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Federal Land Managers' Air Quality Related Values Work Group (FLAG) *Response to Public Comments on Revised Phase I Report (2010)*





ON THE COVER

Marble Mountain Wilderness, California.
Photo by Steve Boutcher

THIS PAGE:

Okefenokee National Wildlife Refuge, Georgia.
Photo by George Gentry

Federal Land Managers’ Air Quality Related Values Work Group (FLAG)

Response to Public Comments on Revised Phase I Report (2010)

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Recreational Wildlife Watching at Bosque del Apache National Wildlife Refuge.
Credit: U.S. Fish and Wildlife Service/Debbie McCrensky.



Echo Ridge Ski Trail at Glacier Peak, Washington.
Credit: U.S. Forest Service.



View down the Colorado River in Grand Canyon National Park, Arizona.
Credit: National Park Service/Mike Quinn.

1. Introduction

The Federal Land Managers' Air Quality Related Values Work Group (FLAG) was formed to develop a more consistent approach for the Federal Land Managers (FLMs) to evaluate air pollution effects on their resources. The primary—but not sole—focus of FLAG is the New Source Review (NSR) program, especially with respect to the review of Prevention of Significant Deterioration (PSD) of air quality permit applications. The goals of FLAG have been to provide consistent policies and processes both for identifying air quality related values (AQRVs) and for evaluating the effects of air pollution on AQRVs. While the primary focus of AQRV protection has been in Federal Class I air quality areas, we are also responsible for protecting AQRVs in Class II areas. FLAG members include representatives from the three primary agencies that administer the nation's Federal Class I areas: the U.S. Department of the Interior's National Park Service (NPS) and Fish and Wildlife Service (FWS) and the U.S. Department of Agriculture's Forest Service (FS).

Both state permitting agencies and permit applicants requested that the FLMs provide better consistency pertaining to their role in the review of NSR permit applications near Federal Class I areas. To address this concern, the FLMs formed the FLAG and published the original Phase I report in December 2000 (FLAG 2000). The FLAG 2000 report provided state permitting authorities and potential permit applicants a consistent and predictable process for assessing the impacts of new and modified sources on AQRVs, including a process to identify those AQRVs and potential adverse impacts.

The FLMs formed four separate subgroups to deal with general policy issues, and area-specific technical and policy issues associated with visibility impairment, ozone effects on vegetation, and effects of pollutant deposition on soils and surface waters. FLAG 2000 consolidated the results of those four subgroups.

FLAG 2000 has been a useful tool to the FLMs, state permitting authorities, and permit applicants. It was intended to be a working document that would be revised as necessary as the FLMs learn more about how to better assess the health and status of AQRVs. Based on knowledge gained and regulatory developments since FLAG 2000, the FLMs believe certain revisions to FLAG 2000 are now appropriate. The revised report (FLAG 2010) reflects those changes.

A “notice of availability” of the draft FLAG 2010 report was published in the July 8, 2008, *Federal Register*¹, and the FLMs provided a 60-day public comment period. The FLMs also offered to conduct a public meeting to discuss the proposed changes to the FLAG report, but there was not sufficient public interest to warrant such a meeting.

During the public comment period, many commenters raised specific concerns, and many supported the proposed revisions in general and thought that the changes were warranted and helpful. The FLMs considered all comments received and revised the FLAG 2010 report accordingly. This *Response to Public Comments* document, which accompanies the FLAG 2010 report, discusses the public comments and provides the FLMs' rationale for accepting or rejecting the comment. Many of the comments addressed common themes. Therefore, to the extent possible, the FLMs responded to common issues raised, rather than addressing each comment individually. Also, some commenters took the opportunity to comment on proposed changes to the FLAG report as a way of revisiting issues that the FLMs addressed in FLAG 2000 and were not proposing to change in FLAG 2010. For completeness, we have included those comments and reiterated our position on those issues. The FLMs' responses to specific Policy, Visibility, Ozone, and Deposition issues follow in subsequent sections of this report. The Appendix includes a list of all public commenters (in no particular order), and a brief summary of the issues that they raised in their comments. This *Response to Comments* document, the complete text of all public comments received, and the final FLAG 2010 report are available on the NPS website at: <http://www.nature.nps.gov/air/Permits/flag/index.cfm>. Finally, the FLMs appreciate the input from those that participated in the FLAG revision process. In finalizing the FLAG 2010 report, the FLMs did not make any major technical or policy changes from the draft revised report. However, the FLMs did make some editorial changes, inserted some clarifying language, and reformatted the report to make it more user friendly as a result of comments received. Therefore, the FLAG 2010 report benefited from the public review process and is an improved document as a result of public input.

1. 73 Fed. Reg. 39039

2. Response to Policy Comments

This section provides FLM responses to public comments received on the policy sections of the draft FLAG Phase I Revised Report (FLAG 2010). The section is organized by key issues raised by the commenters.

2.1. FLAG is guidance not a rule

Comment: Several commenters asserted that FLAG is an agency rule or regulation, and as such, is subject to requirements under the Administrative Procedure Act (APA).²

Response: Although the FLMs have an “affirmative responsibility” to protect Air Quality Related Values (AQRVs), they have no permitting authority under the Clean Air Act (CAA)³ and thus no authority under the CAA to establish air quality-related rules or standards. The FLM’s primary role consists of considering whether emissions from a new or modified source may have an adverse impact on AQRVs and providing comments to permitting authorities (states or EPA). We also evaluate the amount of PSD increment consumed in our areas, and provide comments on other aspects of the NSR process, such as emissions control technology, permit conditions, and enforceability, in order to minimize the impacts on AQRVs. The FLAG report is a guidance document that explains factors and information the FLMs expect to use when carrying out their consultative role. Therefore, it is not an administrative or agency rule subject to informal rulemaking procedures under the APA, or any other statutory requirements.

Guidance documents themselves do not create rights and responsibilities under the law, and guidance documents are not legally binding on outside parties or on the agencies. Instead, guidance documents explain how the agency believes the law applies to certain regulated activities. That is, it represents the agencies’ current thinking on the kinds of information permittees should include in permit applications so the FLMs can assess what impacts(s) the proposed emissions may have on AQRVs in areas administered by the FLMs. For the benefit of the agencies and the public, the FLAG report describes the steps and processes that an agency intends to go through in order to perform its statutory duties.

The Office of Management and Budget (OMB) in 2006 issued a final bulletin on *Good Guidance Practices* to establish general policies to “ensure that guidance documents of Executive Branch departments and agencies are: Developed with appropriate review and public participation, accessible and transparent to the public, of high quality, and not improperly treated as legally binding requirements.”⁴ In the bulletin, the term “guidance document” is defined as “an agency statement of general applicability and future effect, other than a regulatory action . . . that sets forth a policy on a statutory, regulatory or technical issue or an interpretation of a statutory or regulatory issue.”⁵

Although FLAG, as a guidance document, cannot legally bind the participating FLMs, each FLM recognizes the value of guidance documents in providing consistency and predictability. Therefore, each FLM will take steps to encourage their employees to conduct their permit reviews consistent with the processes in the FLAG report, recognizing that there is flexibility and discretion for case-by-case consideration built into the process. Based on our past experiences, permittees want assurances that the FLMs will act or respond in a certain manner, and that if they (the permittees) follow certain recommended procedures, the FLMs will be satisfied. Moreover, the agencies issue guidance to their staffs so that they will apply the CAA and its regulations in a consistent manner.

Again, the FLAG report is not a rule. Rules are generally defined as agency statements of general applicability and future effect that the agency intends to have the force and effect of law. As discussed above, the FLAG report does not purport to do so.

The OMB requires agencies to provide for notice and comment in the *Federal Register* for “economically significant” guidance documents.⁶ Even though the FLAG Report does not meet the definition of “economically significant,” the public received notice that the FLMs intended to revise the FLAG report and had the opportunity to comment on it.

2. 5 U.S.C. § 500 et. seq.

3. 42 U.S.C. 7401 et. seq.

4. 72 Fed. Reg. 3432, 3433 (Jan. 25, 2007).

5. Id. at 3439.

6. Id. at 3439.

2.2. FLM Authority to Evaluate Impacts on Class II areas

Comment: Several commenters stated that FLAG should not expand FLM review authority to include Class II lands. They assert that the FLM role regarding AQRV protection under the CAA is limited to Class I areas, not impacts to Class II lands.

Response: As a guidance document, FLAG does not expand FLM authority in any context. Regarding impacts on Class II areas, Section 165(e)(3)(B) of the CAA requires PSD applicants to conduct an analysis “of the ambient air quality, climate and meteorology, terrain, **soils, vegetation, and visibility** at the site of the proposed major emitting facility and in the area potentially affected by the emissions from such facility...” (emphasis added) EPA consequently promulgated implementing regulations for this “Additional impacts analysis.”⁷ Since applicants are required to assess impacts on any area potentially affected by the emissions from proposed PSD facilities, the FLMs can use this information to evaluate impacts on specific Class II Federal areas that may be affected by the proposed source. This is also consistent with the purposes of the PSD program, which include “to preserve, protect, and enhance the air quality in national parks, national wilderness areas, . . . and other areas of special national or regional natural, recreational, scenic, or historical value.”⁸ Thus, the CAA provides an opportunity for FLMs to make recommendations on major source permitting activities regardless of the designation status (i.e., Class I or Class II) of the area under consideration.

In addition, the FLMs have significant congressional direction other than the CAA for protecting areas that they manage. The Property clause of the United States Constitution delegates the power to Congress to make all needful rules respecting property belonging to the United States.⁹ For example, this authority has been delegated to the Secretary of Agriculture and to the Forest Service through the Organic Administration Act of 1897.¹⁰ This Act directs the Secretary of Agriculture to “... make provisions against destruction by fire and depredations upon the public forests and national forests...” The magnitude of air pollution impacts to National Forest System areas can be classified as a depredation. The Organic Administration Act does not make distinctions among areas subject to air pollution depredations because of their air quality designation. As such, the Agency should exercise all legal authorities to protect all National Forest Systems areas from air pollution depredation.

Similarly, the National Park Service’s Organic Act¹¹ directs the National Park Service to “conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.” This Congressional direction applies to all NPS units, not only those designated as Class I under the CAA.

The National Wildlife Refuge Administration Act¹² directs the Fish and Wildlife Service to manage Refuge System lands to “ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans.” This Congressional direction applies to the management of all Refuge System areas, not only those designated as Class I through the CAA.

In addition, the Wilderness Act of 1964 applies to all wilderness areas administered by the Departments of the Interior and Agriculture, not only those areas provided with a certain air quality designation by the CAA. It is evident in the language of the Wilderness Act that Congress wanted all wilderness areas to be protected from human-caused influences.

