honorable Hilda L. Solis
Ranking Member
Subcommittee on Environment and
Hazardous Materials
Committee on Energy and Commerce
House of Representatives

Dear Ms. Solis:

Low-income and minority populations are disproportionately exposed to air pollution and other environmental risks, according to Environmental Protection Agency (EPA) studies. For example, a 1991 study cited by EPA found that African Americans and Hispanics were more likely to be exposed to ground-level ozone and several other air pollutants known to cause health problems. In 1992, EPA established an office to address environmental pollution affecting racial minorities and low-income communities. Efforts to identify and address disproportionately high and adverse impacts on specific populations and communities are commonly referred to under the term “environmental justice.”

In 1994, President Clinton issued Executive Order 12898, which stated that EPA and other federal agencies, to the greatest extent practicable and permitted by law, shall make achieving environmental justice part of their missions by identifying and addressing, as appropriate, the disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. To implement the executive order, EPA developed guidance for incorporating environmental justice into specific program areas. One such program area is EPA’s implementation and enforcement of the Clean Air Act, a comprehensive law intended, in part, to control emissions that have been found to harm human health. To implement the act, EPA—among other things—develops, implements, and enforces rules on the amount of various pollutants that may be emitted by mobile sources (such as cars, trucks, and other vehicles) and stationary sources (such as power plants and refineries).

According to EPA guidance, environmental justice and other specific factors are to be considered at various points during the development of a rule. For example, to draft a proposed rule, EPA establishes a workgroup, comprised of officials from relevant offices within the agency, to consider

various options and typically recommend one option to managers. EPA guidance, issued in 1994 and 2004, reinforced Executive Order 12898 by suggesting that environmental justice be considered early in the rulemaking process.¹ Also, the Clean Air Act, other statutes, and executive orders require EPA to prepare an economic review of the proposed rule's costs and other impacts. EPA guidance specifies that this review will consider the rule's potential total costs to society (which could include adverse health effects due to exposure to pollutants), including the distribution of those costs among various social and economic groups. Finally, after the approval of all relevant offices within EPA, the proposed rule is published in the *Federal Register*, and a public comment period is opened to solicit formal public comment on the proposed rule. Further, the Clean Air Act requires EPA to allow the submission of public comments, and the final rule must be accompanied by a response to each of the significant comments. Significant public comments that raise environmental justice issues would be addressed along with any other significant public comments on the proposed rule. After considering formal public comments and sometimes changing the economic review and the rule as a result, EPA publishes the final rule in the *Federal Register* and on the Internet. After a specified time period, the rule goes into effect.

In this context, you asked us to determine how EPA considered environmental justice in both drafting and finalizing significant clean air rules between fiscal years 2000 and 2004. Drafting the rule included initial reports flagging potential issues for senior management, activities of the workgroups that considered regulatory options, the economic review of the proposed rule's costs, and making the proposed rule available for public comment. Finalizing the rule included addressing public comments, revising the economic review, and publication of the final review in the *Federal Register*.

To address these objectives, we analyzed EPA documents and held discussions with EPA officials in Washington, D.C.; Anne Arbor, Michigan; and Research Triangle Park, North Carolina, relating to three final clean air rules that were considered significant by EPA and the Office of Management and Budget (OMB) and were finalized between October 1, 1999, and September 30, 2004. In order to identify the rules we would review in detail, we initially analyzed a database of clean air rules finalized

¹EPA, Action Development Process (June 30, 2004); Memorandum, Initiation of EPA's New Regulatory and Policy Development Process (July 1994).

between fiscal years 2000 and 2004. We then selected rules for review (1) that involved the EPA Administrator's office or extensive cross-agency involvement and (2) that were sent to OMB for review. Rules are sent to OMB for review if their expected annual costs or benefits exceed \$100 million, if they raise novel legal or policy issues, or if they may interfere with actions undertaken by another federal agency or a state, local, or tribal government. We examined two mobile source rules: one rule addressed, among other things, the sulfur content of gasoline used in cars and similar vehicles (the gasoline rule, promulgated in 2000), and a second rule addressed, among other things, the sulfur content of diesel fuel used in trucks and similar vehicles (the diesel rule, promulgated in 2001). We also examined the rule for implementing the 8-hour ozone national ambient air quality standard (the ozone implementation rule, promulgated in 2004). A more detailed description of these rules can be found in appendix I. We also selected these rules because, of the 19 clean air rules finalized during this period that met our criteria, they are the only 3 that included the terms "environmental justice" or "Executive Order 12898" in the final rule. We believed that compared with the other 16 rules, these 3 were more likely to include an in-depth consideration of environmental justice by EPA. Therefore, these 3 rules are not likely to be representative of all 19 rules.

In addition, we are including information in this report on how EPA considered environmental justice in drafting three proposed rules of substantial congressional interest, detailed in appendix II. We did not review how EPA considered environmental justice when finalizing these rules because they had not been finalized when we completed our initial fieldwork. Additional details about our scope and methodology are provided in appendix III. We conducted our work between July 2004 and May 2005 in accordance with generally accepted government auditing standards.

Results in Brief

We found that in four phases of drafting three significant clean air rules between fiscal years 2000 and 2004, EPA generally devoted little attention to environmental justice. First, initial reports used to flag potential issues for senior management did not address environmental justice. Second, although EPA guidance suggests that workgroups should consider ways to build in environmental justice provisions early in the rulemaking process, there is reason to question whether this occurred for the three rules we examined. Specifically, the chairs of two workgroups said they did not consider environmental justice, although other workgroup members said that it was considered. Members of the third workgroup said they did

consider environmental justice, but they could not provide us with details on how they did so. Regardless of the extent of discussions, we identified several factors that could have limited the workgroups' ability to identify potential environmental justice issues. For example, workgroup members received no guidance on how to identify potential environmental justice problems in the drafting of a rule and received little, if any, training about environmental justice.

Third, although EPA officials told us that for the proposed rules, their economic reviews—which are intended to inform decision makers of the social consequences of the rules—considered environmental justice, we found that the reviews for the proposed gasoline and diesel rules did not include environmental justice analyses. Moreover, EPA has not identified all of the types of data necessary to perform such an analysis. Finally, in publishing the proposed rules (an opportunity for EPA to explain how it considered environmental justice), EPA mentioned environmental justice in all three cases, but the discussion was contradictory in one case. Specifically, the proposed ozone implementation rule stated in one section that it would not raise any environmental justice issues. However, in another section, the rule specifically invited comments on an option to concentrate commercial and residential growth, which it recognized might raise environmental justice concerns. The proposed gasoline rule stated that environmental justice is an important economic dimension to consider, but it did not describe whether or how it was considered. In a section on environmental justice, the proposed diesel rule noted that it would improve air quality across the country and could be expected to mitigate environmental justice concerns about diesel emissions in urban areas.

We found that, in three phases of finalizing the three clean air rules between fiscal years 2000 and 2004, EPA considered environmental justice to varying degrees. First, public commenters raised concerns about environmental justice in connection with all three rules as proposed, and EPA generally responded to these comments, although not always thoroughly. For example, EPA received comments that refinery emissions would increase under the gasoline rule, and that such an increase would create environmental justice issues. EPA responded that an increase in refinery emissions was possible but—because of projected reductions in vehicle emissions—overall emissions near refineries were unlikely to increase. However, EPA did not explain the basis for this response. Specifically, EPA did not publish its estimate that potentially harmful emissions would increase in 26 of the 86 counties with refineries affected

by the rule, nor did it publish its assumption that this estimate overstated the eventual increases in refinery emissions. For the diesel rule, where similar concerns were raised that refinery emissions would increase, EPA conducted no additional analyses. In response to refiners' concerns that their permits could be delayed if environmental justice issues were raised by citizens, EPA stated that it did not believe the permits would be delayed by such issues. For the ozone implementation rule, EPA received comments on environmental justice, but these comments did not relate to the provisions included in the final rule. Second, after reviewing public comments, EPA made no changes to how potential environmental justice impacts were addressed in the final economic reviews, and thus the final economic reviews generally did not provide decision makers with an environmental justice analysis. Finally, in publishing the three rules in final form, which was another opportunity for EPA to explain how it considered environmental justice, EPA stated explicitly that one rule would not create an environmental justice issue. However, EPA did not explicitly state whether the other two rules would create an environmental justice issue, although the preambles to both rules discussed the mitigation of potential environmental justice effects. EPA officials told us that they believed that none of the rules did create environmental justice issues.

We recommend in this report that the EPA Administrator, among other things, improve the workgroups' ability to identify environmental justice concerns—for example, by providing better guidance and training—and enhance the ability of its economic reviews to analyze potential environmental justice impacts.

We received comments from EPA in a letter dated June 10, 2005 (see app. IV). First, EPA expressed the view that its rules have resulted in better air quality nationally. Second, EPA stated that in examining the agency's process for considering environmental justice, we asked the wrong question and that we should have focused on the outcome of the rulemaking process—the rules themselves. Finally, EPA stated that our evidence of how it considered environmental justice during the development of the three final rules did not support our conclusions and recommendations, and it provided detailed information about the efforts it took relating to environmental justice for the three final rules.

We question the relevance of the information provided on air quality nationally and disagree with EPA's other two points. First, EPA's statements that clean air rules have resulted in better air quality nationally at some level misses the point. Executive Order 12898 calls on agencies to identify

and address the disproportionately high and adverse effects of its programs, policies, and activities on specific groups. For example, such groups could include those who live near refineries and may be exposed to increased emissions as a result of the two mobile source rules, but EPA provided no information on such groups. Second, EPA suggested that it would have been more appropriate for us to look at the outcomes of its efforts than at the process that produced the outcomes. We agree with EPA that outcomes are important, but it is not yet clear whether the rules we examined will address environmental justice issues effectively because the rules are being implemented over the next several years. It is also important to examine the process that led to the rules—as we did. The various process steps are intended to help ensure that EPA’s activities during the many phases of drafting and finalizing all rules are efficiently and effectively focused on achieving the desired outcomes.

Third, although EPA stated that our evidence did not support our conclusions and recommendations, it did not challenge the accuracy of the information we provided on how it considered environmental justice during the many phases of developing the three final rules discussed in the body of our report and the three proposed rules discussed in appendix II. While EPA provided detailed information on certain activities and the rationale for undertaking them, our report already discussed nearly all of these activities. For example, EPA noted at length its efforts, after drafting the gasoline rule, to hold discussions with environmental justice and other groups on issues relating to permits that refiners would need if they increased their emissions to comply with the rule. We already acknowledged these efforts in our report. However, EPA’s efforts at this stage do not mitigate the fact that it devoted little attention to environmental justice up to that point, or the fact that discussions with affected groups while beneficial, do not offset the effects of possible increases in refinery emissions on these groups. EPA is essentially relying on state and local governments to deal with environmental justice concerns as they implement the gasoline and diesel rules at the refinery level, even though the executive order does not apply to state or local governments, and absent specific state or local law, they have no obligation to consider environmental justice when issuing permits. In addition, the three final rules were selected in part because they mentioned environmental justice and therefore should have showcased EPA’s efforts to consider environmental justice. Thus, we continue to believe that the evidence we provided supports our conclusions and recommendations.

Background

Even before Executive Order 12898 was issued in 1994, EPA took steps to address environmental justice. For example, in 1992, it established the Office of Environmental Equity, which is now known as the Office of Environmental Justice, to focus on environmental pollution affecting racial minorities and low-income communities, but this office has no specific role in rulemaking. In 1993, EPA created the National Environmental Justice Advisory Committee to provide independent advice and recommendations to the Administrator on environmental justice matters.

The 1994 executive order stated that EPA and other federal agencies, to the extent practicable and permitted by law, shall make achieving environmental justice part of their missions by identifying and addressing, as appropriate, the disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States. The executive order does not create a right to sue the government or seek any judicial remedy for an agency's failure to comply with the order.

