

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 58**

**[EPA-HQ-OAR-2008-0338; FRL-     ]**

**RIN 2060-AP15**

**Ambient Ozone Monitoring Regulations: Revisions to Network  
Design Requirements**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The EPA is proposing to revise the monitoring network design requirements for ozone to assist in implementing changes to the primary and secondary National Ambient Air Quality Standards (NAAQS) for ozone that were promulgated on March 27, 2008. EPA is proposing to modify minimum monitoring requirements in urban areas, add new minimum monitoring requirements in non-urban areas, and extend the length of the required ozone monitoring season in some states.

**DATES:** Comments must be received on or before [Insert date 60 days after publication in the FEDERAL REGISTER].

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2008-0338, by one of the following methods:

- [www.regulations.gov](http://www.regulations.gov): Follow the on-line instructions for submitting comments.

- E-mail: Comments may be sent by electronic mail (e-mail) to [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov), Attention Docket ID No. EPA-HQ-OAR-2008-0338.
- Fax: Fax your comments to (202) 566-9744, Attention Docket ID No. EPA-HQ-OAR-2008-0338.
- Mail: Send your comments to Air and Radiation Docket and Information Center, Environmental Protection Agency, Mailcode 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460, Attention Docket ID No. EPA-HQ-OAR-2008-0338. Please include a total of two copies. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17<sup>th</sup> St., NW, Washington, DC 20503.
- Hand Delivery: Deliver your comments to EPA Docket Center, 1301 Constitution Ave., NW, Room 3334, Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2008-0338. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at [www.regulations.gov](http://www.regulations.gov), including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through [www.regulations.gov](http://www.regulations.gov) or e-mail. The [www.regulations.gov](http://www.regulations.gov) website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through [www.regulations.gov](http://www.regulations.gov) your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the

use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Docket: All documents in the docket are listed in the [www.regulations.gov](http://www.regulations.gov) index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in [www.regulations.gov](http://www.regulations.gov) or in hard copy at the Ambient Ozone Monitoring Regulations: Revisions to Network Design Requirements Docket, EPA/DC, EPA West Building, Room 3334, 1301 Constitution Ave., N.W., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m. Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Ambient Ozone Monitoring Regulations: Revisions to Network Design Requirements Docket is (202) 566-1742.

**FOR FUTHER INFORMATION CONTACT:** For technical questions, please contact Mr. Lewis Weinstock, U.S. Environmental Protection Agency, Office of Air Quality Planning and

Standards, Air Quality Assessment Division, Ambient Air Monitoring Group (C304-06), Research Triangle Park, North Carolina 27711; telephone number: (919) 541-3661; fax number: (919) 541-1903; e-mail address:

[weinstock.lewis@epa.gov](mailto:weinstock.lewis@epa.gov). For general questions, please contact Ms. Lula Melton, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Assessment Division (C304-02), Research Triangle Park, North Carolina 27711; telephone number: (919) 541-2910; fax number: (919) 541-4511; e-mail address:

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**SUPPLEMENTARY INFORMATION:**

**I. General Information**

A. Does This Action Apply to Me?

Categories and entities potentially regulated by this action include:

Category	NAICS <sup>a</sup>	Examples of regulated entities
Federal government	924110	Federal agencies that conduct ambient air monitoring similar to that conducted by states under 40 CFR part 58 and that wish EPA to use their monitoring data in the same manner as state data.
State/local/tribal government	924110	State, territorial, and local air quality management programs that are responsible for ambient air monitoring under 40 CFR part 58. The proposal may also affect Tribes that conduct ambient air monitoring similar to that conducted by states and that desire that EPA use their monitoring data in the same manner as state monitoring data.

<sup>a</sup> North American Industry Classification System.

B. What Should I Consider as I Prepare My Comments for EPA?

Do not submit information containing CBI to EPA through [www.regulations.gov](http://www.regulations.gov) or e-mail. Send or deliver information identified as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404-02), U.S. EPA, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina 27711, Attention Docket ID No. EPA-HQ-OAR-2008-0338. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI, and

then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

C. Where Can I Get a Copy of This Document and Other Related Information?

In addition to being available in the docket, an electronic copy of this proposed rule is also available on the Worldwide Web (WWW) through the Technology Transfer Network (TTN). Following the Administrator's signature, a copy of this proposed rule will be placed on the TTN's policy and guidance page for newly proposed or promulgated rules at <http://www.epa.gov/ttn/oarpg>. The TTN provides information and technology exchanges in various areas of air pollution control.

D. How Is This Document Organized?

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**II. Summary of Proposed Ozone Network Design Requirements and Rationale**

- A. What Are the Proposed Revisions to Urban Network Design Requirements?