Section 2. (a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness.

Section 2. (c) An area...which is protected and managed so as to preserve its natural conditions...

Air pollution affects the natural conditions of air quality related values in wilderness.

The CAA does not limit federal agencies’ responsibilities and authorities in other statutes such as their respective Organic Acts and the Wilderness Act. For example, 42 USC 7610(a) states that “this Act shall not be construed as superseding or limiting the authorities and responsibilities, under any other provision of law, of the Administrator or any other Federal

7. 40 CFR 52.21(o)

8. 42 U.S.C. 7470(2)

9. U.S. Constitution, Article IV, Section 3, c12

10. 16 U.S.C. 551.

11. 16 U.S.C. 1

12. 16 U.S.C. 668dd(a)(4)(B)

officer, department or agency.” Given the above direction from Congress on how FLMs should manage and protect federal areas, and the opportunities provided by the PSD sections of the CAA for protecting all federal areas, it is appropriate for FLMs to review impacts to Class II areas that they administer.

In summary, Congress has given FLMs clear direction and several authorities—including but not limited to the CAA—to protect the areas they administer. Air pollution has the ability to significantly impact areas designated either as Class I or Class II under the CAA. Congress, in the CAA, recognized that federal agencies and departments have other statutes to comply with and specifically stated that the CAA shall not supersede or limit their authorities and responsibilities. It would be inconsistent with other federal law if FLMs did not consider and utilize other congressional authority to prevent air pollution impacts to all areas administered by their agencies, including Class II areas. Therefore, it is proper and appropriate for FLMs to exercise their respective authorities in protecting Class II areas from air pollution impacts.

2.3. Cumulative Impact Analysis

Comment: FLMs should ask EPA to clarify the CAA requirements with respect to cumulative AQRV analyses.

Response: The FLMs did make such a request as part of the Western States Air Resources Council’s New Source Review Reform recommendations submitted to EPA in May 2005.

Comment: Several commenters stated that the CAA only requires an analysis of an individual permit applicant’s impact, as opposed to an analysis of the cumulative impacts of other operating and proposed sources, on Class I areas. These commenters asserted that the FLMs have no authority to consider cumulative impacts from other sources.

Response: A limited review calling for only an analysis of an individual permit applicant’s impact is not supported by language in Section 165 of the CAA. To fulfill the affirmative responsibility to protect Class I values under the PSD program, as mandated by section 165(d), as well as agency-specific mandates to protect all administered areas, the FLM must consider a proposed new source in the context of existing, expected, and known impacts. Furthermore, Section 165(d)(2)(C)(i) makes clear the need to consider cumulative impacts in making an adverse impact determination. This section states in part, “. . .where the Federal official . . .or the Federal Land Manager . . .files a notice alleging that emissions from a proposed major emitting facility may cause or **contribute to a change** in the air quality . . .” (emphasis added). The most logical and most scientifically sound manner in which to address the real impacts of a proposed pollution source is to consider it as it relates to and may add to, already present activities and those permitted polluting activities that are pending but may not already be in operation.

With respect to visibility, EPA’s 1980 visibility regulations require an assessment of cumulative impacts on visibility from existing and permitted (but not yet constructed) sources in addition to the new source:

EPA has always regarded permitted sources as part of existing background. **For instance, in assessing impacts on the national ambient air quality standards, permit applicants must account for the air quality impacts of permitted, as well as constructed, sources. This treatment should be the same for visibility assessment. The EPA does not believe that a change in the proposed language for new source review is necessary to effect this implementation.** The EPA concludes that the proposed language on assessing whether a proposed source will cause an adverse impact on visibility requires the reviewing authority to review the new source’s impact in the context of background visibility impacts caused by both existing and previously permitted sources.¹³ (emphasis added).

The U.S. E.P.A. Environmental Appeals Board has explicitly recognized the requirement for a cumulative visibility analysis:

Petitioners are correct that under EPA rules, in determining whether a proposed source will cause an adverse impact on visibility, the cumulative visibility impacts of the pending PSD applicant **and all PSD-permitted sources, including those not yet constructed**, must be assessed against background visibility conditions.¹⁴ (emphasis added).

13. 50 Fed. Reg. 28548 (July 12, 1985).

14. *In the Matter of: Old Dominion Electric Cooperative Permit Application*, PSD Appeal No. 91-39 (1992 EPA App. LEXIS 37; 3 E.A.D. 779).

Note: This language does not negate the intent that a new source’s impact on visibility is to be measured compared to natural background visibility. Visibility impairment is defined as “any humanly perceptible change in visibility . . . from that which would have existed under natural conditions” (40 C.F.R. §51.301). States “must ensure that (a) source’s emissions will be consistent with making reasonable progress toward the national visibility goal . . .”(40 C.F.R. §51.307(c)). The visibility goal—natural conditions by 2064—has been codified in the Regional Haze Rule (40 C.F.R. §51.308(d)(1)(i)(B)), and that goal was upheld by the D.C. Circuit Court in 2002 (*American Corn Growers Assoc. v. EPA*, No. 99-1348 (D.C. Cir. May 24, 2002)).

Therefore, the FLMs believe that current pollutant concentrations and AQRV effects caused by existing and permitted but not yet built pollutant sources are relevant factors in making a determination as to whether or not the proposed new source will have an adverse impact on AQRVs.

2.4. Permit Applicant vs. FLM Role in AQRV Impact Analyses

Comment: One commenter noted that FLAG should clarify that it is the applicant's responsibility to conduct an AQRV impact analysis and that the FLM makes adverse AQRV impact determinations. On the other hand, several commenters stated that, by asking permit applicants to perform AQRV impact analyses, FLAG exceeds the FLM's statutory authority by shifting the burden of proof from the FLM to the permit applicant when the PSD Class I increment is not violated. These commenters assert that, when the increment is not violated, it is the FLM's responsibility to perform all AQRV analyses.

Response: We agree with the first-noted commenter that it is the applicant's responsibility to conduct the AQRV impact analysis, and that the FLM then uses that analysis to determine if the potential impacts are adverse. The other commenters' assertion that a permit applicant is not required to perform an AQRV impact analysis unless the proposed source would cause or contribute to a Class I increment violation is incorrect. The applicant must perform the AQRV analysis as part of a complete application, regardless of the increment status.

The legislative history and current EPA regulations and guidance support the FLMs' position that it is the applicant's responsibility to provide the information necessary to allow the FLM to make an informed decision about potential adverse impacts on AQRVs.¹⁵ For example, EPA's *New Source Review Workshop Manual*, which has been widely disseminated to permitting agencies and relied on in permit appeals,¹⁶ states on page E.12, "When a proposed major source's or major modification's modeled emissions may affect a Class I area, the **applicant analyzes the source's anticipated impact on visibility and provides the information needed to determine its effect on the area's other AQRVs.**" (emphasis added). Other references throughout Chapter E also refer to the applicant's AQRV analysis. For example, page E.20 states that EPA recommends that the State not consider a permit application complete "until the FLM certifies that it is "complete" in the sense that it contains adequate information to assess adverse impacts on AQRVs."

A September 10, 1991, EPA Memorandum from the Director, Air Quality Management Division, states that a source is required to perform an AQRV analysis even if it has insignificant impacts on Class I increments. In this policy memorandum, EPA makes clear that the increment test is not to be used for determining whether a source would conduct an AQRV analysis or have an adverse impact on a Class I area. Rather, the FLM determines the need for an applicant to perform a full assessment of impacts on AQRVs based on an analysis of the proposed source's (and other cumulative) potential impacts on a value for that particular Class I area. This analysis is independent of the inquiry into whether a proposed source would have a significant impact on any applicable Class I increment. In addition, the visibility protection provisions require FLM notification of a proposed source that may affect visibility in a Class I area and that notification "must include an analysis of the anticipated impacts on visibility."¹⁷

FLMs view the AQRV analysis as just one part of the permit application. It is the permit applicant's responsibility to provide Best Available Control Technology (BACT) and increment/ambient standards modeling analyses to enable the permitting authority to determine whether the proposed source complies with these requirements. Similarly, the permit applicant should provide analyses that estimate fine particle concentrations and deposition impacts associated with emissions from the proposed source or modification. To assist the permit applicant in performing any necessary AQRV-related analyses, the FLMs will provide all available information about any AQRV for that particular federal Class I area that may be adversely affected by emissions from the proposed source and recommend methods the applicant should use to analyze the potential effects on such AQRVs.

Several commenters suggested that, because it is the FLM's responsibility to make an adverse impact demonstration, it is also the FLM's responsibility to perform any air quality analyses needed to assess AQRV impacts. The FLMs agree that, when the Class I increments are not violated, it is the FLM's responsibility to "demonstrate" to the permitting authority if a proposed source would cause or contribute to an adverse impact on an AQRV. However, this demonstration is to be based on the applicant's analyses of changes in relevant air quality parameters (e.g., visibility extinction, acid deposition), and these

15. See EPA's *New Source Review Workshop Manual* (October 1990), *Guideline on Air Quality Models (Revised)* (EPA-450/2-78-02R (Revised 2005)), *Interagency Workgroup on Air Quality Modeling (IWAQM) Phase 1 Report: Interim Recommendation for Modeling Long Range Transport and Impacts on Regional Visibility* (EPA-454/R-93-015, April 1993).

16. See, e.g., *Inter-Power of New York, Inc.*, 5 E.A.D. 130, March 16, 1994

17. 40 CFR 51.307(a)(1).

analyses are required as part of a complete application. The FLM then considers the results of these analyses and any other relevant information in the adverse impact demonstration. If the FLM determines that an adverse impact would occur, the FLM would bear the burden of demonstrating to the permitting authority why such impact is adverse. If the permitting authority is “satisfied” with the FLM’s demonstration, it will not issue the permit. This process is consistent with the direction given in the CAA §165. FLAG guidance reflects the respective responsibilities of the FLMs, permit applicants, and permitting authority, and does not shift any burden from one party to another.

Therefore, the position of the FLMs is that the PSD applicant should bear the costs of analyses which will ascertain the impact of the applicant’s proposed project on natural resources under the control and jurisdiction of the FLMs, even when this information is used to satisfy the FLMs’ affirmative duty to protect Class I areas. Further, as noted above, this position is consistent with long-standing EPA practices in its Best Available Control Technology and other programs, and is grounded in Congressional direction and agency regulation.

2.5. Permitting Authority vs. FLM Responsibilities

Comment: Several commenters requested that FLAG clarify that permitting authorities have the ultimate responsibility of establishing AQRVs, making final determinations of whether or not a proposed source will have an adverse impact on AQRVs, and for deciding whether or not to issue a PSD permit.