After the issuance of the executive order, EPA took additional steps to identify and address environmental justice. Among other things, in 1994, the Administrator issued guidance for the rulemaking process suggesting that environmental justice be considered early in the rulemaking process. In 1995, EPA issued an Environmental Justice Strategy that included, among other things, (1) ensuring that environmental justice is incorporated into the agency's regulatory process, (2) continuing to develop human exposure data through model development, and (3) enhancing public participation in agency decision making. In 2001, the Administrator issued a memorandum defining environmental justice more broadly to mean "the fair treatment of people of all races, cultures, and incomes, with respect to the development, implementation, and enforcement of environmental laws and policies, and their meaningful involvement in the decision making processes of the government." In 2004, EPA developed new guidance for rulemaking that, like its earlier 1994 guidance, suggested that environmental justice be considered early in the rulemaking process.

Under the Clean Air Act, EPA, along with state and local government units and other entities, regulates air emissions of various substances that harm human health. According to EPA data, from 1995 through 2004, emissions of certain air pollutants have declined from 15 percent to as much as 31 percent, as shown in table 1.

Table 1: Changes in Estimated Emissions of National Air Pollutants, 1995-2004

Type of air pollutant emission	Air emission amount (millions of tons per year)		Percentage change
	1995	2004 ^a	
Carbon monoxide	120.0	87.2	(27)
Nitrogen oxides	24.7	18.8	(24)
Sulfur dioxide	18.6	15.2	(18)
Particulate matter ^b	3.1	2.5	(19)
Volatile organic compounds	21.6	15.0	(31)
Lead	0.0039	0.0033	(15)

Source: GAO analysis of EPA data.

^aData for 2004 are preliminary.

^bParticulate matter measuring 10 microns or less.

In addition, EPA sets primary national ambient air quality standards for six principal pollutants that harm human health and the environment. These standards are to be set at a level that protects human health with an adequate margin of safety, which, according to EPA, includes protecting sensitive populations, such as the elderly and people with respiratory or circulatory problems. These six pollutants include the five types of emissions listed in table 1, along with ozone, which is not emitted directly but is formed when nitrogen oxides and volatile organic compounds react in the presence of sunlight. According to EPA, in 2003, about 161 million people (about 56 percent of the population) lived in areas where the concentration of ozone met the standard; about 120 million people (41 percent) lived in areas where the concentration of particulate matter met EPA's standard; and about 168 million people (58 percent) lived in areas where the concentrations of the other four pollutants met the standards.

EPA has a multistage process for developing clean air and other rules that it considers high priority (the top two of three priority levels) because of the expected involvement of the Administrator, among other factors. Initially, a workgroup chair is chosen from the lead program office, such as the Office of Air and Radiation (Air Office) in the case of clean air rulemaking. The workgroup chair assigns the rule one of the three priority levels, and EPA's top management makes a final determination of the rule's priority. The priority level assigned depends on such factors as the level of the Administrator's involvement and whether more than one office in the agency is involved. The gasoline, diesel, and ozone implementation rules

were classified as high-priority rules on the basis of these factors. In addition, these rules were considered significant because they had an effect of \$100 million or more a year on the economy, or they raised novel legal or policy issues and, therefore, were required under Executive Order 12866 to be sent to OMB.² Among other things, an OMB review is conducted to ensure that the rule is consistent with federal laws and the President's priorities, including executive orders.

EPA guidance identifies environmental justice as one of many factors to be considered early in the rulemaking process. In 1994, the EPA Administrator established guidance for rulemaking and identified 11 characteristics for "quality actions" in rulemaking. Among these characteristics were (1) consistency with legal requirements and national policies, which would include Executive Order 12898, and (2) adherence to the Administrator's seven priorities, which included environmental justice. According to the guidance, managers must consider all 11 areas early on and be explicit about any trade-offs made among them.

For high-priority rules, the workgroup chair is responsible for, among other things, ensuring that work gets done and the process is documented. Other workgroup members are assigned from the lead program office and, in the case of the two highest priority rules, from other offices. The workgroup may conduct such activities as (1) collaborating to prepare a plan for developing the rule, (2) seeking early input from senior management, (3) consulting with stakeholders, (4) collecting data and analyzing issues, (5) considering various options, and (6) recommending usually one option to managers. In addition, an economist (who typically participates in the workgroup) prepares an economic review of the proposed rule's costs to society. According to EPA, the "ultimate purpose" of an economic review is to inform decision makers of the social welfare consequences of the rule. Finally, after the approval of all relevant offices within EPA, the proposed rule is published in the *Federal Register*, the public is invited to comment on it, and EPA considers the comments. Comments may address any aspect of the proposed rule, including whether environmental justice issues are raised and appropriately addressed in the proposed rule. Sometimes, prior to the publication of the proposed rule, EPA publishes an Advanced Notice of Proposed Rulemaking in the *Federal Register*. The notice provides an opportunity for interested stakeholders to provide input to EPA early in the

²President Clinton issued Executive Order 12866 on September 30, 1993, to begin a program to reform the regulatory process and make it more efficient.

process, and the agency takes such comments into account to an appropriate extent, according to EPA.

In finalizing a rule, EPA is required to provide a response to all significant public comments, including those on environmental justice, and to prepare a final economic review. After these tasks are completed, the rule, if it is significant, is sent to OMB for approval. Once OMB approves the final rule and the Administrator signs it, it is published in the *Federal Register*. After a specified time period, the rule goes into effect.

Within EPA, the Air Office is primarily responsible for implementing the Clean Air Act, as amended. Within that office, the Office of Air Quality Planning and Standards is primarily responsible for developing the majority of new rules for stationary sources resulting from the act. Also within the Air Office, the Office of Transportation and Air Quality has primary responsibility for developing rules and other programs to control mobile source emissions. The Office of Environmental Justice, located within EPA's Office of Enforcement and Compliance Assurance, provides a central point for the agency to address environmental and human health concerns in minority communities and/or low-income communities—a segment of the population that has been disproportionately exposed to environmental harms and risks, according to the office's Web site. The office works with EPA's program and regional offices to ensure that the agency considers environmental justice.

EPA Generally Devoted Little Attention to Environmental Justice in Drafting Three Rules

Although EPA guidance calls for environmental justice to be considered early in the rulemaking process, we found that EPA generally devoted little attention to environmental justice during the drafting of the three rules as proposed. First, environmental justice was not mentioned in an initial form used to flag potential issues for senior management. Second, it is unclear how much the workgroups discussed environmental justice because EPA officials had differing recollections on the matter. Even when the workgroups did discuss environmental justice, their ability to identify potential problems may have been limited by a lack of training and guidance, among other factors. Third, the economic reviews of two of the three proposed rules did not discuss environmental justice. Finally, when the proposed rules were published in the *Federal Register* and made available for public comment, all three mentioned environmental justice, but the discussion was contradictory in one case.

Initial Form Prepared for Senior Management Did Not Address Environmental Justice

Although EPA guidance suggested that environmental justice was one of the factors that should be considered early in rulemaking, it did not include information on environmental justice in a key form prepared for management at the beginning of the process. After being designated, the workgroup chair is to complete a “tiering form” to help establish the level of senior management involvement needed in drafting the rule. For example, the highest priority rules would involve the Administrator and more than one office in the agency. The forms for the gasoline, diesel, and ozone implementation rules stated that these rules were of the highest priority. In addition, the form asks a series of questions, the answers to which are to be used to alert senior managers to potential issues related to compliance with statutes, executive orders, and other matters. This form specifically asks about, among other things, the rules’ potential to pose disproportionate environmental health risks to children and to have potential Endangered Species Act implications. However, the form does not include a question regarding the rules’ potential to create environmental justice concerns. Moreover, on the forms that were completed for the three rules we reviewed, we found no mention of environmental justice.

Lack of Guidance and Training May Have Limited Workgroups’ Ability to Identify Potential Environmental Justice Concerns

EPA officials had differing recollections about the extent to which the three workgroups considered environmental justice. The chairs of the workgroups for the two mobile source rules told us that they did not recall any specific time when they considered environmental justice during the rules’ drafting, but other EPA officials said environmental justice was considered. The chair of the ozone workgroup told us that his group did consider environmental justice, but that he could not provide any specifics about this.

Because 3 to 7 years have passed since these workgroups were formed and the workgroup members may not have remembered discussions of environmental justice during the rules’ drafting, we asked them to provide us with any documentation that may have indicated that environmental justice was considered. Members of the two mobile source workgroups told us that they did not have any such documents. The chair of the ozone workgroup provided us with a copy of a document, prepared by the

workgroup, which identified issues needing analysis.³ The document stated that information would be developed for an economic review related to the proposed rule, and that such information would be used in part to support compliance with executive orders, including one related to low-income and minority populations.

Even when the workgroups stated that they had considered environmental justice, we identified three factors that may have limited their ability to identify potential environmental justice concerns. First, all three workgroup chairs told us that they received no guidance in how to analyze environmental justice concerns in rulemaking. Second, workgroup members had received little, if any, training on environmental justice. Specifically, all three workgroup chairs told us they received no training in environmental justice. Two chairs did not know whether other members of the workgroups had received any training, and a third chair said at least one member had. Some EPA officials involved in developing these three rules told us that it would have been useful to have a better understanding of the definition of environmental justice and how to consider environmental justice issues in rulemaking. Finally, the Air Office's environmental justice coordinators, whose full-time responsibility is promoting environmental justice, were not involved in drafting any of the three rules. Neither of the two coordinators we spoke with (the overall coordinator for the Air Office and the coordinator for the unit within the Air Office that prepared the rules) could recall being involved in drafting any of the three rules. Further, the Air Office's environmental justice coordinators said they rarely served as part of a workgroup for air rulemaking or received questions from a workgroup during the development of any rule under the Clean Air Act.

³The document, called an "analytic blueprint," is to be developed for high-priority rules, according to the 1994 EPA guidance on rulemaking, to provide an opportunity for early identification of issues and for the workgroup to reach agreement on how issues will be resolved. According to the guidance, senior management approval provides managers with the opportunity to engage in a dialogue with the workgroup on the analyses that will support the rule.

Economic Reviews Did Not Always Provide Decision Makers with an Environmental Justice Analysis

EPA is required under the Clean Air Act, other statutes, and executive orders to prepare an economic review for proposed rules, and the type of economic review to be prepared depends on the rule's impact on the economy. Specifically, rules that are expected to have an effect of \$100 million or more a year—like the two mobile source rules—require a more detailed “economic analysis.” Other rules—like the ozone implementation rule—still must conduct a less detailed “economic impact assessment.” According to EPA, the “ultimate purpose” of these reviews is to inform decision makers of the social consequences of the rules. According to EPA guidance, both types of review are to discuss the rule's cost and the distribution of those costs across society. According to EPA officials, both types of review consider environmental justice. The more detailed reviews, or economic analyses, also are to discuss the rule's benefits and equity effects, which include environmental justice.

For all three rules, an economic review of their economic costs and certain other features was prepared for decision makers before the proposed rules were published. However, the economic analyses of the two mobile source rules did not include an analysis of environmental justice. The supervisor of the economists who prepared the analyses said that environmental justice was not discussed in the analyses due to an oversight. However, he also said (and a senior policy advisor in the Air Office concurred) that EPA has not agreed upon the complete list of data that would be needed to perform an environmental justice analysis. Further, he said that EPA does not have a model with the ability to distinguish localized adverse impacts for a specific community or population.