Response: The CAA is clear with regard to respective authorities. For example, Section 165(d)(2)(B) of the CAA is clear that the FLMs have “an affirmative responsibility to protect the air quality related values (including visibility) of any such lands within a class I areas and to consider...whether a proposed major emitting facility will have an adverse impact on such values.”

The permitting authority has the ultimate responsibility to issue or deny a permit. However, FLMs have the responsibility to identify AQRVs and to determine whether or not a source will have an adverse impact on those AQRVs. The permitting authority can agree or disagree with the FLMs’ determination. Furthermore, the EPA’s Environmental Appeals Board has ruled that States do not have “unfettered discretion” to reject an FLM’s adverse impact determination, and must provide a “rational basis” for disagreeing with the FLM’s findings.¹⁸

2.6. Initial Q/D screening criteria

Comment: Numerous commenters raised concerns with the proposed “Quantity over Distance” (Q/D) screening criteria. The comments were far ranging. Some felt that the Q/D = 10 approach was too conservative and the level should be higher, while others felt that there should be no screening criteria and that the FLMs should review every application.

Response: The FLMs are notified of a large number of permit applications each year. However, only a small number of these applications are likely to result in potential adverse impacts. Due to the volume of notifications, and the limited resources to review every single one, the FLMs must rely on some screening criterion to help select the applications of most importance to review. The NPS and FWS evaluated all of the permit applications that it reviewed over the past 25 years and found that no projects resulted in any significant AQRV impacts if the Q/D was 10 or less. We recognize that the FLAG Q/D test is not AQRV specific and that there may be some double counting of emissions. The nature of a screening criterion is to be conservative and to provide a reasonable assurance that the sources that pass the screen are indeed de minimis and not of concern. Similarly, the EPA independently determined that a comparable Q/D = 10 screening approach was appropriate for sulfur dioxide and nitrogen oxides emissions under the Best Available Retrofit Technology (BART) provisions of its Regional Haze Rule. Therefore, based on our review and for consistency with the Regional Haze Rule, the FLMs have determined that a Q/D = 10 threshold is appropriate as a de minimis level to screen out those small sources that would be located more than 50 km from a Class I area. Consequently, the FLMs have retained the Q/D =10 screening criteria in the final FLAG 2010 report.

Comment: Some commenters felt that “Q” should be limited only to the relevant pollutant species (e.g., sulfur dioxide for Sulfur deposition).

Response: As noted above, the developed Q/D approach is not AQRV specific, and the total amounts of pollutants of concern should be used in the calculation regardless of the specific AQRV under consideration.

18. Hadson Power 14—Buena Vista, PSD Appeal Nos. 92-3, 92-4 & 92-5 (October 5, 1992)

Comment: One commenter asked for clarification regarding what emissions to include in the calculation (i.e., project emissions or total emissions).

Response: For new sources, applicants should sum all of the visibility-impairing pollutants of concern to reach a total Q value for the project, whereas for modified sources, applicants should only include the emission increases associated with the modification, not the total from the facility.

Comment: One commenter asked if the Q/D approach would be applied to potential cumulative impacts.

Response: No; the Q/D approach is only used as an initial screening criterion to determine if a particular source warrants further FLM review.

Comment: Some commenters asked for the basis for limiting the Q/D test for sources greater than 50 km from a Class I area.

Response: The Q/D test is limited to long-range transport applications, because the FLMs were not able to establish a de minimis level for the coherent plume analysis performed for distances less than 50 km. Therefore, the Q/D screening approach is limited to sources greater than 50 km from a Class I area.

Comment: Several commenters suggested that there should be some maximum distance limit (e.g., 300 km) for the FLMs' review.

Response: The CAA does not establish any distance criteria with respect to the FLMs' "affirmative responsibility" to protect air quality related values in Class I areas. Currently, FLAG relies on the EPA-approved CALPUFF dispersion model to assess new source impacts on Federal areas beyond 50 km. The EPA's Guideline on Air Quality Models identifies CALPUFF as a long-range transport model for use at distances between 50 km and 300 km; use of CALPUFF outside of this range is currently considered on a case-by-case basis. As modeling capabilities advance, impacts of sources beyond 300 km may be more routinely assessed in the future. In any event, with FLAG 2010's proposed Q/D initial screening test, only very large sources (i.e., those greater than 3,000 tons per year) located beyond 300 km would be assessed.

A hypothetical example provided by one of the commenters underscores our concern with an outer distance limit. The commenter notes that no outer distance limit could theoretically result in analysis having to be done for a 25,000 ton-per-year source located 2,500 km away from a Class I area (i.e., the distance from Cheyenne to Washington D.C.). First, given the number and geographic location of Class I areas, it would be impossible for the nearest Class I area to be such a far distance away. More importantly, it is difficult to conceive that a new source applying Best Available Control Technology could have a Q-value that high. Nevertheless, such a 25,000 ton-per-year source located more than 300 km from a Class I area could have significant air quality impacts at the Class I area and should not be automatically exempt from FLM review.

2.7. Natural Background Data

Comment: Several commenters stated that the FLMs should only use the annual average natural background values in the visibility impact analysis, while others said that the FLMs should use the 20% best natural background conditions.

Response: FLAG 2000 uses annual average data based on earlier National Acid Precipitation Assessment Program (NAPAP) estimates in establishing natural background conditions. FLAG 2010 continues to use annual average data, but now uses EPA's more recent Regional Haze Rule data instead of the NAPAP estimates. In addition, in its BART rule, EPA initially considered requiring states to use the 20% best visibility data rather than the annual average data in the required visibility assessments. However, EPA later deferred to the states to use either annual average or 20% best background data. For consistency with implementing the BART provisions, and the Regional Haze Rule in general, and so as not to undermine those states that opted to use the 20% best visibility data in their visibility State Implementation Plan (SIP), FLAG 2010 provides that the FLM or permitting authority may recommend using the 20% best natural background values. For example, if a state is using 20% best data as part of its visibility SIP, the FLMs would expect new sources proposing to locate in that state to also use 20% best background data in its Class I visibility analyses. In addition, if a source is proposing to locate in a state that opted to use annual average data in its visibility SIP, but impacts Class I areas in a state that is using 20% best data in its SIP, the FLMs would expect that source to also use 20% best background data in its Class I visibility analyses.

2.8. Clean Air Interstate Rule (CAIR)

Comment: Several commenters noted that the Clean Air Interstate Rule has been vacated and that the FLAG language should be revised to reflect this development.

Response: The FLMs have changed the language in the final FLAG report to reflect CAIR's remand and its likely replacement by a new transport rule.

2.9. Completeness and Best Available Control Technology (BACT) Reviews

Comment: A few commenters stated that the FLMs wrongly assert themselves into the permitting process by wanting to be involved in application completeness and BACT reviews.

Response: The FLMs' desire to be involved in the completeness review is to minimize delays in the permitting process by ensuring all needed information to complete our review is included in the permit application. As noted above in reference to AQRV impact analyses, the EPA Workshop Manual states that EPA recommends that the State not consider a permit application complete "until the FLM certifies that it is "complete" in the sense that it contains adequate information to assess adverse impacts on AQRVs." Regarding BACT, the public review process gives the FLMs the right to review and comment on the applicant's and permitting authority's control technology analyses as it similarly allows other interested parties to do the same. FLMs have the opportunity to provide information to the permitting agency on BACT, based on their knowledge of control equipment capabilities and permit limits proposed or being required in permits around the country. The FLMs' input regarding BACT has resulted in more stringent emission limits in several permits, with a corresponding reduction in environmental impacts from those proposed sources. The permitting authority can require more stringent emission limits if it receives information showing such a limit is feasible, irrespective of environmental impacts. In addition, if the FLM makes the case that the proposed facility will, by itself or in combination with other sources, cause or contribute to unacceptable impacts to air quality related values, the permitting agency also has the authority to require additional control equipment to be installed on the proposed facility to mitigate all or part of the unacceptable impact.

2.10. Consideration of Fire Emissions

Comment: Several commenters stated that FLAG fails to adequately address fire emissions on Federal lands.

Response: As stated in the FLAG report, the goal of FLAG is to develop a consistent approach on how FLMs evaluate the impacts of air pollution on public land resources with major emphasis on new source review under the CAA. Fire can have significant short-term impacts on visibility and other resources. However, fire and other temporary non-stationary sources are not considered under the new source review requirements of either EPA or states and, accordingly, the fire section in the FLAG report is not extensive.

Nevertheless, there are other venues where FLMs, in concert with EPA and states, are trying to better address fire emissions. For example, EPA's Air Quality Policy on Wildland and Prescribed Fires considers the impacts of smoke from fire. This policy was the product of deliberations between FLMs, EPA, industry, and other stakeholders. In addition, States are required to consider smoke management in developing their State Implementation Plans for regional haze. It will be during the development of those plans that the specific impacts of fire will be addressed in more detail.

2.11. Net Emissions Increase Calculation

Comment: Several commenters objected to the FLM approach of calculating net emissions increases for modified facilities.

Response: FLAG advises applicants to calculate the 24-hour average net emission increase for each pollutant from modified facilities as the maximum allowable 24-hour average minus the actual hourly rate averaged over the past two years (annual emissions over past two years/hours of operation over last two years). We recognize that this approach is different from the emission change calculation used for short-term increment, which is calculated as the maximum allowable 24-hour average minus the highest occurrence over the past two years. The reason for the differing approaches is so that the FLMs can better assess the impacts of modified sources on AQRVs, especially in the situation where a source does not increase its maximum emissions, but increases its annual capacity factor by operating more days throughout the year. By operating more days per year, such a modified source could potentially impact visibility on more days of the year.

Comment: Use 2-5 years instead of last two years in netting calculation for modifications.

Response: For consistency with EPA's increment calculation regarding the number of years, we have retained the two-year period in FLAG 2010.

2.12. FLM Websites

Comment: FLMs should maintain a website that provides contact and other relevant information to assist the permit applicant.

Response: The NPS, FWS, and FS maintain individual agency websites that provide available information. If the applicant cannot find the desired information on these websites, he should discuss his information needs directly with the specific agency.

2.13. Permit Review Process

Comment: Some commenters asked for clarification regarding the FLM permit review process with respect to notices in the *Federal Register*.

Response: The FLM permit review processes described on pages 10-12 of the FLAG report provide for separate notice in the *Federal Register*, if time permits and the permitting authority does not provide adequate public notice and participation with respect to FLM adverse impact determinations.

2.14. Climate Change

Comment: FLAG should acknowledge the impact of climate change on Class I areas, and the FLMs should develop an AQRV framework for dealing with greenhouse gas emissions.