Although the economic impact assessment of the ozone implementation rule did discuss environmental justice, it inconsistently portrayed some information relevant to the rule's potential environmental justice impacts. Specifically, the assessment stated that EPA determined the rule would not create environmental justice issues, based on its analysis of the 1997 rule that established the 8-hour ozone national ambient air quality standard. However, the earlier rule referred to its economic review, which stated it was not possible to rigorously consider the potential environmental justice effects of the rule because the states were responsible for its implementation. The inability of EPA to rigorously consider environmental justice in the 1997 rule does not seem to support EPA's statement that there were no environmental justice issues raised by the ozone implementation rule. Also, the economic impact assessment did not address the potential environmental justice effects of a certain provision, which EPA stated 2 months later, in the proposed rule, might raise environmental justice

issues. The provision would attempt to reduce vehicle use generally throughout a large metropolitan area by encouraging mixed-use growth—a combination of industrial, retail, and residential development—in portions of that metropolitan area, so transportation would be concentrated there. According to EPA, concentrating vehicle emissions and stationary emissions might create environmental justice concerns for low-income residents.

All Three Proposed Rules Mentioned Environmental Justice, but the Discussion Appeared Contradictory in One Case

According to EPA's director of regulatory management, the agency did not have any guidance on whether environmental justice should be included in the preamble of a rule at the time the gasoline and diesel rules were developed. By the time the ozone implementation rule was proposed, EPA had developed guidance, which is still in place today. While this guidance indicates that environmental justice and seven other executive orders should be considered when a new rule is developed, it does not state that officials must include a discussion of environmental justice in the proposed rule. Specifically, the guidance provides that five orders should be discussed in all rules, and that three other orders—including the order relating to environmental justice—may be discussed if necessary and appropriate. (Table 2 contains a list of these executive orders.) EPA officials told us that a discussion of environmental justice was made optional under the guidance because it is infrequently identified by EPA as an issue.

Table 2: EPA Guidance for Discussion of Executive Orders in Proposed Rules

Guidance	Executive order	
	Number	Title
Executive orders that <i>should</i> be discussed	E.O. 12866	Regulatory Planning and Review
	E.O. 13045	Protection of Children from Environmental Health and Safety Risks
	E.O. 13175	Consultation and Coordination with Indian Tribal Governments
	E.O. 13211	Actions That Affect Energy Supply, Distribution, or Use
	E.O. 13132	Federalism
Executive orders that <i>may</i> be discussed	E.O. 12630	Governmental Actions and Interference with Constitutionally Protected Property Rights (Takings)
	E.O. 12898	Environmental Justice
	E.O. 12988	Civil Justice Reform

Source: EPA.

The publication of a proposed rule gives EPA an opportunity to explain how it considered environmental justice in the rule's development. Although all three rules mentioned environmental justice when they were published in the *Federal Register*, they differed in the extent to which they discussed this issue and, in one case, the discussion appeared contradictory. In the proposed gasoline rule, EPA stated that environmental justice is an important economic dimension to consider, but it did not describe whether it was considered or whether the proposed rule raised any environmental justice issues. In the proposed diesel rule, in a section on environmental justice, EPA stated that the rule would improve air quality across the country and could be expected to mitigate environmental justice concerns about concentrations of diesel emissions. More particularly, EPA stated that health benefits could be expected for populations near bus terminals and commercial distribution centers, where diesel truck traffic would be concentrated, because pollutants in diesel emissions would be reduced. The treatment of environmental justice in the proposed ozone implementation rule was unclear because two sections of the rule appeared to contradict each other. In one section, EPA stated that it did not believe the rule would raise any environmental justice issues, but in another section, it specifically invited comments on an option to

concentrate commercial, industrial, and residential growth, which it said “may raise environmental justice concerns.”⁴

EPA Considered Environmental Justice to Varying Degrees in Finalizing Three Rules

In all three cases, EPA received and generally responded to public comments on environmental justice, although in one case it did not explain the basis for its response. In addition, in all three cases, it completed a final economic review, but these reviews generally did not provide decision makers with an environmental justice analysis. EPA published all three final rules, and EPA officials told us that they believed that these rules did not create an environmental justice issue.

EPA Generally Responded to Public Comments Pertaining to Environmental Justice

In Clean Air Act rulemaking, EPA is required to allow the submission of public comments, and the final rule must be accompanied by a response to each significant comment. These comments are generally submitted during the official public comment period after a rule is proposed, but they may be submitted while EPA is drafting a proposed rule. The act also requires EPA to place written comments in a public docket.⁵ In addition, according to EPA’s public involvement policy, agency officials should explain, in their response to comments, how they considered the comments, including any change in the rule or the reason the agency did not make any changes.⁶

The Gasoline Rule

Commenters from the petroleum industry, environmental groups, and elsewhere stated that the proposed gasoline rule raised environmental justice concerns. For example, one commenter representing environmental justice groups stated that the proposed rule was “completely devoid of environmental justice analysis,” and that the national benefits of the rule were derived from transferring broadly distributed emissions into areas

⁴In commenting on our report, EPA explained its “seemingly contradictory statements” about the proposed ozone implementation rule. It said that it sought comments on the proposal, which it said “might raise environmental justice concerns,” to alert stakeholders and facilitate discussions, and that the proposal was not definitive enough to proceed to final rulemaking.

⁵A public docket serves as the repository for the collection of documents or information related to a particular agency action or activity. It generally consists of documents specifically referenced in the *Federal Register*, any public comments received, and other information used by decision makers or otherwise related to the agency action or activity.

⁶EPA, *Public Involvement Policy of the U.S. Environmental Protection Agency*, EPA 233-B-03-2002, May 2003, which updated a 1981 policy.

around refineries. Also, a representative of a petroleum company stated that EPA needed to address environmental justice issues. EPA responded by taking two actions. It (1) analyzed the rule's potential impact on communities around refineries and (2) sought stakeholders' views on environmental justice and other issues relating to refinery emissions.

First, EPA estimated how two types of refinery and vehicle emissions would change, as a result of the rule, in 86 U.S. counties⁷ that contained a refinery. The two types of emissions—nitrogen oxides and volatile organic compounds—contribute to the formation of ground-level ozone, which is regulated under the Clean Air Act because it is harmful to human health. EPA estimated that the increase in refinery emissions could be greater than the decrease in vehicle emissions, resulting in a net increase in emissions of one or both substances, in 26 counties (about 30 percent of the total), as shown in table 3. Specifically, it estimated that emissions of both substances could increase in 10 counties, with a population of about 13 million people, and that emissions of only one substance would increase in another 16 counties. On the other hand, EPA estimated that emissions of both substances could decrease in 60 counties. For example, EPA estimated that in Plaquemines Parish, Louisiana, net emissions of nitrogen oxides could increase 298 tons as a result of the rule, reflecting an increase in refinery emissions of 356 tons and a decrease in vehicle emissions of 58 tons. Conversely, it estimated that in Calcasieu Parish, emissions of volatile organic compounds could decrease by 61 tons, reflecting an increase in refinery emissions of 84 tons and a decrease in vehicle emissions of 145 tons.

⁷EPA's analysis covered counties and parishes.

Table 3: Estimated Potential Changes in Selected Emissions in 2007 Resulting from the Gasoline Rule in Counties with Refineries

Estimated potential changes	Number of counties
Increased emissions of one or both emissions	
Increased emissions of both emissions	10
Increased emissions of only one emission	16
Subtotal	26
Decreased emissions of both emissions	60
Total	86

Source: GAO analysis of EPA data.

The results of EPA’s analysis appear to support those commenters who asserted that the rule might create environmental justice issues in some localities. They also appear to conflict with EPA’s statements, in its summary of and response to comments document, that “it would be unacceptable to trade the health of refining communities in exchange for generalized air pollution benefits. However we do not believe the Tier 2/gasoline sulfur control rule will cause such an exchange.” EPA also stated that, for the “vast majority” of areas near refineries, the benefits of reduced emissions from vehicles would “far outweigh” any increase in refinery emissions.⁸

When asked whether this analysis appeared to confirm concerns about the rule’s potential environmental justice impacts, EPA officials told us that the analysis was limited and overstated the net increase in refinery emissions in two ways. First, according to EPA officials, the analysis did not consider the actions that refiners would likely take to offset increases in emissions because of the new rule; EPA assumed that they would seek to reduce emissions in other ways to avoid additional regulation at the state level. EPA said it believed these actions would limit the expected increases in refining emissions. Second, EPA analyzed the effect of the rule only for 2007. EPA officials said they believed that the benefits of the rule would increase after that year, as new (and cleaner) vehicles increasingly replaced older (and less clean) vehicles.

⁸EPA, *Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements: Response to Comments*, EPA 420-R-99-024, December 1999.

We note two other ways in which the analysis was limited in estimating the potential effects on communities near refineries. First, EPA did not ask refiners about the rule's impact on their output of these two emissions, nor did EPA perform an analysis to determine how the rule would impact individual refiners' emissions of these two substances. Instead, EPA assumed that emissions would increase by the same proportion at each refinery—nitrogen oxides, by 4.5 percent, and volatile organic compounds, by 3.32 percent—although individual refineries increases could be lesser or greater than these percentages. Secondly, EPA did not estimate the rules' impact on other pollutants, such as particulate matter and sulfur dioxide, which might also increase as a result of the increase in refining activity needed to comply with the rule.

EPA did not make the results of its analysis available to the public, either in the economic review of the final rule or elsewhere in the docket, because EPA officials told us they considered the results of the analysis too uncertain to release to the public. However, EPA officials told us that the analysis—along with their assumption that refineries were likely to emit less emissions than the analysis indicated—supported their belief that the rule would be unlikely to cause environmental justice impacts. In addition, these officials said they believed that, if the rule did create environmental justice issues, they could be best addressed by the state or local governments. This is because any refiners needing to increase their emissions to comply with the gasoline rule would have to submit specific plans to such governments during the permitting process.

Second, EPA believed that environmental justice issues would be best addressed during the permitting process, and EPA hired a contractor to solicit stakeholders' potential concerns about this issue. In September 1999, the contractor interviewed individuals from EPA, environmental organizations, the oil refining industry, and state agencies responsible for regulating refinery emissions to ascertain their views. In December 1999, the contractor again sought stakeholders' views, focusing largely on local environmental groups, because few of them were interviewed in September. In December, local environmental groups stated that they did not trust the state environmental agencies, and that they perceived that EPA had "talked exclusively with industry representatives prior to developing the proposed rule, but not to the local environmental organizations." In addition, these groups said that they did not want "any added emissions to their air, even if there will be a net benefit to the nation's environment."

In response to the stakeholders' concerns, the contractor recommended that EPA develop permitting teams, provide information about the rule, and enhance community involvement. The contractor said that these recommendations would improve the permitting process for all stakeholders by addressing issues specific to each permit, potentially including environmental justice. EPA said that it would implement the contractor's recommendations for improving the permitting process to deal with environmental justice issues.

EPA stated that it believed that environmental justice issues could be dealt with during the permitting process at the state or local level, and officials told us that EPA has limited direct authority over permitting because most permitting occurs at the state level. Several groups commented that the states, not EPA, "act as the permitting authorities" over refineries. EPA said it agreed that states generally have primary authority over permitting. Further, Executive Order 12898 does not apply to state or local permitting authorities, and absent specific state or local law, state and local governments have no obligation to consider environmental justice when issuing permits.

The Diesel Rule

In response to an Advanced Notice of Proposed Rulemaking, several commenters expressed concern that the diesel rule would lead to increased refinery emissions of regulated pollutants. They specifically stated that EPA should address the potential for increased emissions in its economic analysis of the rule. EPA did not respond to these comments⁹ and did not factor the potential increase in regulated pollutants into its final economic analysis. In commenting on the proposed rule, several petroleum companies stated that changes they would need to make to comply with the rule might increase emissions and, therefore, lead citizens to raise environmental justice issues. EPA responded that it did not believe that complaints would delay the refineries' permitting applications. However, EPA did not analyze the rule for environmental justice impacts, such as increases in air emissions in communities surrounding refineries. EPA officials told us that they did not perform such an analysis because they

⁹In commenting on our draft report, EPA noted that the agency was not obligated to respond to these comments because they were filed on an Advanced Notice of Proposed Rulemaking, which provides an opportunity for interested stakeholders to provide input to EPA early in the process, and the agency takes such comments into account to an appropriate extent. Furthermore, EPA said commenters did not repeat these concerns when the proposal was issued about a year later, and EPA assumed this was because they were satisfied.

believed that they had sufficiently analyzed these issues in the context of the gasoline rule.

The Ozone Implementation Rule

In the proposed rule on implementing the ozone standard, EPA asked for public comments on potential environmental justice issues stemming from a specific provision that would have encouraged concentrated growth in urban areas to reduce the number of commuter vehicles contributing to ozone emissions. Seven public commenters stated that the provision could have potential environmental justice impacts. However, these comments on environmental justice did not relate to the provisions of the ozone implementation rule that have, thus far, been finalized, and therefore it was not necessary for EPA to respond to these comments. According to an EPA official, EPA is still considering the provision, and the public comments on it, for a second phase of the rule implementing a new ground-level ozone standard that EPA intends to finalize this year.

Final Economic Reviews Generally Did Not Provide Decision Makers with an Environmental Justice Analysis

After taking into consideration public comments, the agency prepares a final economic review. EPA guidance indicates that this final economic review, like the proposed economic review, should identify the distribution of the rule's social costs across society. After considering public comments, EPA did prepare a final economic review for all three rules, but, for two of the three rules, environmental justice was not discussed.

Even after the public expressed concerns about environmental justice, the final economic analysis of the gasoline rule, like the analysis of the proposed rule, did not discuss environmental justice. According to the supervisory economist, not discussing environmental justice in the final analysis was an oversight.

Similarly, the final economic analysis of the diesel rule, like the analysis of the proposed rule, did not discuss environmental justice. Again, according to the supervisory economist, not discussing environmental justice in the final analysis was an oversight. As a result, EPA did not incorporate the public's suggestions that EPA include the cost of increased refinery emissions in its economic analysis.

For the ozone implementation rule, EPA did not prepare a new economic impact assessment for its final version. Instead, it issued an addendum to the proposed assessment and stated that it considered the addendum and the proposed assessment to constitute a final economic impact assessment. In addition, because EPA decided to finalize the ozone

implementation rule in two phases, the addendum addressed only the part of the rule that was finalized, not the entire proposed rule. Thus, the assessment of the final rule did not change the conclusion of the assessment of the proposed rule, namely that the ozone implementation rule did not create any environmental justice issues.

EPA Officials Believed That the Three Final Rules Did Not Create Environmental Justice Issues

The publication of a final rule gives EPA another opportunity to explain how it considered environmental justice in the rule's development. For all three rules, EPA discussed environmental justice.¹⁰ The preamble to one rule stated explicitly that it would not create an environmental justice issue.¹¹ The other two rules did not explicitly state whether they would create an environmental justice issue, although the preambles to both rules discussed the mitigation of potential environmental justice effects. EPA officials told us that they believed that these rules did not create an environmental justice issue.

In the preamble to the final ozone implementation rule, as in the proposed rule, EPA stated that the rule did not raise any environmental justice issues. The agency supported its statement by explaining that the rule was implementing a standard, developed in 1997, that had already taken environmental justice into account.

In the preamble to the final gasoline rule in 2000, EPA stated that areas around the refineries would receive an environmental benefit from the rule, and that emissions at some refineries might increase even after installing equipment to comply with emissions controls in the Clean Air Act. It concluded that the increases in refinery emissions would be very small in proportion to the decreases in vehicle emissions in the areas around refineries. Moreover, EPA discussed its previous actions to consider environmental justice concerns, as previously discussed, and stated that it was committed to resolve environmental justice issues if they arose, through additional outreach efforts to local communities and similar means. Although the final rule did not state explicitly whether it would or would not ultimately create an environmental justice issue, EPA officials

¹⁰Of the 19 clean air rules that EPA finalized during the time period we reviewed and that met our criteria, the 3 rules we reviewed were the only ones that mentioned environmental justice in the final rule.

¹¹The preamble to a rule contains additional text that explains the rationale behind a proposed or final rule.

told us in late 2004 that, in their opinion, the rule did not create such an issue.

Lastly, in the preamble to the final diesel rule in 2001, EPA stated that the rule could mitigate some of the environmental justice concerns pertaining to the heavy-duty diesel engines that often power city buses. The final rule does not discuss any potential environmental justice issues pertaining to impacts from increased refinery emissions on nearby communities, even though EPA officials told us that they recognized increased refinery emissions could have such impacts. Nevertheless, EPA officials told us in late 2004 that they believed the rule did not create environmental justice issues.

Conclusions

We found some evidence that EPA officials considered environmental justice when drafting or finalizing the three clean air rules we examined. During the drafting of the three rules, even when the workgroups discussed environmental justice, their capability to identify potential concerns may have been limited by a lack of guidance, training, and involvement of EPA's environmental justice coordinators. It is important that EPA thoroughly consider environmental justice because the states and other entities, which generally have the primary permitting authority, are not subject to Executive Order 12898.

EPA's capability to identify environmental justice concerns through economic reviews also appears to be limited. More than 10 years have elapsed since the executive order directed federal agencies, to the extent practicable and permitted by law, to identify and address the disproportionately high and adverse human health or environmental effects of their programs, policies, and activities. However, EPA apparently does not have sufficient data and modeling techniques to be able to distinguish localized adverse impacts for a specific community. For example, EPA has not agreed upon the complete list of data that would be needed to perform an environmental justice analysis. This suggests that, although EPA has developed general guidance for considering environmental justice, it has not established specific modeling techniques for assessing the potential environmental justice implications of any clean air rules. In addition, by not including a discussion of environmental justice in all of the economic reviews, EPA decision makers may not have been fully informed about the environmental justice impacts of all the rules.

Finally, even though members of the public commented about two rules' potential to increase refinery emissions—potential environmental justice issues, (1) in one case, EPA did not provide a response and (2) in the other case, it did not explain the basis for its response, such as the rationale for its beliefs and the data on which it based its beliefs. While these may not have been significant comments requiring a response, EPA's public involvement policy calls for EPA to provide responses when feasible, and this policy does not appear to distinguish comments on Advanced Notices of Proposed Rulemaking from comments on proposed rules.

Recommendations for Executive Action

In order to ensure that environmental justice issues are adequately identified and considered when clean air rules are being drafted and finalized, we recommend that the EPA Administrator take the following four actions:

- ensure that the workgroups devote attention to environmental justice while drafting and finalizing clean air rules;
- enhance the workgroups' ability to identify potential environmental justice issues through such steps as (1) providing workgroup members with guidance and training to help them identify potential environmental justice problems and (2) involving environmental justice coordinators in the workgroups when appropriate;
- improve assessments of potential environmental justice impacts in economic reviews by identifying the data and developing the modeling techniques that are needed to assess such impacts; and
- direct cognizant officials to respond fully, when feasible, to public comments on environmental justice, for example, by better explaining the rationale for EPA's beliefs and by providing its supporting data.

Agency Comments and Our Evaluation

EPA's Assistant Administrator for Air and Radiation provided comments on a draft of this report in a letter dated June 10, 2005 (see app. IV). In addition, he provided technical comments that we incorporated where appropriate.

First, EPA expressed the view that its rules have resulted in better air quality nationally. EPA said it was "disappointed" that we did not

accurately reflect its progress in achieving environmental justice with respect to air pollution. It noted that the three rules are part of a larger program that is making significant progress in providing cleaner air nationwide. Second, EPA stated that in examining the agency's process for considering environmental justice, we asked the wrong question, and that we should have focused on the outcome of the rulemaking process—the rules themselves. Finally, it stated that our evidence of how it considered environmental justice during the development of the three final rules did not support our conclusions and recommendations, and it provided detailed information about the efforts it took relating to environmental justice for the three final rules.

We question the relevance of the information provided on air quality nationally and disagree with EPA's other two points. First, in addition to the data we had already presented on the decrease in emissions of certain air pollutants, EPA provided data on overall improvements in air quality, specifically the decrease in the number of areas throughout the nation that did not meet certain ambient air quality standards. However, because these data provide no detail on the conditions facing specific groups—for example, residents of areas near refineries, who might be negatively affected by the two mobile source rules—these data are not necessarily germane to environmental justice. Although Executive Order 12898 calls on agencies to identify and address the disproportionately high and adverse effects of its programs, policies, and activities on specific groups, EPA provided no information about such groups. Also, we believe that EPA's statement about the effect of clean air rules on national air quality at some level misses the point. Second, EPA suggested that it would have been more appropriate for us to look at the outcomes of its efforts than at the process that produced the outcomes. We agree with EPA that outcomes are important, but it is not yet clear whether the rules we examined will address environmental justice issues effectively because the rules are being implemented over the next several years. It is also important to examine the process that led to the rules—as we did. The various process steps are intended to help ensure that EPA's activities during the many phases of drafting and finalizing all rules are efficiently and effectively focused on achieving the desired outcomes.

Third, although EPA stated that our evidence did not support our conclusions and recommendations, it did not challenge the accuracy of the information we provided on how it considered environmental justice during the many phases of developing the three final rules discussed in the body of our report and the three proposed rules discussed in appendix II.

While it provided detailed information on certain activities and the rationale for undertaking them, our report already discussed nearly all of these activities. For example, EPA noted at length its efforts, after drafting the gasoline rule, to hold discussions with environmental justice and other groups on issues relating to permits that refiners would need if they increased their emissions to comply with the rule. We already acknowledged these efforts in our report. However, EPA's efforts at this stage do not mitigate the fact that it devoted little attention to environmental justice up to that point, nor the fact that discussions with affected groups, while beneficial, do not offset the effects of possible increases in refinery emissions on these groups. EPA is essentially relying on state and local governments to deal with environmental justice concerns as they implement the gasoline and diesel rules at the refinery level, even though the executive order does not apply to state or local governments, and, absent specific state or local law, they have no obligation to consider environmental justice when issuing permits. In addition, the three final rules were selected in part because they mentioned environmental justice and should have showcased EPA's efforts to consider environmental justice. Thus, we continue to believe that the evidence we provided supports our conclusions and recommendations.

Finally, aside from its general statement that the evidence we presented does not support our conclusions and recommendations, EPA generally did not respond to our four recommendations. We continue to believe that all of them are still warranted. With respect to our recommendation that workgroups devote attention to environmental justice while developing clean air rules, EPA stated that it "devoted appropriate attention to environmental justice issues" in the three final rules. EPA's guidance suggests that environmental justice be considered both at the beginning of process (when the rules are drafted) and at the end of the process (when they are finalized). However, nearly all of the attention EPA described came at the end of the process—after receiving public comments.

EPA responded in part to our recommendation on the need to provide guidance and training to workgroup members and the need to involve environmental justice coordinators. EPA did not provide any information that would refute the finding on the lack of guidance and training, for example, by bringing to our attention any guidance or training that it provides to workgroup members. However, EPA noted that an environmental justice coordinator "was heavily involved" in one of the three final rules and became an "ad hoc member" of the workgroup for the gasoline rule "around the time the rule was proposed." From EPA's

comment, it is clear that the coordinator became involved only at the end of the process of drafting this rule (i.e., “around the time the rule was proposed”). Further, EPA did not mention whether a coordinator was involved at all in the other two final rules, nor in the three proposed rules.

EPA did not comment specifically on our recommendation on the need to improve assessments of potential environmental justice impacts in economic reviews or provide any information that would refute the finding that led to it. EPA responded in part to our recommendation on the need to respond fully, when feasible, to public comments on environmental justice. Specifically, it noted that it did not respond to comments on the Advanced Notice of Proposed Rulemaking on the diesel rule, and that it has no legal or policy obligation to respond to comments on an Advanced Notice of Proposed Rulemaking. Although we understood that EPA’s public involvement policy calls for the agency to include a response to all comments when feasible, we revised our report to reflect EPA’s comment that it had no obligation in such instances.