Response: The FLMs recognize that climate change is an important and emerging issue that warrants attention. For example, the NPS has developed a Climate Friendly Parks program that has goals of understanding climate change impacts in parks, assessing and reducing greenhouse gas emissions which contribute to climate change, helping park managers prepare adaptation strategies, and educating the public about climate change impacts and ways to mitigate their own greenhouse gas emissions. Scientific data and reports document that greenhouse gases are now causing and will continue to cause adverse ecological effects. These effects extend to NPS units across the nation. As such, climate change presents significant risks and challenges to park resources, infrastructure and visitor experience. While some effects of climate change are known and are already visible on the landscape, many are just beginning to be understood. Most climate change impacts are complex and far-reaching. In fact, some predicted changes threaten the very existence of some parks themselves: Glaciers disappearing from Glacier National Park, and Joshua trees disappearing from Joshua Tree National Park, for example. To focus attention and action on climate change, some states have already instituted greenhouse gas management plans. The FLMs will encourage permitting authorities and permit applicants to reduce and offset greenhouse gases that may be emitted by a proposed new or modified source. In the context of PSD and NEPA, the FLMs will revise the FLAG procedures, as necessary, to reflect future regulatory developments regarding greenhouse gas emissions.

2.15. Night Skies

Comment: Two commenters raised concerns regarding the lack of information pertaining to air pollution impacts to night skies, and the need for NPS to eliminate light pollution from its parks.

Response: Dark night sky is an “Air Quality Related Value” because it is a resource that can be affected by air pollution. FLM efforts to minimize the emissions from new or modified sources, and their effect on light scattering, by reviewing and commenting on proposed emissions control technology will have a positive benefit to preserving night skies. The FLMs are also exploring ways to better assess the effects of light pollution and air pollution on night skies. In addition, the NPS agrees that light pollution is a problem at many national parks. Consequently, the NPS formed a “Night Sky Team” to help deal specifically with light pollution and other night sky issues.

2.16. FLM Notification

Comment: One commenter noted that his state only notifies FLMs of projects within 100 km of a Class I area, and that it disagrees with the FLM position to provide initial notification of the source’s anticipated impacts within 60 days of a public hearing.

Response: EPA guidance states that permitting authorities should notify the FLM of all sources proposing to locate within 100 km of a Class I area, and of “very large sources” locating greater than 100 km if they have the potential to affect Class I

areas.¹⁹ Therefore, there is no absolute 100 km cutoff for FLM notification. The significance of the impact to AQRVs is more important than the distance of the source. With the new Q/D initial screening criteria, the FLMs will not analyze in-depth all PSD permit applications that they receive. Thus, FLM notification of a PSD permit application for a project located greater than 100 km does not necessarily mean that the FLM will review that application in detail. EPA's new source review regulations (not FLAG) require the permitting authority to notify the FLM and provide all relevant information (including an analysis of anticipated impacts on visibility in any affected Federal Class I area) within 30 days of receipt and at least 60 days prior to a public hearing.²⁰

2.17. National Environmental Policy Act (NEPA)

Comment: One commenter noted that in the footnote on page xiii there was no mention of Environmental Assessments. Is it assumed that saying EIS covers both? Please clarify.

Response: The footnotes in the final FLAG 2010 report have been revised to reflect both EAs and/or EISs.

Comment: One commenter asked that the FLMs explain how FLAG is to be used in NEPA, and another asserted that FLAG procedures and significance thresholds are not applicable for NEPA analyses.

Response: FLAG provides a methodology to assess visibility, sulfur and nitrogen deposition, and ozone impacts on Federal lands, as well as threshold values to evaluate potential air quality impacts. The FLAG methodology is applicable to assessing impacts from a proposed new source on a Class I or Class II area under the PSD program, as well as AQRV impacts from NEPA-related activities. Similarly, the Deposition Analysis Thresholds (DATs) and visibility thresholds can be used in both PSD and NEPA situations to help assess the magnitude, frequency, duration, context and intensity of impacts to Class I and Class II areas.

Despite having different requirements and outcomes, both NEPA and PSD provide for the assessment and evaluation of environmental effects, as well as requirements for evaluating the "severity" of those effects. The purpose of FLAG is to develop a consistent and objective approach for FLMs to evaluate air pollution impacts in Class I (and Class II) areas, and to provide permitting authorities consistent guidance on how to assess new sources of air pollution. This guidance is important for air pollution impact analyses under NEPA as well as PSD, as it provides lead agencies with the same consistency in terms of the level of analysis the FLMs may request, as well as how FLMs may evaluate the AQRV impacts in areas they administer. Further, for NEPA projects that could result in air quality effects in a federal area, we feel that in accordance with NEPA regulations, 40 CFR 1501.6, the FLM should be a cooperating agency due to our special expertise and legal jurisdiction for managing these areas. The lead agency should "use the proposals and environmental analysis" of agencies with special expertise or legal jurisdiction to the extent possible. FLAG provides a consistent approach for lead agencies to follow when preparing air quality analyses for NEPA documents that will be acceptable to the FLM.

Finally, we recognize that there are differences between the PSD and NEPA programs. FLAG is intended to provide flexibility to deal with these differences, and was not intended to preclude more refined or regional analyses being performed under NEPA or other programs. For example, FLAG would not preclude the use of more refined photochemical grid models such as CMAQ or CAMx if the situation warrants. We have added some clarifying language to that effect in the final FLAG 2010 report.

2.18. Tribal Concerns

Comment: FLAG does not adequately address the trust responsibilities the FLMs have with regard to tribes or FLM/tribal consultations.

Response: The tribal trust responsibilities are outside of the purview of FLAG, but FLMs would welcome tribal consultations regarding air quality issues of mutual concern.

Comment: Tribes can also be FLMs with respect to Class I redesignations.

19. March 19, 1979, Memorandum from David G. Hawkins, EPA's Assistant Administrator for Air, Noise, and Radiation to Regional Administrator, Regions I-X.

20. 40 CFR 51.307 (a)(1) and 40 CFR 52.21(p)(1).

Response: We agree. FLAG is not intended to impose any requirements on tribal air quality management for any tribal areas. Although FLAG addresses impacts on federal Class I areas, the methodologies may also be applicable to assessing impacts at tribal areas redesignated as Class I.

2.19. NO_x SIP Call

Comment: FLAG should acknowledge that the NO_x SIP call has been implemented.

Response: Agreed; FLAG 2010 has been revised accordingly.

2.20. New vs. Modified Source

Comment: Clarify how the term “new or modified” is being used throughout the document. Is it always being used within the context of the PSD program?

Response: The emphasis of the FLAG report is the PSD program. However, as noted in the report, the information and procedures outlined in the report are also applicable to evaluating the effect of new or modified sources in Environmental Assessments and Environmental Impact Statements under the National Environmental Policy Act (NEPA).

2.21. Significant Impact Levels (SILs)

Comment: EPA should finalize the proposed increment SILs, and those SILs should also apply to AQRVs.

Response: We agree that it would be helpful if EPA were to finalize SILs for the PSD increments. However, we disagree that those same SILs should also apply to AQRVs. The increments and AQRV impacts are two separate tests under the PSD program, and the respective SILs should be treated separately. For example, a source with an ambient concentration impact (e.g., sulfur dioxide) below the increment SILs could still have a significant impact on AQRVs due to sulfate formation.

Comment: FLMs should identify SILs for each AQRV.

Response: The FLMs will establish resource-specific SILs as the effects data become available. In the meantime, the FLMs will rely on the screening threshold included in the FLAG 2010 report.

2.22. BLM Role in FLAG

Comment: Clarify BLM’s role in FLAG and its use of the assessment methodologies outlined in the FLAG report.

Response: Suggested language was incorporated in the final FLAG 2010 report to acknowledge that BLM is not a member of FLAG, but it does have land management responsibilities where FLAG methodologies to assess air quality impacts may be appropriate.

2.23. New Regulatory Developments

Comment: In the draft document, there is no FLAG recognition of EPA’s new pending final rule titled *Prevention of Significant Deterioration New Source Review: Refinement of Increment Modeling Procedures*.²¹ This proposed rule effectively ignores hourly and daily spikes in FLAG areas of concern for the above pollutants and ultimately, visibility. EPA’s pending rule, when effective, will certainly worsen already negatively impacted visibility at numerous federally protected areas. Under this proposed rule, pollutant screening for sulfur dioxide, particulate matter and nitrogen oxides will eliminate time interval checks and allow emissions to be averaged over a year for regulatory compliance determinations. They are currently evaluated for 3-hour and 24-hour modeled PSD increment consumption. This pending final rule should be identified in FLAG 2010, and the FLMs should explain how they will execute their “affirmative responsibility” for the Visibility AQRV with specific regard to this new EPA mandate.

Response: As of this writing, EPA has decided not to finalize the increment modeling rule. FLAG 2010 continues to recommend that sources assess their visibility impacts on maximum 24-hr emission rates. We do not anticipate any changes to this recommendation in the event EPA does finalize the increment modeling rule in the future.

21. Docket ID #EPA-HQ-OAR-2006-0888.

2.24. Appendix B: Legal Framework for Managing Air Quality and Air Quality Effects on Federal Lands

Comment: Appendix B should be reviewed and updated as necessary.

Response: Agreed. Appendix B in the final report was revised to reflect the new and revised National Ambient Air Quality Standards, and the status of EPA's 1996 proposed New Source Review regulations.

2.25. Web links

Comment: A couple of commenters noted that some listed web links were broken and did not launch properly.

Response: All web links in the final FLAG 2010 report are functional at this time.

2.26. Appendix C: General Policy for Managing Air Quality Related Values in Class I Areas

Comment: Item 13 on page 84 implies that political considerations play a role in determining whether FLMs will fully enforce Class I legal protections and should be stricken.

Response: We have revised this language to simply state that the FLMs will do their best to manage and protect resources at every area that they administer.

2.27. Modeling Protocol

Comment: FLM involvement in the Protocol review is extremely important to ensure the success of the subsequent analysis. Page 10, Section 2.2.3, "FLM Permit Review Process" should be revised accordingly.

Response: We agree. We have revised this section in the final FLAG 2010 report to reiterate the desire for the FLM to be given an opportunity to review the Class I modeling protocol before any AQRV impact analyses are completed.

2.28. Class II areas of interest

Comment: References are made to Class II areas. Are the FLAG authors referring to sensitive Class II areas such as federal recreation areas, national monuments, Non-Class I wilderness areas, national lakeshores/seashores, etc. – as opposed to Class II urban areas? Please clarify.

Response: Since there are currently no Class III PSD areas, any area that is not a Class I area is a Class II area. In the context of FLAG, Federal Class II area refers to any Class II area administered by one of the FLM agencies.

2.29. Causes of Visibility Impairment

Comment: One commenter asked the FLMs to verify the listed constituents as the primary causes of the visibility impairment discussed on page 2 of the FLAG report.

Response: We have updated the text in the final FLAG 2010 report to reflect the most recent data regarding the primary causes of visibility impairment in the listed areas.

2.30. Referenced EPA documents

Comment: Page xiii, 5th bullet: Please notate which EPA documents are being referred to in the second parenthetical.

Response: The intended referenced document is EPA's *Guideline on Air Quality Models*. We have clarified the language in the final FLAG 2010 report to reflect this intent.

2.31. Other AQRV Identification and Assessment Tools

Comment: Remove reference to "ISCST" and substitute "AERMOD."

Response: Agreed. We have made this change in the final FLAG 2010 report.

3. Response to Visibility Comments

This section provides FLM responses to public comments received on the visibility sections of the draft FLAG Phase I Revised Report (FLAG 2010). The section is organized by key issues raised by the commenters.

3.1. Near Field Analysis

3.1.1. Thresholds

Comment: Can the FLMs adopt a consistent concern threshold for all three levels of plume blight analysis?

Response: No. The thresholds used in visibility analyses are tied to the potential for a plume to be visible to an observer; those thresholds cover a range of values. In a screening analysis, conservative assumptions are used to estimate the pollutant concentrations and optical parameters, therefore, a higher threshold is used, recognizing the conservative nature of the analysis. For more refined analyses, more mid-range values are used, since the techniques are not as conservative.

3.1.2. Class II areas

Comment: Is plume blight evaluated differently in Class II areas?

Response: No. FLAG describes methods and techniques that are transferable to Class II areas. Differences may occur in how the results of an analysis are interpreted. All Class II impact determinations are made on a case-by-case basis.

3.1.3. Blight versus Haze analysis

Comment: For Class I areas that straddle the 50 km mark, can the applicant use CALPUFF without the need for a model evaluation study?

Comment: Can a facility that is complex in nature with multiple sources and plumes consider using CALPUFF instead of PLUVUE II in determining the potential impacts to a near field AQRV?

Response: The FLMs work with the permitting authority and the Environmental Protection Agency (EPA) to determine which model is most appropriate for an AQRV analysis. Because each scenario is different, it is not possible to provide a single response to these questions.

Each applicant is encouraged to contact the FLM prior to submitting an analysis to a permitting authority. Early discussion can review complex issues and establish consensus on a working protocol.

3.1.4. Emissions

Comment: Emission levels for near field plume blight analysis should represent the net emission change as used with haze analysis.

Response: The FLM is charged with evaluating potential impacts to AQRVs including visibility. When an action is proposed in the near field, the FLM assesses whether the resulting plume has the potential to be perceptible and whether the change resulting from the action is significant and constitutes an adverse impact. Many near field source scenarios are complex and require site specific consideration. Early contact with the FLMs to discuss an appropriate approach is recommended.

3.1.5. Modeling/Technical

Comment: The FLMs should utilize PLUVUE-II refinements that account for effects of the angle of the subtended plume.

Response: We agree. We consider all aspects of model refinements for a level 3 plume blight analysis on a case-by-case basis.

Comment: The FLMs should change the upper limit on relative humidity from 95% to 90% when calculating $f(RH)$. The current use of 95% almost doubles the optical impact and tends to overestimate modeled visual impacts, inconsistent with the assumed constraints of visibility theory (uniform illumination, etc.) and the regulatory limitation of evaluating man-made impacts (rather than natural meteorology).

Response: In the revised FLAG, $f(RH)$ is not computed or used in the same way as before. The use of $f(RH)$ calculated on a hourly basis has been replaced with monthly averaged values specific to each Class I area and no longer supports the option of setting the relative humidity upper limit. In addition, multiple years of relative humidity data are incorporated into each

monthly average. This change in f(RH) is intended to better represent the long-term climatic influence of moisture in an area, and reduce concerns over short-term humidity events. In addition, the change is consistent with EPA's visibility program.

Comment: The discussion on page 22 is confusing in the way it refers to EPA's VISCREEN manual in a discussion about refined PLUVUE II analysis.

Response: We have changed the wording in that section to make the discussion clearer.

3.2. Far Field Analysis

3.2.1. Thresholds

Comment: Replace the visibility extinction threshold with 20% change. This better represents the actual perceptible light extinction.

Comment: The revised FLAG document should provide references to the peer reviewed literature which concludes that a 5% change is the threshold for adverse visibility impacts. Pitchford and Malm (1994) indicated a "1 deciview change is about a 10% change in extinction coefficient, which is a small but perceptible scenic change under many circumstances."

Response: FLAG does not conclude that a 5% change is the threshold for adverse visibility impacts. An adverse impact determination is made on a case-by-case basis considering many factors (i.e., frequency, magnitude, duration of the impacts). In the Pitchford and Malm (1994) article, a range of values of impairment that result in a perceptible change is presented. 5% and 10% change in extinction are within the range of values provided in this article. These values are also consistent with definitions provided by EPA's visibility program establishing contribution and cause of visibility impairment.

Comment: There is no technical justification for 0.5 and 1.0 deciviews. New thresholds should be developed. Example suggests that we've changed our once .5 and 1.dv threshold to .5dv for both single and multi- source analysis. Also, there is no acceptance of this threshold. Contrast is a good indicator. Sight paths are relatively short and add unnecessary conservatism to any visibility impact analysis.

Response: As part of EPA's visibility program, 1.0 and 0.5 deciviews (dv) are defined as a cause or contributor, respectively, to visibility impairment. As with many visibility perception studies, a range of values that define perceptibility, is provided. Again, Bill Malm and Marc Pitchford (1994) include 1.0 and 0.5 dv in their perceptible range.

Comment: The FLMs should not include "visitor use" when evaluating an adverse impact to visibility.

Response: The term "visitor use" is included in the definition of "adverse impact of visibility" in the PSD regulations and cannot be removed from consideration.

Comment: FLAG will result in overly conservative air quality assessments that could impose unnecessary burdens on energy development.

Response: Screening methods as provided by FLAG consider conservative assumptions. Screening also provides an applicant with a consistent and predictable analysis method and review process. However, if an applicant chooses not to rely on FLAG's screening methods, FLAG provides a refined analysis option that considers less conservative parameters and includes more localized information unique to each analysis scenario. Refined analysis is an inherently more complex and time consuming process that looks at potential to impair on an hourly averaged basis and includes more complex models and assumptions.

Comment: The revised FLAG suggests that the regulatory factors used by EPA to determine adverse impacts on visibility are merely considered in the first-level analysis. The FLMs should not restrict the use of the regulatory factors in a first-level analysis and a proposed source should not be precluded from fully evaluating the regulatory factors in providing its analysis of potential impacts on Class I areas. FLMs do not have the authority to restrict the use of the regulatory factors and by doing so they are overreaching.

Comment: The FLMs are overstepping their authority in considering regulatory factors. For example, the commenter does not believe that use of the 98th percentile and monthly f(RH) provides a reasonable approach to addressing weather.

Response: The FLM is charged with evaluating and determining whether a proposed action may have an adverse effect to an AQRV. Presentation of a screening analysis method is intended to provide consistency and predictability when evaluating

potential impacts due to a proposed action. Use of FLAG screening is not intended to preclude any factor or consideration when the FLM is considering impacts. If an applicant or permitting authority feels that the FLAG screening method does not properly represent the action under review, an hourly averaged refined analysis method can be proposed. By switching to an hourly analysis, all aspects of short-term visibility impact can be considered.

Comment: Natural background should be redefined to include more windblown dust and fire activity, especially in the Western United States.

Response: Current estimates of natural visibility inherently include windblown dust and fire activity and are consistent with current EPA visibility program values. As with many estimates, these values are reevaluated as additional scientific studies and data become available. The FLMs work with the EPA to mature these values.

Comment: The estimate of natural visibility conditions never encounters natural impairment (rain, fog, etc. . .). 98th percentile is an improvement, however, in some instances additional steps may need to be taken to fully account for weather conditions in an AQRV analysis.

Response: The use of the 8th high or 98th percentile was not intended to address natural impairment conditions. The use of 8th high is consistent with EPA's BART program and provides a basic measure on frequency of occurrence. By definition, frequency of occurrence is a factor considered when determining if an impairment is adverse.

Comment: Is the 98th percentile calculated yearly or over the 3-5 year period?

Response: Both. Consistent with EPA's visibility program, FLAG calculates the 98th percentile over each single year and all cumulative years of analysis for evaluation.

Comment: The monthly average f(RH) factor is a meaningful improvement, but it does not allow a permitting authority to take into account weather related conditions in an appropriate way – something they are required to do under PSD rules.

Response: The FLM is charged with determining whether an action will have an adverse impact on an AQRV. The use of monthly f(RH) is one way of addressing natural impairment and is included in FLAG's screening analysis approach. If an applicant or permitting authority does not feel that FLAG's screening approach fully addresses natural conditions, an hourly averaged refined analysis method can be proposed and will be considered by the FLMs.

3.2.2. Emissions

Comment: The FLM should explicitly exclude temporary, intermittent or fugitive emissions from AQRV analysis.

Response: For consistency, the FLMs consider and evaluate all pollutants presented in a permit application that may affect AQRVs. On a case-by-case basis, emissions that are not significant to the analysis may be removed from the analysis.

Comment: The commenter does not agree that emissions should be based on maximum 24-hr levels as opposed to using monthly or annual averages.

Response: Use of maximum 24-hr emission levels is consistent with EPA's visibility program and matches the averaging period used by the FLM to compute potential impacts to visibility. All analyses for AQRVs evaluate the full emission potential as defined by the proposed action.

Comment: The commenter does not agree with characterizing filterable and condensable particulate matter speciation at this time.

Response: For consistency, the FLMs consider and evaluate all pollutants presented in a permit application that may affect an AQRV. On a case-by-case basis, emissions that are not significant to the analysis may be removed. In many cases, subdividing species may be necessary to properly place species into a correct scattering coefficient category.

Comment: The commenter strongly supports the use of 24-hr emissions, rather than monthly or annual average emissions.

Response: We agree. FLAG utilizes emission averaging periods consistent with EPA's visibility program.

Comment: The FLAG report suggests that "applicant must perform an air quality impact analysis for each pollutant subject to PSD review" and cites 40 CFR 51.166. An air quality analysis is only performed for pollutants covered by an ambient standard or increment for which there is an appropriate model.