As arranged with your office, we plan no further distribution of this report until 15 days after the date of this letter, unless you publicly announce its contents earlier. At that time, we will send copies of this report to interested congressional committees and the EPA Administrator. We will make copies available to others upon request. This report will also be available at no cost on GAO’s Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or stephensonj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff that made major contributions to this report are listed in appendix V.

Sincerely yours,

A handwritten signature in black ink that reads "John B. Stephenson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

John B. Stephenson
Director, Natural Resources
and Environment

Information about the Three Final Clean Air Rules That We Examined

Short title used in this report	Gasoline rule	Diesel rule	Ozone implementation rule
Full title	Control of Air Pollution from New Motor Vehicles: Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Control Requirements	Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements	Final Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard—Phase 1
EPA summary of the rule	<p>This rule is designed to significantly reduce the emissions from new passenger cars and light trucks, including pickup trucks, vans, minivans, and sport-utility vehicles, to provide for cleaner air and greater public health protection.</p> <p>This rule treats vehicles and fuels as a system, combining requirements for cleaner vehicles with requirements for lower levels of sulfur in gasoline.</p>	<p>This rule reduces particulate matter and nitrogen oxides emissions from heavy-duty engines by 90 percent and 95 percent below current standard levels, respectively, to decrease health impacts caused by diesel emissions.</p> <p>Under this rule, a heavy-duty vehicle and its fuel are regulated as a single system, combining requirements for new heavy-duty engines to meet more stringent emission standards and reductions in the level of sulfur allowable in highway diesel fuel.</p>	<p>To provide certainty to states and tribes regarding classifications for the 8-hour national ambient air quality standards (NAAQS) and their continued obligations with respect to existing requirements.</p> <p>This rule addresses the following topics: classifications for the 8-hour NAAQS; revocation of the 1-hour NAAQS; how antibacksliding principles will ensure continued progress toward attainment of the 8-hour ozone NAAQS; attainment dates; and the timing of emissions reductions needed for attainment.</p>
Final rule in the <i>Federal Register</i>	65 Fed. Reg. 6698 02/10/2000	66 Fed. Reg. 5002 01/18/2001	69 Fed. Reg. 23951 04/30/2004
Response to comment date	12/20/1999	12/21/2000	04/15/2004
Final economic review date	12/1999	12/2000	04/2004
Proposed rule in the <i>Federal Register</i>	64 Fed. Reg. 26004 05/13/1999	65 Fed. Reg. 35430 06/02/2000	68 Fed. Reg. 32802 06/02/2003
Date of economic review for proposed rule	04/1999	05/2000	04/2003
Workgroup initiated date	08/19/1998	09/01/1999	08/21/2001

Source: The *Federal Register* and EPA.

EPA's Consideration of Environmental Justice in the Drafting of Three Proposed Clean Air Rules

Because of substantial congressional interest, we are including information about how the Environmental Protection Agency (EPA) considered environmental justice during the drafting of three additional proposed clean air rules, up through their publication in the *Federal Register*. The three proposed rules we reviewed were as follows:

- The December 2002 New Source Review proposed rule, which proposed a change in the category of activities that would be considered routine maintenance, repair, and replacement under the New Source Review Program.¹
- The January 2004 mercury proposed rule, which proposed two methods for regulating mercury emissions from certain power plants.²
- The January 2004 proposed Clean Air Interstate Rule (interstate rule), which, among other things, proposed a requirement that 29 states and the District of Columbia revise their state plans to include control measures limiting emissions of sulfur dioxide and nitrogen oxides.³

When we completed our initial fieldwork, these rules had not been finalized. Since then, the mercury and interstate rules have been finalized and a portion of the New Source Review rule has been finalized. Additional detail on these rules is provided in table 4.

¹67 Fed. Reg. 80290 (2002). EPA issued a final rule on the equipment replacement portion of the New Source Review rule in October 2003. 68 Fed. Reg. 61248. EPA has not finalized the remainder of the rule.

²69 Fed. Reg. 4652 (2004). EPA issued a final mercury rule in March 2005. 70 Fed. Reg. 28606.

³69 Fed. Reg. 4566 (2004). EPA issued a final rule on the interstate rule in March 2005. 70 Fed. Reg. 25162.

**Appendix II
EPA's Consideration of Environmental
Justice in the Drafting of Three Proposed
Clean Air Rules**

Table 4: Information about Three Proposed Clean Air Rules

Short title	Mercury rule^a	New Source Review routine maintenance	Clean Air Interstate Rule (interstate rule)
Full title	Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units	Prevention of Significant Deterioration (PSD) and Non-attainment New Source Review (NSR): Routine Maintenance, Repair and Replacement	Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Interstate Air Quality Rule)
EPA summary of the rule	<p>This rule would set national emission standards or standards of performance for mercury emissions from new and existing coal-fired power plants.</p> <p>One approach would require coal-fired power plants to meet emission standards reflecting the application of currently available pollution controls known as "maximum achievable control technologies" (MACT). The second approach would set a cap on the total mercury emissions allowed from coal-burning power plants nationwide and would allow emissions trading.</p>	<p>The rule would provide a future category of activities that would be considered "routine maintenance, repair and replacement" for the New Source Review Program, as well as an annual allowance for such activities.</p> <p>Two categories would be considered routine maintenance, repair, and replacement: (1) certain activities as long as the facility's annual maintenance, repair, and replacement allowance is not exceeded and (2) replacement of certain components that meet EPA's equipment replacement provision criteria.</p>	<p>The rule would require 29 states and the District of Columbia to revise their state implementation plans to include control measures to reduce emissions of sulfur dioxide and/or nitrogen oxides.</p> <p>Based on EPA's finding that the 29 states and the District of Columbia contribute significantly to nonattainment of the national ambient air quality standards for fine particles and/or 8-hour ozone in downwind states, EPA would require statewide sulfur dioxide and nitrogen oxide reductions. Besides requiring reductions on controls for power plants, the proposed rule discusses a model multistate cap and trade program that states could choose to adopt. The model trading program would be proposed in a supplemental action.</p>
Proposed rule in the <i>Federal Register</i>	69 Fed. Reg. 4652 01/30/2004	67 Fed. Reg. 80290 12/31/2002	69 Fed. Reg. 4566 01/30/04
Date of economic review for proposed rule	The assessment consisted of (1) an EPA memorandum to the docket on Economic and Energy Impact Analysis for the MACT rulemaking on 01/28/2004; (2) a memorandum to the docket called the regulatory flexibility analysis on 12/15/2003; and (3) a MACT benefit analysis of 01/2004.	11/2002	01/2004
Workgroup initiated date	04/06/2001	02/11/2002	Prior to 08/30/2003

Source: The *Federal Register*.

Appendix II
EPA's Consideration of Environmental
Justice in the Drafting of Three Proposed
Clean Air Rules

^aThe proposed rule also addressed nickel emissions. A supplemental notice of proposed rulemaking was published in March 2004.

EPA officials told us that they did not consider environmental justice while drafting two of these three proposed rules. Moreover, in our analysis of these rules' economic reviews, we found no discussion of environmental justice for two of the three rules. Finally, when published in the *Federal Register*, none of the proposed rules discussed environmental justice.

Workgroups Devoted Little Attention to Environmental Justice

The three workgroup chairs provided initial reports to senior management in tiering forms to help establish the level of senior management involvement needed in developing the rule. In these initial reports, all three proposed rules were classified as top priority. The forms were to be used to alert senior managers to potential issues related to compliance with statutes, executive orders, and other matters. Environmental justice was not a specific element on the form at the time, and the reports for the three rules did not discuss environmental justice.

The chair of the New Source Review workgroup said his group did not consider and address environmental justice early in the development process because the rule was to be applied nationally and was prospective in nature. The chair of the interstate rule workgroup said his group conducted no environmental justice analysis. Finally, the chair for the mercury workgroup said his group considered environmental justice in drafting the proposed rule, but he provided no details about how it was considered.

Workgroup members' ability to identify potential environmental justice concerns may have been limited by a lack of guidance, training, and involvement by environmental justice coordinators. Specifically, all three chairs said that their workgroups did not receive guidance for how to consider environmental justice when analyzing the rules. Furthermore, while the mercury workgroup chair said that he had received training on environmental justice, the other two chairs said they had received no such training. All three chairs said they did not know whether other members in their workgroups had received environmental justice training. Also, all three chairs said that environmental justice coordinators did not assist their workgroup.

Little Attention Was Devoted to Environmental Justice in the Economic Reviews

EPA prepared an economic analysis for all three rules. Among these economic analyses, only the review for the New Source Review rule stated that environmental justice was unlikely to be a problem because the potential for disproportionate effects generally occurs as a result of decisions on siting new facilities, and EPA noted that this rule dealt exclusively with existing facilities. The analysis for the mercury rule did not discuss environmental justice. The analysis stated that—due to technical, time, and other resource limitations—EPA was unable to model the changes in mercury emissions that might result from the rule. However, EPA stated that to the extent mercury emissions do have adverse health effects, the proposed rule would reduce emissions and subsequent exposures of people living near power plants.⁴ The analysis for the interstate rule did not discuss environmental justice. It was not discussed, according to the supervisor for economists in the Office of Air and Radiation, because the rule was expected to provide nationwide benefits and because EPA lacked the data and modeling capability to predict how regulated entities will react to the requirements of the rule.

Proposed Rules Did Not Discuss Environmental Justice

We found no discussion of environmental justice in any of the three rules, as they were published in the *Federal Register*. Neither Executive Order 12898 nor EPA guidance requires a discussion of environmental justice in proposed rules. According to EPA officials, such a discussion was not necessary for these three rules because they did not believe the rules would have any environmental justice impacts.

⁴See EPA, *Benefit Analysis for the Section 112 Utility Rule*, which is EPA's analysis of a technology-based approach to reducing mercury emissions from a current level of 48 tons per year to a projected 34 tons per year by 2008. EPA did not finalize this approach; instead, it finalized an alternative approach to reducing mercury emissions to 38 tons per year in 2010 and 15 tons annually by 2018.

Scope and Methodology

To determine how EPA considered environmental justice when developing significant rules under the Clean Air Act, as amended, we reviewed an EPA database of clean air rules finalized during fiscal years 2000 through 2004. We assured ourselves that the database was reliable for our purposes. Rules are considered significant and sent to the Office of Management and Budget for review if their expected annual costs or benefits exceed \$100 million; they raise novel legal or policy issues; or they may interfere with actions undertaken by another federal agency or state, local, or tribal governments. In addition, rules that involve the Administrator or an interoffice review are considered high priority within EPA. We identified 19 clean air rules EPA finalized in our time period that were considered significant and a high priority. We then reviewed the 19 rules in the *Federal Register* to identify those rules that mentioned the terms “environmental justice” or “Executive Order 12898” and found 3 rules that mentioned one or both terms. The 16 rules that did not mention environmental justice included rules relating both to mobile sources, such as a rule to control the emissions of air pollution from nonroad diesel engines and fuels, and rules relating to stationary sources, such as a final rule to establish a national emission standard for hazardous air pollutants at iron and steel foundries. We focused on the three rules that mentioned environmental justice because we believed they were more likely to demonstrate how EPA considered this issue in clean air rulemaking.

To determine how EPA considered environmental justice as it drafted and finalized clean air rules, we reviewed EPA documents and interviewed EPA officials, including workgroup leaders. To characterize how or whether EPA’s economic reviews for the rules considered environmental justice, we analyzed both the preliminary and final economic reviews for each rule and interviewed the supervisor of the economists who developed the reviews. To determine whether the public raised environmental justice concerns in commenting on proposed rules and how EPA addressed those comments, we reviewed EPA documents, such as the agency’s summaries of comments and responses, and the final rules as published in the *Federal Register*.