Response: The purpose of FLAG is to evaluate potential impacts to AQRV from a proposed action. As such, once an action is triggered, all emissions resulting from that action are considered. Impacts to an AQRV, such as visibility, must be evaluated as a whole, considering all visibility-impairing pollutants emitted from the proposed project.

3.2.3. Modeling/Technical

Comment: There are noted problems with the existing models and modeling systems used by the FLMs for AQRV analysis.

Response: The FLMs work with the permitting authorities and EPA to determine the most appropriate model(s) for AQRV analysis. EPA is charged with providing guidance and recommendations for which model(s) should be used and how to operate it correctly. Early contact with the FLM is recommended to minimize impacts from these considerations.

Comment: A refined analyses does not always guarantee a better result.

Response: We agree. Because there is diversity in conditions and scenarios affecting an AQRV evaluation, we encourage early contact with the appropriate FLM to discuss and establish a protocol to best address each analysis.

Comment: Who determines which three years of meteorological data to use, and how will the applicant acquire these data?

Response: The need for multiple years of meteorology is intended to address the normal variability in transport and dispersion in and around a proposed action area. In cases where more than three years of data exist, determining which data set best represents this factor is a question for all parties to consider and agree upon. Early contact and the development of a pre-application protocol help to resolve these issues and are evaluated on a case-by-case basis.

Comment: Would refinements or modifications to the model be considered permissible deviations that would not trigger an hourly analysis? For example... Can ammonia limiting method (ALM), “MNITRATE=1”, be used as a model refinement?

Response: Yes. Model settings, parameters, and refinements are considered by the FLMs in conjunction with the permitting authority and the EPA. The FLMs view each proposal and work to establish the best approach to assess each action. Early contact with the FLM is encouraged.

Comment: CALPUFF has significant shortcomings (e.g., Chemistry) and must be evaluated against monitoring data to establish model bias and supporting evidence that is accurate. Consider the use of a photochemical model such as CAMx and CMAQ.

Response: As proposed, FLAG offers a consistent and predictable screening method that utilizes EPA’s recommended CALPUFF model. If an applicant or permitting authority does not feel that the screening method appropriately addresses the action under review, an hourly averaged refined analysis can be proposed. By conducting a refined analysis, each shortcoming of a model or condition can be considered. Early contact with the FLM is encouraged in that all refined approaches should establish a pre-application protocol.

Comment: Emphasis should be placed on developing one accurate year of meteorology data rather than 3-5 years of prognostic data.

Response: The use of multiple years of meteorology is intended to address the normal variability of the weather in any given location. Use of multiple years of data is consistent with EPA guidance. Methods currently in use to produce meteorology for long-range models already use the best methods to produce accurate results.

Comment: Consider a hierarchy for species used to provide background sea salt levels for AQRV analysis.

Response: The IMPROVE monitoring network steering committee recommended the current methods for estimating background, including sea salts. Supplemental monitoring studies that meet a sufficient quality assurance standard that may augment an analysis will be considered on a case-by-case basis.

Comment: FLAG should recommend the use of actual monitored ammonia instead of IWAQM recommendations for AQRV analysis.

Response: There is no single method for selecting an appropriate ammonia level for AQRV analysis. Most areas of the country do not have measurements of available background ammonia. IWAQM was only intended as a starting point and consideration should always be given to what has been determined as the most appropriate value for ammonia.

Each application should consider all available data and work with the permitting authority and FLM when selecting the background ammonia value.

Comment: FLAG does not provide guidance on key model inputs. For example setting for ammonia or the use of puff splitting.

Response: FLAG describes an analysis process and does not provide specific settings for most modeling applications. Because models are constantly changing, this prohibits FLAG from giving such recommendations. The FLMs work with the EPA to provide the best recommendations on appropriate model use. Many switch settings are evaluated on a case-by-case basis.

Comment: There are inappropriate restrictions on technical enhancements in standard 1st level modeling.

Response: The screening method proposed by FLAG is not intended to restrict technical or modeling enhancements. FLAG does describe a consistent and predictable process for evaluating AQRVs and provides a screening method on how to calculate visibility impairment. If an applicant or permitting authority does not feel that the screening method appropriately addresses impacts from an action, FLAG offers a provision for refined hourly averaged analysis. Early contact with the FLM is recommended when pursuing this option.

Comment: Inflexible enforcement of the policy that deviations from the first-level model will trigger an hourly analysis using a different metric could prevent improvements from being made to the overall source impact assessment process. Additionally, very little guidance is provided as to how an hourly analysis would be conducted or as to what refinement to the first-level analysis would trigger it. The final FLAG Report should clearly state that permitting authorities have the discretion to allow the development and use of improved modeling approaches, including the ammonia limiting method (ALM), without risk of triggering an hourly analysis.

Response: The option to utilize a refined analysis is intended to support improvements to analysis procedures. FLAG provides a conservative screening method that provides consistency and predictability. FLAG screening does not preclude discussion to model settings and refinements, but does rely on a basic and somewhat standard approach to impact. If an applicant wishes to explore site specific improvements to a modeling analysis, refinement should move toward more accurate assessment, which by necessity would be short-term (no more than 1 hour) assessment.

Comment: Reaching agreements on a modeling protocol is “not good practice” prior to conducting modeling.

Response: Although protocols may need to be adapted after work begins, the FLM agrees that most methods can and should be established, and agreed to, prior to submitting an application. Early discussion with the FLMs is always recommended. FLAG language was modified to reflect that agreements to protocols should be made prior to submitting a completed application.

Comment: Please revise the FLAG text to clarify that all receptors within each Class I area are grouped for the 98th percentile test.

Comment: On page 23, the 2nd full paragraph states “The 98th percentile test applies to the number of days that any model receptor in the Class I area exceeds the threshold.” The analysis of the predicted increase in extinction by the proposed source should be performed independently of other receptor’s calculations. In this way, all inputs are defined and calculated at each receptor separately, and not mixed over many different receptors, which have different input conditions.

Response: As FLAG states, the number of days with any imbedded receptor modeled to exceed the threshold is considered in the 98th percentile calculation. FLAG’s method of utilizing 98th percentile is consistent with EPA’s visibility program.

4. Response to Deposition Comments

This section provides FLM responses to public comments received on the Deposition Chapter of the draft FLAG Phase I Revised Report (FLAG 2010). The section is organized by key issues raised by the commenters.

4.1. Estimating Deposition Impacts

Comment: How will the applicant know if impacts exceed the deposition analysis thresholds (DATs)? Modeling or best judgment?

Response: The FLAG chapter on deposition states (section 3.5.6, page 66) that DATs are used as screening level values for the additional **modeled** [emphasis added] amount of sulfur and nitrogen deposition within Class I areas from new or modified PSD sources. FLAG states (page 5) that for air quality dispersion modeling analyses, FLMs follow Appendix W of Part 51 (EPA's *Guideline on Air Quality Models*, revised November 2005), as required under the PSD regulations at 40 CFR 51.166(1) and 52.21(1), and the recommendations of the Interagency Workgroup on Air Quality Modeling (IWAQM). FLMs recommend protocols for modeling analyses to permit applicants on a case-by-case basis considering types and amount of emissions, location of source, and meteorology.

4.2. Estimating Current Deposition Rates

Comment: To estimate current deposition rates, FLAG recommends averaging data from a monitoring site using all years with complete data records. This may lead to an overestimate of current sulfur deposition rates, since rates have decreased significantly across the country within the past 20 years. On the contrary, the average value for all years may underestimate current nitrogen deposition in many areas, particularly in the West. It is suggested to use the latest 5 years of data to estimate the current sulfur or nitrogen deposition rates.

Response: FLMs recognize that there is no single method for estimating total deposition that is appropriate for all areas. Therefore, FLAG states that applicants should consult with the FLM on questions regarding recommendations and should provide a modeling protocol to the appropriate FLM prior to conducting modeling analyses. FLAG discusses two approaches (pages 70 and 71) to estimating the current rate of deposition. One approach estimates the current rate by averaging data from an appropriate monitoring site for the pollutant of interest, using all years with complete data records. The second, more conservative, approach assumes that the current rate is equivalent to the highest rate for the pollutant of interest in the data record. FLMs believe that FLAG allows flexibility for analyses and encourages applicants to consult with the appropriate FLM before conducting analyses.

4.3. Clarification of Use of DATs and Concern Thresholds

Comment: Several commenters noted that FLAG should clarify that exceeding DATs or Concern Thresholds does not trigger an adverse impact determination.

Response: On page 66, FLAG discusses DATs and Concern Thresholds. FLMs believe that the discussion clearly defines DATs and Concern Thresholds, and differentiates them from an adverse impact determination:

A DAT is defined as the additional amount of nitrogen or sulfur deposition within a Class I area, below which estimated impacts from a proposed new or modified source are considered negligible. In other words, if the new or modified source has a predicted nitrogen or sulfur deposition impact below the respective DAT, the NPS and FWS will consider that impact to be negligible, and no further analysis would be required for that pollutant. In cases where a source's impact equals or exceeds the DAT, the NPS/FWS will make a project specific assessment of whether the projected increase in deposition would likely result in an "adverse impact" on resources considering existing AQRV conditions, the magnitude of the expected increase, and other factors.

And,

The Forest Service has continued to develop AQRV concern thresholds and pollutant exposure(s) thresholds (for sulfur or nitrogen deposition) that when exceeded may indicate an adverse impact to one or more AQRVs. These thresholds are very similar to the NPS/FWS DATs in that they establish a point below which adverse impacts are not expected. Impacts above the thresholds may or may not cause an adverse impact; depending on current levels of deposition and resource condition.

Comment: When applying DATs to determine significant levels of deposition, only the incremental impact of the proposed project, minus the offsets applied toward the project, should be considered.

Response: FLAG recommends that applicants consult with the FLM prior to conducting modeling analyses used to evaluate potential impacts. If offsets are incorporated into permit requirements, they would be considered in the modeling analyses and considered in deposition impacts.

4.4. Evaluating Ecosystem Impacts From Deposition

Comment: FLAG notes that nitrate leaching from soils, often used to indicate nitrogen deposition effects, is not a very sensitive indicator; other ecosystem changes may occur long before nitrate leaching occurs. As a result, the most sensitive species or ecosystem components may not be protected. The Deposition Chapter should give real, concrete information on exactly how the FLMs intend to incorporate sensitive ecosystem indicators into its review process.

Response: We agree that more sensitive indicators are needed. Research is underway by EPA, FLMs, and others to evaluate sensitive ecological indicators and assess their usefulness in examining sulfur and nitrogen deposition effects. FLMs will incorporate appropriate more sensitive indicators in impact assessments as they become available and believe FLAG is sufficiently flexible to allow the incorporation of new science as it is developed.