We conducted our work between July 2004 and May 2005 in accordance with generally accepted government auditing standards.

Comments from the Environmental Protection Agency

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 10 2005

OFFICE OF
AIR AND RADIATION

Mr. John B. Stephenson
Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, D.C. 20548

Dear Mr. Stephenson:

The Environmental Protection Agency's Office of Air and Radiation (OAR) takes environmental justice seriously. OAR has taken a comprehensive look at its programs to determine how, with respect to air quality, to achieve "the fair treatment of people of all races, cultures, and incomes with respect to the development, implementation, and enforcement of environmental laws, and policies, and their meaningful involvement in the decisionmaking processes of the government."¹ OAR's goal is to achieve environmental justice by decreasing the burden of environmental risks on all communities by improving air quality.² Indeed, as stated by then Administrator Whitman, "Environmental justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards."³

EPA is disappointed that the Draft Report does not accurately reflect the progress we are making in achieving environmental justice with respect to air pollution; nor does it accurately reflect the way in which the three final rules GAO reviewed, and EPA's development of them, address environmental justice issues. The Draft Report focuses on three final rules: two mobile source rules issued in the Clinton Administration and a rule issued last year establishing a framework for bringing all areas in the country into attainment with the national health-based ozone standard. When objectively examined on the record, the three final rules reviewed by GAO demonstrate that OAR paid appropriate attention to environmental justice during the rulemakings. The Draft Report's description of how EPA considered environmental justice in these rules contains a number of factual inaccuracies and misleading statements, and omits important information. These three final rules do not provide support for GAO's conclusions and recommendations.

¹ See Administrator Whitman's Memorandum of August 9, 2001.

² OAR's 2004-2005 Action Plan to Integrate Environmental Justice at Page 8.

³ See n. 1.

**Appendix IV
Comments from the Environmental
Protection Agency**

More importantly, we believe GAO's approach is too narrow and does not ask the right questions. The Draft Report focuses on process issues – like whether environmental justice was listed on an intra-agency form used to track a rule. It completely neglects the most important issues – do the rules advance or hinder environmental justice? Do they help provide cleaner air to the people who need it? Judged against these standards, these three rules, and OAR's program in general, show that OAR is making important progress in addressing environmental justice issues.

Summary

Contrary to the Draft Report's conclusion, the three final rules GAO reviewed demonstrate that OAR paid appropriate attention to environmental justice issues. EPA concluded that one of the three final rules, the Phase I Ozone Implementation Rule (Phase I Rule), did not raise environmental justice concerns. No one submitted comments disagreeing with EPA's conclusion. In fact, the Phase I Rule establishes key elements of the framework to bring all areas of the country into attainment with the national health-based 8-hour ozone standard – an important environmental justice goal.

It is hard for us to see the Tier 2/Low Sulfur Gasoline Rule (Tier 2 Rule) as anything but an environmental justice success story. This rule will improve air quality for millions of Americans, especially those living in urban areas or that otherwise have high exposure to car and light-duty truck emissions. The Agency did sufficient analysis to identify the potential environmental justice issues and to identify the permitting process as the way to address them under the Clean Air Act. We then conducted extraordinary outreach efforts with various stakeholders, including representatives of the environmental justice community and communities near refineries, to determine how to resolve conflicting objectives of the refiners and the local communities with regard to the permitting process. Due in large part to comments from the environmental justice community, EPA declined to adopt some changes to the permitting process that were suggested by the refinery industry and opposed by the environmental justice community.

The Heavy Duty Diesel Engine/Low Sulfur Diesel Rule (Heavy Duty Diesel Rule), which was finalized one year after the Tier 2 rule, helped address a specific environmental justice concern – certain communities' disproportionate health risks from diesel exhaust. EPA believed that the Heavy Duty Diesel Rule raised essentially the same permitting and refinery-related environmental justice issues that EPA had just successfully worked with stakeholders to address. Thus, EPA proposed to resolve those issues the same way for the Heavy Duty Diesel Rule. EPA did not receive any public comments from environmental justice or local community groups objecting to EPA's proposal to use this approach.

See comment 1.

**Appendix IV
Comments from the Environmental
Protection Agency**

These three rules are part of a larger program that is making significant progress in providing cleaner air to communities with high pollution levels. One measure of this progress is that almost 85% of the areas that were designated nonattainment (i.e., areas that did not meet a national, health-based air quality standard) in the early 1990s for a particular pollutant now have monitored air quality that meets the standard they were violating, as shown in Table 1.⁴ EPA devotes a significant amount of its air rulemaking resources to bringing cleaner air to the cities and other areas that do not meet the health-based standards.

Table 1: Progress in Meeting National Health-Based Attainment Standards⁵

Criteria Pollutant	Nonattainment Areas as of 1992	1992 Nonattainment Areas Currently Monitoring Violations (based on 2003 data)
Nitrogen Oxide	1	0
Sulfur Dioxide	54	0
Carbon Monoxide	43	0
Lead	13	0
Coarse Particles (PM10)	87	21
Ozone (1-Hour Standard)	101	26

⁴ As discussed later in this letter, in 1997 EPA determined that new scientific evidence warranted a health-based standard for fine particles and a new, more stringent standard (the 8-hour standard) for ozone. EPA is working with states to meet the Clean Air Act timetable for bringing into attainment those areas that do not currently meet the 1997 standards.

⁵ There are often slight year-to-year variations in the number of 1992 Nonattainment Areas monitoring violations. Please note that EPA included essentially the same table in a May 18, 2005, Letter from Mr. Holmstead to Mr. Stephenson regarding GAO's draft report entitled "EPA Has Completed Most of the Actions Required by the 1990 Amendments, but Many Were Completed Late." The table in the previous letter, which showed a higher number of areas monitoring violations than does the table in this letter, contained some incorrect information.

See comment 2.

Phase I Ozone Implementation Rule

EPA appropriately considered environmental justice during the Phase I Ozone Implementation Rule (Phase I Rule) and concluded that, based on what the Rule requires and on the ambient air quality standard-setting and implementation process, the Phase I Rule does not raise environmental justice concerns. The work group spent a sufficient amount of time considering and analyzing environmental justice issues in the context of this rule.

The Phase I Rule helped establish the framework for states to follow so that areas that do not meet the health-based 8-hour ozone standard now will meet that standard in the future.⁶ Under the Clean Air Act, once EPA sets or revises an ambient air quality standard at a level requisite to protect public health, states and EPA are then required to adopt appropriate pollution reduction plans to bring all areas in the country into attainment with the standard. Although EPA had regulated ozone for decades, in 1997 EPA determined that new scientific evidence warranted setting a new, more stringent standard to protect people from ground-level ozone pollution. In setting this standard, EPA considered the risk to sensitive populations, such as children and people with respiratory problems. Exposure to ozone has been linked to a number of health effects, including significant decreases in lung function, inflammation of the airways, and increased respiratory symptoms, such as cough and pain when taking a deep breath. Respiratory systems of children are still developing, and thus are at greater risk from repeated exposure to ozone.

EPA and the states have identified which areas of the country are not meeting the 8-hour ozone standard and are in the process of setting up plans to bring these nonattainment areas into attainment in accordance with the Clean Air Act schedule. Bringing these areas into attainment with the 8-hour ozone standard is an important environmental justice goal; it would make significant progress in providing for the fair treatment of all people with respect to air pollution. Implementing the 8-hour ozone standard will help continue the trend of improving air quality. For the 8-hour ozone standard, 2003 ozone levels were 9% lower than 1990 levels and 21% lower than 1980 levels.

We continue to believe that the Phase I Ozone Implementation Rule does not present environmental justice concerns. Contrary to the misimpression conveyed by the Draft Report, public commenters did not state that the Phase I Rule raised any environmental justice concerns. Nor has GAO identified any environmental justice concerns in the Phase I Rule. This is not surprising given that EPA, taking sensitive populations into account, set the 8-hour standard at a

⁶ In particular, it set forth the classification scheme for nonattainment areas and the requirements for states' continued obligation with respect to the old, 1-hour ozone standard. The Phase I Rule revoked the old, generally less stringent 1-hour standard and adopted measures to avoid backsliding between the time the 1-hour standard was revoked and the time an area meets the 8-hour standard.

See comment 3.

**Appendix IV
Comments from the Environmental
Protection Agency**

level requisite to protect public health with an adequate margin of safety. The implementation process generally, and the Phase I Rule in particular, are designed to ensure that all communities attain and maintain the national, health-based 8-hour ozone standard.

The Draft Report is confusing and misleading because it does not adequately explain when it is referring to the Phase I Rule (which has been finalized) and when it is referring to the proposed Ozone Implementation Rule (many elements of which have not been finalized). EPA initially included all elements of the Ozone Implementation Rule in one proposal (June 2, 2003), but later decided to divide the numerous elements of the proposal into two groups and promulgate the final Ozone Implementation Rule as two separate rules. The first phase was published April 30, 2004, but the second phase has not been finalized. EPA responded to the public comments on the elements in the Phase I Rule, but has not yet responded to comments on portions of the proposal that it has not yet finalized.

In the preamble to the proposed rule, EPA took comment on the Clean Air Development Communities (CADC) concept (regarding possible state adoption of land use planning as a pollution reduction strategy) and noted that it might raise environmental justice concerns. As the Draft Report notes, public comments were submitted that raised environmental justice concerns with this concept. EPA has not responded to these (or any other) comments on the CADC concept because, as GAO notes, this element has not yet been finalized.⁷ Since the Phase I Rule did not include a final decision on the CADC concept, EPA had no obligation to respond to these comments in the Phase I rulemaking. In fact, it is difficult to see how EPA could prepare a response given that we have not yet made any final decision on this element of the proposal.

GAO should state explicitly that the public comments did not raise environmental justice issues on the Phase I Rule and that EPA was not required in that final rule to respond to environmental justice issues on an element of the proposed Ozone Implementation Rule that we

⁷ In fact, EPA believes the CADC concept was never a definitive enough proposal to proceed directly to final rulemaking without a subsequent, more substantive proposal. As part of a larger rulemaking package, it is not uncommon for EPA to take comment on concepts that the Agency is considering but that are not yet developed enough for a full proposal, as it did here. This alerts stakeholders to and facilitates discussion on emerging concepts at an early stage of their development. EPA's use of this approach on the CADC strategy explains the seemingly contradictory statements GAO noted in the preamble to the proposed rule. Although the section on the CADC concept suggested that it might raise environmental justice issues, EPA stated in the "Environmental Justice" discussion that the proposed Ozone Implementation Rule did not raise environmental justice concerns. CADC was an emerging concept on which EPA was attempting to facilitate discussion. Although EPA proposed draft regulatory text for the remainder of the proposal (68 FR 46536 (Aug. 6, 2003)), we did not propose regulatory text for the CADC concept and did not believe it was definitive enough to be considered part of the proposed rule for analytical purposes.

See comment 4.

See comment 5.

have not finalized. The Draft Report is inconsistent (or at least confusing), claiming that public commenters stated that all three rules (which could be read to include the Phase I Rule) raised environmental justice issues, but later noting that EPA has not finalized the element of the proposed Ozone Implementation Rule that prompted the comments about environmental justice. The Draft Report could also be read as criticizing the Agency for failing to respond to environmental justice comments on one element of the proposed Ozone Implementation Rule. Such criticism would be unfair because EPA responded to comments on the issues raised by the elements in the final Phase I Rule, commenters did not raise environmental justice issues on the Phase I Rule elements, and EPA is simply not in a position to respond to comments on a concept on which it has not yet taken final action.