Comment: Certain FLM areas (e.g., in Minnesota) contain resources like wild rice that have been traditionally used by various Tribes. Sulfur deposition to these waters can be very harmful to wild rice, therefore we suggest that the exposure of tribally significant species should be considered when reviewing the effects of new sources of pollution. FLMs should work with local tribes to identify these species and to determine what levels of pollution should be allowed.

Response: FLMs welcome the opportunity to collaborate with Tribes to identify air pollution-sensitive traditional resources and ask the Tribes to provide available information on these resources and their sensitivity.

4.5. Effect of Sulfur Deposition on Mercury Methylation

Comment: FLAG does not address the issue of sulfate deposition and increased mercury methylation. Increased mercury methylation leads to increased mercury bioaccumulation in fish and, eventually, in humans. The body of information in this area is increasing and we would like to see the latest data used in FLM evaluations of new projects. FLMs should include fish, and the protection of fish tissue from mercury, as an AQRV. FLMs should strive to control sulfate deposition with the goal of controlling methylation.

Response: FLMs agree that sulfate contributes to mercury methylation and thus promotes bioaccumulation of mercury in fish, wildlife, and humans. Research has shown that in some areas, reducing sulfate deposition can reduce mercury methylation and bioaccumulation. FLMs believe that FLAG is sufficiently flexible and does not preclude impact analyses to assess the impact of sulfur deposition on mercury methylation. FLAG states that its methodologies allow incorporation of new science as it becomes available.

4.6. Critical Loads

Comment: A number of commenters supported the use of critical loads for atmospheric deposition impact analyses. Critical loads define the amount of deposition below which harmful effects to specific ecosystem components are not expected. Because they are quantitative, critical loads are useful in air quality and ecosystem planning and assessment.

Response: We agree that critical loads are useful tools and FLMs are currently involved in a number of projects to develop and implement critical loads in various ecosystems. FLAG notes that the FLMs intend to use critical loads as assessment tools, and in concert with DATs and Concern Thresholds.

4.7. Miscellaneous Deposition Comments

Several commenters pointed to “specific prescriptive regulatory elements” in the Deposition Chapter, summarized in the following comments.

Comment: FLAG establishes an approach for determining baseline deposition levels for Class I areas for both wet and dry deposition. Further, FLAG establishes a default method to estimate dry deposition as a fixed fraction of total deposition.

Response: In the Introduction and throughout the document, FLAG is careful to note that it is a guidance document and in no way constitutes regulation. FLMs do not have regulatory authority under the CAA. The Deposition Chapter recommends alternate methods for estimating deposition; it does not “establish an approach.” Nor does it establish a default method to estimate dry deposition as a fixed fraction of total deposition. FLAG states that the FLM “may recommend that dry deposition is equal to wet deposition” as a best available estimate, recognizing that in some areas it may result in under- or over-estimating total deposition.

Comment: FLAG establishes deposition modeling requirements.

Response: FLAG is a guidance document and recommends modeling approaches for assessing impacts to AQRVs in FLM areas, in accordance with the FLM’s responsibilities under the CAA.

5. Response to Ozone Comments

This section provides FLM responses to public comments received on the Ozone Chapter of the draft FLAG Phase I Revised Report (FLAG 2010). The section is organized by key issues raised by the commenters.

5.1. Ozone Exposure

Comment: Several commenters stated that FLAG should have a discussion of various metrics used to describe ozone cumulative exposures, e.g., W126 and SUM06, and discuss their applications and limitations.

Response: FLAG recommends that the applicant consult with the FLMs regarding analyses for AQRV impacts, including ozone impacts to vegetation, and recommends that this consultation take place in the early stages of the permit application process. FLMs will provide guidance on the use of ozone cumulative exposures at that time, if appropriate. FLAG notes that more detailed discussions regarding ozone metrics may be available on the respective agency websites, and provides links to those websites.

Comment: Phytotoxic ozone levels from EPA's Staff Paper should be included.

Response: In referring to phytotoxic ozone levels, FLAG defers to EPA's 2007 Integrated Science Assessment, developed in support of the review of the ozone standard. All documents from the review are available from the EPA website at http://www.epa.gov/ttn/naaqs/standards/ozone/s_o3_cr.html.

Comment: FLAG should consider a dose (flux)-based approach in assessing ozone impacts to vegetation rather than an exposure-based approach.

Response: Dose, or flux, refers to the actual amount of ozone that enters a leaf. Ozone flux incorporates both relevant environmental factors and physiological processes, and is considered the measure that most closely links exposure to plant response. Unfortunately, measurement of flux is very complex, requiring measurements of ozone exposure, micrometeorology, and the physiological condition of the sensitive plant. Estimates of ozone exposure are available, but data on micrometeorology and plant physiological condition are extremely limited to a few research sites. FLAG concurs with EPA's conclusion in its recent review of the ozone standard (see response above) that dose (flux) models are not advanced enough to apply across a range of species and environments.

5.2. Ozone Monitoring

Comment: FLAG should clarify ozone monitoring recommendations.

Response: FLAG notes that FLMs use standardized ozone monitoring protocols developed by EPA and State agencies. Continuous monitoring methods are preferable, but if such methods are not an option, FLAG recommends the use of passive samplers.

5.3. Emission Offsets

Comment: Sources are required to offset NO_x emissions by more than 1:1 in areas exceeding the ozone standard. There should be a more thorough and scientifically based discussion of the procedures to be used in the case of no offsets and a demonstrated situation of current ozone adverse effects, and whether the applicant can be allowed to conduct an independent ozone assessment in such a case.

Response: FLMs believe the FLAG language addressing mitigation is sufficiently broad and flexible to consider the need for offsets on a case-by-case basis.

5.4. Analysis of Ozone Effects

Comment: It is premature to assess ozone effects based on Figure 2 since no guidance has been provided for modeling and predicting ozone exposures. It is impracticable for applicants to calculate ozone exposure.

Response: FLAG notes that applicants may be asked to calculate ozone exposures. For many areas, these exposure values are available on agency websites.

Comment: FLAG’s approach for ozone analyses lacks any quantitative analysis, has limited technical basis, and needs to be better defined.

Response: FLAG advises applicants to consult with the FLMs as needed to clarify the need and approaches for analyses.

Comment: Levels of ozone toxic to plants (i.e., “phytotoxic levels”) should not be required to trigger an adverse impact determination; rather, levels that might cause plant harm or damage should trigger the determination.

Response: The term “phytotoxic levels”, as used by the FLMs and by EPA in its review of the ozone standard, refers to ozone levels that cause either foliar injury or growth or reproduction effects to plants.

Comment: FLAG establishes threshold values and metrics for determining adverse impacts attributed to ozone exposure.

Response: FLAG does not establish either threshold values or metrics for determining adverse impacts to vegetation from ozone exposure. The FLMs make adverse impact decisions on a case by case basis.

Comment: FLAG defines visible symptoms on vegetation as “damage.”

Response: The common definition of “damage” is reduction in the intended use or value of the biological or physical resource; for example, economic production, ecological structure and function, aesthetic value, and biological or genetic diversity that may be altered through the impact of pollutants. Clearly, foliar injury or visible symptoms reduce aesthetic value.

5.5. Miscellaneous Ozone Comments

Several commenters pointed to “specific prescriptive regulatory elements” in the Ozone Chapter, summarized in the following comments.

Comment: FLAG requires the permitting authority to conduct regional modeling to identify sources believed to be contributing significantly to ozone associated impacts as a basis to make SIP revisions.

Response: This is incorrect. FLAG is guidance, not regulation. FLAG (page 14) states that it is important for FLMs to be involved in SIP development, as participation provides an opportunity to influence planning of pollution control programs that can benefit air quality in FLM areas. FLMs assist in the development of SIPs by providing analysis and comment to address existing impacts of concern. This approach is particularly useful for addressing impacts on AQRVs other than visibility, since the CAA does not provide specific requirements for other AQRVs.

Comment: FLAG establishes experimental ozone fumigation exposure protocols for defining “damage.” *FLAG 2010* at page 56.

Response: This is incorrect. On page 56, FLAG summarizes recommendations to FLMs on identifying and monitoring ozone-sensitive AQRVs and notes that, ideally, exposure/fumigation studies should be used to verify foliar injury symptoms observed in the field. It suggests that exposures be conducted at ambient ozone exposures, as well as higher exposures. This recommendation in no way establishes an ozone fumigation exposure protocol.

Comment: FLAG establishes ozone modeling requirements.

Response: This is incorrect. FLAG in no way establishes ozone modeling requirements. In fact, FLAG notes the lack of an ozone source/receptor model.

Appendix: Summary of Public Comments on Draft FLAG Phase I Report—Revised

Organization	Policy	Visibility	Deposition	Ozone
Robert Wagner		Should include information regarding air pollution impacts to night skies.		
Stephen Pauley, M.D.		NPS must eliminate light pollution from all of its parks and seek light pollution control ordinances in towns adjacent to parks.		
Alaska Dept. of Environmental Conservation (Alan E. Schuler, P.E.)	Should clarify how the Q/D approach would be used for modifications (project emissions vs. total emissions), and whether or not nonroad engine emissions are included in the calculation.			
Texas Commission on Environmental Quality (Mark R. Vickery, P.G.)	Recommends there be a transparent mechanism in FLM dealings with permitting authorities and applicants; encourages FLMs to coordinate with RPOs; disagrees with FLM notification requirements (Texas limits FLM notification to sources within 100 km); believes that the increment significant impact levels should also apply to AQRVs; agrees AQRV protection may require cumulative impact analyses—FLMs should ask EPA to clarify how the Clean Air Act supports cumulative AQRV analyses; should exclude certain emissions (e.g., temporary, intermittent, fugitive, etc) from the analysis; Q/D approach is too subjective and overly conservative; emissions should be based on monthly annual averages, not 24-hr maximum.	Notes limitations of CALPUFF for long-range transport; FLMs should be flexible in dealing with modeling protocols and related NSR issues; does not agree with PM speciation (filterable vs. condensable); concerned about unnecessary refined analyses.		
E.I. DuPont de Nemours, & Co (Charles J. Zarzecki)	Should clarify who will determine what meteorological data to use, and how the applicant will acquire these data.		How will the applicant know if impacts exceed the DATs (modeling or best judgment)?	
BP America (Karen St. John)	Requests a public meeting; FLAG will result in overly conservative air quality assessments that could impose unnecessary burdens on energy development; supports comments submitted by the American Petroleum Institute.	Supports comments submitted by the American Petroleum Institute.	Supports comments submitted by the American Petroleum Institute.	Supports comments submitted by the American Petroleum Institute.