The Tier 2/Low Sulfur Gasoline Rule

The Tier 2/Low Sulfur Gasoline Rule (Tier 2 Rule), which was issued in December 1999, tightened emission standards for cars and light-duty trucks (including sport utility vehicles) and established a low sulfur requirement for gasoline. The low sulfur gasoline requirement was necessary to enable the vehicles' pollution control equipment to operate properly. As a result, we have passenger vehicles that are 77% to 95% cleaner than 2003 vehicles. The rule was designed in large part to help reduce ozone pollution, especially in large, urban areas where emissions from passenger vehicles represent a relatively large contribution to the problem. Limiting passenger vehicle emissions of ozone precursors is one of the keys to ensuring that areas come into (and stay in) attainment with the health-based ozone standards. For example, in the Tier 2 Rule, we estimated that before large numbers of Tier 2 vehicles are on the road, passenger vehicles would represent about 16% of nitrogen oxides (NOx) emissions and 13% of Volatile Organic Compounds (VOC) emissions nationally. These numbers are higher in some urban areas: 34% of NOx and 17 % of VOC in Atlanta, 24% of NOx and 15% of VOC in Charlotte. EPA's Tier 2 analysis estimated that, by the time Tier 2 vehicles are fully phased in, the contribution of passenger vehicles would drop dramatically, to about 5% of NOx and 9% of VOC emissions nationwide.

We agree with GAO that this rule raises potential environmental justice issues. The Draft Report is incorrect in stating or implying that the Agency believes otherwise. In the preamble to the final Tier 2 rule, in a section labeled "Environmental Justice," we stated,

We believe it is important to understand and address concerns relating to potential localized emissions increases from refineries that make significant process changes to meet the requirements of the Tier 2 rule. . . . To this end, the Agency has already taken some actions to mitigate potential environmental justice concerns.

65 FR at 6774. It is clear that the Agency's official position was that Tier 2 raised potential environmental justice issues. Otherwise there would have been nothing to mitigate. Furthermore, EPA officials told GAO that the Tier 2 Rule raised potential environmental justice

See comment 6.

**Appendix IV
Comments from the Environmental
Protection Agency**

issues due to the potential for emission increases at some refineries. In the Preamble to the Final Tier 2 Rule, EPA published its belief that, “Although we expect residual emissions increases at some refineries even after installing the stringent level of emissions controls required under the Act, for the vast majority of areas, we believe that these potential refinery emissions increases will be very small compared to the Tier 2 benefits in those same local areas.” That statement indicates EPA’s belief that Tier 2 would not cause environmental justice issues in the vast majority of areas, but it also demonstrates that EPA understood that some areas (albeit not the vast majority) were facing a potential net increase in emissions and, thus, potential environmental justice issues.

See comment 7.

The Draft Report (particularly the Highlights page) misleadingly creates the impression that EPA did not recognize or address environmental justice concerns, when actually EPA was quite sensitive to them. In fact, EPA took action to address environmental justice concerns based on the potential for such concerns to arise rather than requiring proof that such concerns would arise. Given what EPA knew about the NSR permitting process and the great incentive it gave refineries to make changes without increasing emissions, and given the commitments EPA made regarding the permitting process, EPA staff believed that, as a factual matter, as the rule was implemented, it was unlikely to pose environmental justice concerns. However, EPA recognized that there was the potential for local emissions increases, and thus the potential for environmental justice concerns, and took steps to address that potential.

See comment 8.

The Draft Report should not state that EPA officials told GAO that the Tier 2 rule, as published in final form, did not create environmental justice issues without explaining the context given above and noting that the Agency took steps to address potential environmental justice concerns. The Draft Report also should not state that EPA “published its belief that the rule would not create such [environmental justice] issues” without noting that this statement appeared in the Response to Comments technical support document in a paragraph that acknowledged the potential for environmental justice concerns, that it did not appear in the preamble that was published in the Federal Register, and that the published preamble acknowledged potential environmental justice concerns and set forth steps EPA took to mitigate those concerns.

Having identified potential environmental justice issues (i.e., potential refinery emissions increases), EPA identified the new source review (NSR) permitting process, a largely state-run program required by the Clean Air Act, as the way to address potential increased refinery emissions. Under the NSR permitting program, a refinery that wanted to increase its emissions significantly would have to obtain a permit, which would require local air quality modeling and could require the installation of pollution control equipment. By operating the NSR permitting program (which is designed to provide environmental protection for all citizens) the states are working to achieve the goal of environmental justice, although, as the Draft Report notes, the states are not subject to the environmental justice Executive Order (EO). Some local community representatives noted some concerns with relying on state agencies, but Congress made the decision in the Clean Air Act that local authorities are in a better position than EPA to assess and

**Appendix IV
Comments from the Environmental
Protection Agency**

protect local interests related to emissions increases at existing refineries. EPA did not receive any public comments suggesting that EPA should issue a national rule limiting potential refinery emissions increases resulting from meeting Tier 2 requirements.

Theoretically, EPA could have decided not to issue the low sulfur fuel requirements and the tighter emissions standards for cars and trucks. Even if that option was legally permissible, it was unacceptable. It would have meant foregoing important air quality improvements for the millions of people that are exposed to motor vehicle emissions and resulting air pollution, including people in urban areas and other communities suffering from heavy air pollution burdens. EPA is not aware of any public comment filed by representatives of the environmental justice community, national or local environmental groups, or communities near refineries recommending that EPA not issue the Tier 2 Rule.⁸

GAO does not conclude or suggest that we had a different option for addressing these potential environmental justice issues. Rather, the main conclusion of the Draft Report on this front is that we should have done more analysis so we could better quantify the environmental justice issues. Even if additional analysis could have been done in a meaningful time period, it could not have changed EPA's decision that NSR permitting was the way to address these potential increased refinery emissions.

EPA and various stakeholders focused a significant amount of attention on the permitting process because of conflicting objectives related to the process. Environmentalists and environmental justice representatives desired a robust permitting process to protect air quality in communities near refineries, while refiners saw the permit process as a potential obstacle to timely compliance with the proposed low sulfur rule. Refiners suggested several ways of limiting or removing this "obstacle," including options that would have allowed refiners to make significant emissions increases at the facility while avoiding the permitting process altogether. Representatives of the environmental justice community were particularly troubled by the suggestion that, because of national environmental benefits, refiners would be allowed to increase emissions without going through the local permitting process. Some of the refiners' suggested approaches (which the proposal preamble discussed and on which it took comment) would have limited or eliminated local communities' ability to participate in the permit process.

Because local communities' opportunity for meaningful participation in the permitting process for refineries is itself an important environmental justice value, suggested changes to the permitting process raised environmental justice issues independent of the potential for increased local emissions. The Draft Report seems to miss completely the environmental justice

⁸ Although, in special outreach sessions convened by EPA related to the Tier 2 permitting issues, individual representatives of some local groups said they did not want their air quality to get worse even if there was a net environmental benefit nationally, it is not clear whether they specifically wanted EPA to stop the Tier 2 Rule.

**Appendix IV
Comments from the Environmental
Protection Agency**

See comment 9.

ramifications of the permitting process with respect to local communities' opportunity for meaningful participation – even though the environmental justice EO recognizes the opportunity for public participation as an important component of environmental justice. EPA staff who worked on the Tier 2 rulemaking recall the permitting issue as the one about which environmental justice representatives were most concerned.

Having identified the way to address the potential emissions increases that raised environmental justice concerns and being aware of the environmental justice issues raised by options that would limit public participation in permitting refinery changes, EPA spent a considerable amount of time trying to understand and reconcile the conflicting objectives related to refinery permitting for Tier 2 changes. An OAR environmental justice coordinator was heavily involved in development of EPA's resolution of the permitting process issues and became an ad hoc member of the Tier 2/low sulfur work group around the time the rule was proposed. In addition, a representative from EPA's Office of Environmental Justice (OEJ) was involved in a number of conference calls regarding the permitting issues after the proposed rule was published. GAO's statement that OAR environmental justice coordinators were not involved in the Tier 2 rulemaking is either incorrect or misleading given the coordinator's involvement in the Tier 2-related permitting issues.

The Agency took extraordinary measures to facilitate participation by environmental justice representatives and others in the rulemaking process on these issues. As described in the final rule preamble (65 FR at 6774):

[OAR] and the Alternative Dispute Resolution Team in the Office of the Administrator implemented a national convening process which was designed to bring together a broad spectrum of stakeholders to explore with them their perceptions and views of issues associated with Tier 2 permitting and to assess the potential for a collaborative process to address specific implementation issues at some time in the future. The convening was carried out by an outside neutral who conducted interviews with representatives from selected EPA offices, States, industry, environmental groups, and environmental justice organizations. Second, EPA held informational briefings and provided background materials to the National Environmental Justice Advisory Council's (NEJAC) Air and Water Subcommittee and Enforcement Subcommittee to provide an opportunity for them to provide feedback and recommendations to the Agency. Finally, in October 1999, we met with both national environmental groups and environmental justice advocacy representatives, to discuss their views on the permitting aspects of the proposed rule.

The environmental justice organizations' comments and concerns affected EPA's final action. EPA affirmed the importance of public participation in local permitting decisions and made it clear that none of the measures we adopted would limit public participation in the permitting process, thereby protecting an important environmental justice value. EPA rejected

See comment 10.

many of the methods the industry had suggested for expediting permit decisions or allowing refineries new methods to avoid triggering the permit process. EPA committed to facilitate communication among permit applicants, permitting authorities and community members in the hope that the community concerns could be expressed and resolved as early as possible in the permitting process. EPA also committed to provide broad guidance on Best Available Control Technologies, to issue guidance on potential use of mobile source reductions as offsets, and to form permit teams which would be able to assist, when requested, communities, states and refiners who might have special concerns.

The Draft Report's conclusion that EPA paid "limited" attention to environmental justice issues related to the final Tier 2 rulemaking is contradicted by the amount of time and effort EPA spent resolving issues related to the refinery permitting process, and the fact that EPA ultimately agreed with the position of environmental justice community representatives and rejected many of the industry-supported suggestions for modifying the permitting process for Tier 2-related refinery changes. Further analysis was not required by the environmental justice EO and could not have changed the result.

Heavy Duty Diesel Engines/Low Sulfur Diesel Rule

The Heavy Duty Diesel Engine/Low Sulfur Diesel Rule (Heavy Duty Diesel Rule), which was issued in December 2000, will provide the cleanest running heavy-duty trucks and buses in history. These vehicles will be 95 percent cleaner than today's trucks and buses. As with Tier 2, low sulfur fuel requirements were necessary to enable the engines' pollution control equipment to operate properly. By addressing diesel fuel and engines together as a single system, the rule will reduce 2.6 million tons of smog-causing nitrogen oxide emissions each year once the program is fully implemented. Emissions of soot, or particulate matter, will be reduced by nearly 110,000 tons each year. As a result, the emission reductions will prevent 8,300 premature deaths, 5,500 cases of chronic bronchitis, and 17,600 cases of acute bronchitis in children. It will also avoid over 360,000 asthma attacks and more than 386,000 cases of respiratory symptoms in asthmatic children annually. The rule will prevent 1.5 million lost work days, 7,100 hospital admissions and 2,400 emergency room visits for asthma every year. By any measure, this rulemaking provides significant and meaningful public health protection.

EPA paid an appropriate amount of attention to environmental justice issues during the development of the Heavy Duty Diesel rule, which was proposed just months after the Tier 2 rule was finalized. The environmental justice issues were virtually identical to those that EPA had just resolved as part of the Tier 2 rulemaking process, so EPA relied on the work that had been done during the Tier 2 rulemaking and proposed to resolve the issues the same way.

The heavy duty diesel rule presented essentially the same environmental justice issues as did the Tier 2 rule, with one exception. The rule itself was responsive to specific environmental justice concerns that had been raised by local community groups and environmental groups regarding exposure to diesel exhaust in communities near heavy truck traffic. One report found

that “These affected communities, and the workers at these distribution facilities with heavy diesel truck traffic, are bearing a disproportionate burden of the health risks.”⁹ Numerous environmental justice and local environmental representatives supported the heavy duty diesel rule, and the main environmental justice concern expressed was the need to reduce diesel emissions as soon as possible.