Organization	Policy	Visibility	Deposition	Ozone
Arizona Dept, of Environmental Quality (Nancy C. Wrona)	Need to address CAIR's vacatur; should clarify that it is the applicant's responsibility to conduct an AQRV impact analysis and the FLM's responsibility to determine possible AQRV adverse impacts; should acknowledge that the NO _x SIP call has been implemented;	Consider adding CALPUFF as option for the near-filed analysis;	Suggests using the latest 5 years of deposition data to estimate current S and N deposition rates; clarify that the DAT/concern threshold is a management trigger, not necessarily an adverse impact threshold; should further revise or append the FLAG guidance as regulations or other guidance that affects AQRVs are changed.	Ozone exposure level should be defined or explained; it is impracticable for applicants to calculate the stated ozone exposure; should introduce indexes (e.g., SUM06, W126) and discuss their applications and limitations; phytotoxic ozone levels from EPA's Ozone Staff Paper should be included; may need to consider the dose-based approach as an option to assess impacts.
Fond du Lac Band of Lake Superior Chippewa (Joy Wiecks)	FLAG does not adequately address the trust responsibilities the FLMs have with regard to tribes or FLM/tribal consultation; tribes can also be FLMs with respect to Class I redesignations; strongly supports using 24-hr emissions, rather than monthly or annual average emissions.	Should not include "visitor use" in adverse visibility impact definition.	Supports using sensitive nitrogen deposition indicators, but more details needed on how to incorporate these indicators into the review process; FLAG does not adequately address sulfate deposition and increased mercury methylation; FLMs should be concerned about sensitive tribal vegetation; supports using critical loads as a management tool; should consider cumulative impacts, even if less than DAT impacts.	Notes that there was no mention of weighted averages for ozone effects (e.g., N100, W126), should add this back into the ozone discussion.
Tri-State Generation and Transmission Assoc., Inc. (Barbara A. Walz)	Supports extensive comments submitted by the Western Business Roundtable and WEST Associates.	Supports extensive comments submitted by the Western Business Roundtable and WEST Associates.	Supports extensive comments submitted by the Western Business Roundtable and WEST Associates.	Supports extensive comments submitted by the Western Business Roundtable and WEST Associates.
American Petroleum Institute (Matthew Todd)	Request a public meeting; Class II areas should not be given same level of protection as Class I areas; FLAG procedures should not be applicable to NEPA analyses.	Noted technical limitations of CALPUFF; should consider CAMx and CMAQ (with chemistry) as alternatives to CALPUFF; should consider developing one year of accurate meteorological data rather than using 3-5 years of prognostic data that may not be representative of the area; there is no technical justification of the 0.5 and 1.0 deciview thresholds; new threshold should be developed that include sight path.		FLAG's approach for ozone analyses lacks any quantitative analysis, has limited technical basis, and needs to be better defined.
Washington Dept. of Ecology (Jeff Johnston)	Provides some editorial comments and suggest some clarifying language; notes that some provided web links are broken; should mention CAIR vacatur; FLMs should work with States to resolve cumulative impact issues; add "Protocol Review" to discussion of FLM Review Process.	Visibility tables should also be assessable on-line.		

Organization	Policy	Visibility	Deposition	Ozone
Lignite Energy Council (John Dwyer)	FLAG cannot be used to regulate Class II areas; FLAG's exemption for Federal land management activities places a grossly disproportionate burden on Western states; FLAG is a legislative rule subject to requirements of the Federal Administrative Procedure Act; FLAG should be revised to clearly recognize the FLMs lack of legal authority to regulate land uses not on federal property; FLAG should be revised to be made consistent with the statutory role of the FLM in evaluating new source impacts on Class I areas; questions the proposed Q/D approach (i.e., should apply for less than 50 km applications, should limit distance to 300 km, should change "Q" based on parameter being assessed); should clarify what AQRV analyses are required of non-mandatory Class I areas; disagrees with FLAG approach to calculating net emission increase for modified sources; should clarify mitigation of adverse impacts.	Should allow use of CALPUFF within 50 km of Class I areas; recommends changes to the plume blight analyses; should revise estimates of "natural conditions" as refined estimates become available.	Should differentiate between "DATs" and "concern thresholds."	More than 1:1 emission offsets should be sufficient to mitigate ozone impacts from a new source; need for more scientifically based discussion to assess ozone impacts.
Appalachian Mountain Club (Georgia Murray), Environmental Defense Fund (Vickie Patton), National Parks Conservation Association (Mark Wenzler), Natural Resources Defense Council (John Walke)	Requests a 60-day comment extension if not adopting the 20% best background recommendation; no basis to extend the Q/D concept to ozone and deposition; should update language to reflect CAIR vacatur and status of visibility SIPs; objects to specific language in Appendix C that may imply political considerations could compromise Class I areas legal protections; FLAG should acknowledge the impact of Climate Change on Class I areas and develop an AQRV framework for dealing with greenhouse gas emissions in the future.	Should use 20% best visibility as natural background.	Supports use of "Critical loads" and recommends FLAG define critical load parameters to be developed and by when; agrees that fog and cloud water must be included in total wet deposition calculations; should include mercury methylation as a sulfur deposition indicator.	Recommends a consistent metric (e.g., W126) be used for assessing ozone impacts.
North Dakota Division of Air Quality (Terry L. O'Clair, P.E.)		The analysis of the predicted increase in extinction should be paired in space, and each receptor treated separately; agrees that there should be flexibility in using CALPUFF instead of PLUVUE for plume impact analyses for multiple sources of plumes.		

Organization	Policy	Visibility	Deposition	Ozone
Peabody Energy Corporation (Dianna Tickner)	Should limit Q/D screening tool to 300 km; FLAG attempts to expand the FLM role in NSR permitting (e.g., completeness reviews, BACT, protection of Class II areas).	FLAG should allow certain model refinements (e.g., "ammonia limiting method"); should allow consideration of all regulatory factors (including natural conditions that reduce visibility).		
Western Business Roundtable (Jim Sims)	FLAG inappropriately seeks to expand FLM authority to regulated federal Class II areas; FLAG's exemption for Federal land management activities places a grossly disproportionate burden on Western states; FLAG is a legislative rule subject to requirements of the Federal Administrative Procedures Act; FLAG should be revised to clearly recognize the FLMs lack of legal authority to regulate land uses not on federal property; FLAG should be revised to be made consistent with the statutory role of the FLM is evaluating new source impacts on Class I areas.			
West Associates (Kevin Wantajja)	Supports many of the BART-like changes; questions Q/D approach (i.e., should not double count by including both PM ₁₀ and H ₂ SO ₄ ; should also apply to increment analyses, should only use SO ₂ and H ₂ SO ₄ for sulfur deposition and NO _x for nitrogen deposition/ ozone screening, should limit review to 300 km); should clarify what AQRV analyses apply to non-mandatory Class I areas (i.e., redesignated tribal lands); disagrees with FLAG approach to calculating net emission increase for modified sources.	Should clarify the threshold for determining significant visibility impacts; recommends using only annual average natural background levels and future refinements should be considered; recommends using actual regional monitoring background ammonia concentrations; should allow CALPUFF for all receptors in Class I areas straddling or within 50 km from a proposed source; recommends specific changes to assessing visibility plume impacts; should clarify what AQRV analyses apply to non-mandatory Class I areas (i.e., redesignated tribal lands).	Supports the inclusion of DATs/concern thresholds; should only consider the incremental impact of the proposed project, minus any obtained offsets.	Should clarify ozone monitoring recommendations.
National Mining Association (Benjamin L. Brandes)	Should provide further technical justification for proposed Q/D screening approach and limit reviews to 300 km; FLAG should limit FLM role in completeness reviews to AQRVs, not BACT and Class II area analyses; no legal authority for FLMs to evaluate Class II area impacts.	FLAG should allow certain model refinements (e.g., "ammonia limiting method"); should allow consideration of all regulatory factors (including natural conditions that reduce visibility).		

Organization	Policy	Visibility	Deposition	Ozone
Utility Air Regulatory Group (Hunton & Williams—Andrea Bear Field)	Permitting authorities are the final decision-makers in the PSD permitting process; expresses concerns over the proposed Q/D screening approach (e.g., no technical justification for using 10, no limit to “D”; does not account for meteorological and other source specific factors, should limit pollutant summing to the AQRV being evaluated); should avoid multiple rulemakings/comment period; FLMs should provide flexibility in conducting any Class II area analyses.	FLAG should properly account for weather-related visibility impairment; should define the 98 th percentile value as extending over the entire 3-5 year simulation period, rather than only one year; FLAG should allow certain model refinements (e.g., “ammonia limiting method” and CALPUFF’s puff-splitting) and other technical enhancements; should provide flexibility in finalizing modeling protocols; should limit the decision to using 20% best natural visibility conditions to the State (i.e., do not include FLM).		
Wyoming Outdoor Council (Bruce Pendery)	Should evaluate each source on a case-by-case basis—i.e., should eliminate the Q/D screening approach and should not adopt a hard no adverse impact policy.”			Should replace the no phytotoxic levels trigger with the requirement that there be no more than damaging levels of ozone.
BLM (Ed Roberson)	Supports BART-like approach in FLAG; supports use of FLAG in NEPA but request clarification on how that is to be done; requests further clarification on how the Q/D approach was developed and how to apply it in certain situations; should update language to reflect CAIR’s vacatur, EPA’s proposed refinements to the increment modeling procedures, and other developments.	Should consider capping the Relative Humidity Adjustment Factor at 90% rather than 95%; should provide basis for 5% change in extinction threshold.	Should clarify the development and expected use of DATs and concern thresholds.	Within the context of NEPA, should address the application of photochemical grid models to assess ozone impacts; this section could benefit by providing examples of potential ozone impacts that would be considered adverse and where impact would not be considered adverse.
Minnesota Pollution Control Agency (Todd J. Biewen)	Supports BART-like guidance in FLAG; suggests allowing averaging emissions over 2-5 years (rather than just 2) in calculating emission increases from modified facilities).			



A park visitor relaxes and savors the view in the Yellow Mounds area of Badlands National Park, South Dakota.
Credit: National Park Service/Larry McAfee.

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

October 2010

U.S. Forest Service
U.S. Department of Agriculture

National Park Service
U.S. Fish & Wildlife Service
U.S. Department of the Interior



U. S. Forest Service

Air Quality Program

www.fs.fed.us/air

National Park Service

Nature Resource Program Center

Air Resources Division

www.nature.nps.gov/air

U.S. Fish and Wildlife Service

National Wildlife Refuge System

Air Quality Branch

www.fws.gov/refuges/airquality/