EPA clearly stated early in the development of the diesel rule that it would follow the same approach to permitting (and therefore, the same approach to environmental justice issues related to potential refinery emissions increases) that had been set up for Tier 2-related permits. We did not receive negative comments on this proposed approach by members of the environmental justice community or other public health groups.

The Draft Report’s criticism of EPA for failing to respond to environmental justice comments on the diesel rule appears to be based on a misunderstanding of the rulemaking process. EPA was not obligated to respond to these comments because they were filed on the Advanced Notice of Proposed Rulemaking (ANPRM).¹⁰ The ANPRM was published in May of 1999, while EPA was still involved in the Tier 2 rulemaking and before EPA had finished its outreach efforts with stakeholders and resolved the Tier 2 refinery permitting issues. An ANPRM provides an opportunity for interested stakeholders to provide input to EPA early in the process as the Agency is developing a proposed rule. To the extent appropriate, EPA takes comments on the ANPRM into account in developing the proposal. Although commenters apparently conveyed concerns about localized emissions increases based on the specific request for comments in the ANPRM, they did not repeat these comments once they had the opportunity to review the specific proposal we issued in June, 2000. EPA assumes this is because the commenters were satisfied with the way the proposal addressed the issues. EPA does not have a legal or policy obligation to respond to comments filed on an ANPRM, and it is not OAR’s practice to develop a Response to Comments document for comments on an ANPRM.

OAR’s Environmental Justice Plan

Understanding OAR’s approach to environmental justice requires more than a review of a few isolated rules. To improve air quality in all communities, we start with the base of air quality improvements we can achieve by issuing strong, national rules under the Clean Air Act. Although these national programs are an important component of decreasing environmental risks

⁹ *Exhausted by Diesel: How America’s Dependence on Diesel Engines Threatens Our Health*, Natural Resources Defense Council, Coalition for Clean Air, May 1998.

¹⁰ According to GAO staff, the comments to which we did not respond were on the ANPRM. The environmental justice related comments on the proposal were submitted by refiners and expressed a concern that environmental justice issues would delay permit issuance; EPA responded to these comments.

See comment 11.

**Appendix IV
Comments from the Environmental
Protection Agency**

to all communities, OAR recognizes that they are not wholly sufficient. In some instances, some communities, including minority and low-income communities, will face a higher level of environmental risk than the general population and will need reductions beyond what we can provide through national rules. OAR staff attempt to identify specific areas where minority and low-income populations are being disproportionately exposed to environmental hazards or where there are potential benefits to minority and low-income communities (i.e., through transportation and air quality improvements, mass transit policies, and voluntary programs). Since 1998, OAR staff have worked closely with the National Environmental Justice Advisory Council's (NEJAC's) Air and Water Subcommittee and other grassroots organizations to ensure the integration of environmental justice in our programs, policies, and activities in a manner which is consistent with existing environmental laws and implementing regulations. As a result of these discussions, we are involved in a number of activities that, in collaboration with local communities, focus on getting emission reductions that are of particular concern to those communities.

Since 1970, steps taken under the Clean Air Act have dramatically reduced air pollution in the United States, producing significant health benefits. Many of these emission reductions and health benefits have occurred in both urban and rural areas with environmental justice concerns. Everyday, clean air programs across the nation prevent roughly:

- 600 premature deaths;
- 2,000 cases of chronic illness, such as asthma and bronchitis;
- 300,000 cases of minor respiratory illness, such as aggravated asthma; and
- 75,000 people from missing work.

The cornerstone of the Clean Air Act is the program to set and attain the health-based national ambient air quality standards (NAAQS), which is done for six pollutants. EPA sets these at a level requisite to protect public health with an adequate margin of safety. In doing so, the standards are to protect sensitive populations, such as the elderly, children or people with respiratory or circulatory problems. EPA then works with states and tribes to set up monitoring networks to determine which areas do not meet the standards. Often these areas are urban areas. Each state is then responsible for ensuring that all areas within its authority meet the standards on a schedule set out in the Clean Air Act. EPA has oversight authority over the state plans and has authority to issue some national rules that will help areas meet the standards. The goal of the NAAQS program is clean air (as defined by the standard) everywhere. Achieving this goal should address environmental justice issues with respect to these regulated pollutants in most, if not all, communities. OAR has identified continued review and implementation of the NAAQS as one of its key environmental justice initiatives.¹¹

We are making great progress in meeting these standards, as shown in Table 1 above. Nationally, since 1970, the country has reduced its emissions of these key pollutants by 50%.

¹¹ OAR 2004-05 EJ Action Plan at Page A-2.

In 1997, EPA tightened the ozone standard, setting a new 8-hour ozone standard, and, for the first time, set a standard for fine particles (PM_{2.5}). EPA recently designated 112 areas nonattainment for the 8-hour ozone standard (effective 2004) and 47 areas nonattainment for the PM_{2.5} standard (effective in 2005). Although we are at the beginning of the Clean Air Act process for bringing these areas into attainment, we have already taken significant steps to provide them with cleaner air. For nonattainment areas in the eastern half of the country, which are significantly affected by transported pollution from other states, all but five ozone areas and 14 PM_{2.5} areas are projected to come into attainment by 2015 as a result of the Clean Air Interstate Rule (CAIR, issued March 9, 2005) combined with the Tier 2 and Heavy Duty Diesel Rules and other existing state and federal programs. Additional state or local controls will be needed to bring the remaining areas into attainment.

Emissions of air toxics, which are covered by a different Clean Air Act regulatory regime, are of particular interest to the environmental justice community because of the proximity of many minority and low-income communities to the generators of toxic emissions (e.g., industrial facilities, waste transfer stations, roadways, bus terminals). EPA rules issued since 1990 are expected to reduce emissions of 188 air toxics by 2.5 million tons a year from chemical plants, oil refineries, aerospace manufacturing and other industries. Motor vehicle and fuel programs put in place since 1990 will reduce total vehicular air toxics by approximately 40 percent.

In addition to national rulemakings, OAR is focusing additional resources on nonregulatory programs, in part due to environmental justice concerns. OAR is leading an agency-wide effort to develop and implement a new community-based, multi-media toxics program, the Community Action for a Renewed Environment (CARE) program. CARE is designed to help communities develop collaborative partnerships to examine and reduce the cumulative risk from toxics, including air toxics, in their communities. While CARE is not limited to environmental justice communities, it is designed to address the needs of those communities. EPA also has an idle reduction program to reduce air pollution and conserve fuel from idling trucks and locomotives. EPA has set up non-regulatory, incentive-based, voluntary programs designed to reduce air pollution from existing school buses and other diesel engines by replacing old buses and by installing pollution-reducing technology.

Factual Inaccuracies and Omissions

We have attached a list containing some of the additional, specific problems with the Draft Report.

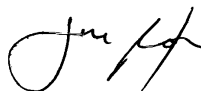
Conclusion

EPA agrees with GAO that EPA should ensure that it devotes attention to environmental justice when developing Clean Air Act rules. We believe the three final rules reviewed in the Draft Report demonstrate that EPA devoted appropriate attention to environmental justice issues.

**Appendix IV
Comments from the Environmental
Protection Agency**

The evidence regarding EPA's consideration of environmental justice during development of three final rules does not support the conclusions and recommendations in the Draft Report.

Sincerely,



Jeffrey R. Holmstead
Assistant Administrator

Attachment

The following are our comments on the Environmental Protection Agency's letter dated June 10, 2005.

GAO Comments

1. We disagree with EPA's assertion that the Air Office paid appropriate attention to environmental justice issues. We found that EPA devoted little attention to environmental justice in four phases of drafting the rules and considered environmental justice to varying degrees in the three phases of finalizing them. EPA provided virtually no new information on its activities during these phases.
2. EPA was referring to our report entitled *Clean Air Act: EPA Has Completed Most of the Actions Required by the 1990 Amendments, but Many Were Completed Late*, [GAO-05-613](#) (Washington, D.C.: May 27, 2005).
3. As we stated, several public commenters said that the ozone implementation rule, as proposed in June 2003, could have potential environmental justice impacts. As we also stated, in April 2004, EPA finalized a portion of the ozone implementation rule, which it then called Phase I; but it did not include the provision that drew the public comments on environmental justice. EPA officials are still considering this provision for a second phase of the rule implementing a new ground-level ozone standard, called Phase II. It is true, as EPA stated, that we did not identify any environmental justice issues in the Phase I rule. However, our objective was not to identify such issues with the rules, but to review how EPA considered environmental justice in developing the rules.
4. On the basis of EPA's letter, we added clarification about the "seemingly contradictory statements" in our discussion of the ozone implementation rule.
5. As we stated, public commenters did raise such issues about all three rules as they were proposed. As we also stated, EPA did not finalize the portion of the ozone implementation rule that it, and others, said could raise environmental justice issues.
6. While EPA stated that our report is misleading and needs further explanation of context, it is not clear from EPA's comments how the agency would want us to frame this issue differently. First, EPA comments that EPA staff believed that, as a factual matter, as the rule

was implemented, it was unlikely to pose environmental justice issues. Similarly, we state in the report that EPA officials believed that the final rules did not create environmental justice issues. Second, EPA stated that we should note the steps that the agency took to address potential environmental justice concerns. We did so, noting EPA's discussion of these steps in the final rule. Moreover, in its letter, EPA stated that it agreed with us that the gasoline rule (finalized in February 2000) would create "potential environmental justice issues." It was public commenters, not we, who raised concerns about potential environmental justice issues.

7. We clarified in the *Highlights* page and other portions of the report to note that EPA officials told us, after the rules were finalized, that none of the rules created an environmental justice issue.
8. We clarified the source of EPA's statements. The preamble of the final rule is discussed in our report.
9. According to EPA, we stated that the Air Office's environmental justice coordinators were not involved in the gasoline rulemaking. In fact, we stated only that the coordinators were not involved in developing the rule, as opposed to public outreach efforts, where they were involved. EPA's description of how and when a coordinator was involved buttressed our point. According to EPA's letter, the environmental justice coordinator was involved only in resolving "permitting process issues" and became involved only "around the time the rule was proposed." Similarly, according to EPA's letter, the Office of Environmental Justice representative was involved only in discussions of "permitting issues" and only "after the proposed [gasoline] rule was published." Thus, it appears that in neither case were they substantively involved in drafting this rule. We added language in the report clarifying the discussion of the process.
10. As EPA noted, it devoted resources to seeking public involvement while finalizing the gasoline rule. Accordingly, we changed our characterization of EPA's efforts in finalizing the three rules.
11. EPA's public involvement policy provides that it will, to the fullest extent possible, respond to public comments. We did not see a distinction in the policy between comments on Advanced Notices of Proposed Rulemaking and comments on proposed rulemakings. However, EPA interprets its policy as requiring a response to comments

**Appendix IV
Comments from the Environmental
Protection Agency**

on the latter but not the former, and we have revised our report accordingly.

GAO Contact and Staff Acknowledgments

GAO Contact

John B. Stephenson (202) 512-3841

Staff Acknowledgments

In addition to the individual named above, the key contributors to this report were John Delicath, Michael A. Kaufman, David Marwick, Thomas Melito, and Daniel J. Semick. Tim Guinane, Anne Rhodes-Kline, and Amy Webbink also made important contributions.

GAO's Mission

The Government Accountability Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday, GAO posts newly released reports, testimony, and correspondence on its Web site. To have GAO e-mail you a list of newly posted products every afternoon, go to www.gao.gov and select "Subscribe to Updates."

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are \$2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. Government Accountability Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone: Voice: (202) 512-6000
TDD: (202) 512-2537
Fax: (202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Gloria Jarmon, Managing Director, JarmonG@gao.gov (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, D.C. 20548

Public Affairs

Paul Anderson, Managing Director, AndersonP1@gao.gov (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, D.C. 20548