Presently, states (including the District of Columbia, Puerto Rico, and the Virgin Islands) and local air quality management agencies when so delegated by the state are required to operate minimum numbers of EPA-approved ozone

(O<sub>3</sub>) monitors based on the population of each of their Metropolitan Statistical Area (MSA) and the most recently measured O<sub>3</sub> levels for each area. These requirements are contained in 40 CFR part 58 Appendix D, SLAMS Minimum O<sub>3</sub> Monitoring Requirements, Table D-2. These requirements were last revised on October 17, 2006, as part of a comprehensive review of ambient monitoring requirements for all criteria pollutants. (See 71 FR 61318 for the specific Table D-2 referenced above).

Currently, the minimum number of O<sub>3</sub> monitors required in an MSA ranges from zero (for an area with a population of at least 50,000 and under 350,000 and no recent history of an O<sub>3</sub> design value greater than 85 percent of the level of the NAAQS) to four (for an area with a population greater than 10 million and an O<sub>3</sub> design value greater than 85 percent of the level of the NAAQS). Because these requirements apply at the MSA level, large urban areas consisting of multiple MSAs can be required to have more than four monitors.

Currently, there are 369 MSAs in the U.S. subject to minimum O<sub>3</sub> monitoring requirements.<sup>1</sup> Of these MSAs, 251 are required to have one or more monitors based on their 2005

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<sup>1</sup> MSA must contain an urbanized area of 50,000 or more population.

population estimates<sup>2</sup> and 2005 to 2007 O<sub>3</sub> design values compared to the revised O<sub>3</sub> NAAQS, and the other 118 MSAs are not required to have monitors. The specific size range of MSAs that are not required to have monitors have urban area populations between 50,000 and less than 350,000, and have O<sub>3</sub> design values less than 85 percent of the level of the NAAQS. Some of the MSAs do not have current design values due to the lack of monitors. Also note that monitoring requirements do not apply to Micropolitan Statistical Areas.<sup>3</sup>

In the 251 MSAs with one or more required O<sub>3</sub> monitors, a total of 392 monitors are required to meet the minimum requirements listed in Table D-2. In actuality, 992 monitors were in operation during 2005 to 2007 representing these MSAs.<sup>4</sup> This monitor count exceeds the minimum requirements based on Table D-2, indicating the typical practice of operating more than the minimum required number of monitors to support the basic monitoring objectives described in part 58, Appendix D. In addition, state and

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<sup>2</sup> <http://www.census.gov/population/www/estimates/metropop/2005/cbsa-01-fmt.xls>

<sup>3</sup> Micropolitan Statistical Areas must have at least one urban cluster of at least 10,000 but less than 50,000 population.

<sup>4</sup> Of these 992 monitors, 873 monitors provided complete data for calculation of design values.

local agencies operated 55 monitors during 2005 to 2007 in MSAs that were not required to have monitors.<sup>5</sup>

We note that many of the O<sub>3</sub> monitors that are operated in excess of minimum requirements are necessary to characterize the O<sub>3</sub> concentrations that occur in metropolitan areas and in downwind areas that are potentially impacted by transport from MSAs. As noted in Appendix D (see 71 FR 61318), O<sub>3</sub> minimum monitoring requirements do not account for the full breadth of additional factors that would be considered in designing a complete O<sub>3</sub> monitoring program for an area. Some of these additional factors include geographic size, population density, complexity of terrain and meteorology, adjacent O<sub>3</sub> monitoring programs, air pollution transport from neighboring areas, and measured air quality in comparison to all forms of the O<sub>3</sub> NAAQS (i.e., 8-hour and 1-hour forms). States and EPA Regional Administrators work together to design and/or maintain the most appropriate O<sub>3</sub> network to service the variety of data needs in an area. The results of these negotiations are documented in annual monitoring network plans that are made available for public inspection and then approved by the EPA Regional

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<sup>5</sup> Of these 55 monitors, 20 monitors provided complete data for calculation of design values.

Administrator, and the O<sub>3</sub> monitoring requirements in approved plans become the basis for state O<sub>3</sub> monitoring requirements for the one-year period following plan approval.

Because existing minimum monitoring requirements include a factor based on the comparison of an area's design value to the O<sub>3</sub> NAAQS (see 71 FR 61318), the recent revisions to the O<sub>3</sub> NAAQS (see 73 FR 16436) may already necessitate that some states make changes to their O<sub>3</sub> monitoring network independent of the proposed changes described below. The requirements listed in Table D-2 of 40 CFR part 58 Appendix D are based on how close measured ambient concentrations are to the level of the O<sub>3</sub> NAAQS, with a design value threshold at 85 percent of the NAAQS. For an MSA of a given population size, there are a greater number of required monitors when the design value is greater than or equal to 85 percent of the O<sub>3</sub> NAAQS than when the design value is less than 85 percent of the O<sub>3</sub> NAAQS. With the recent decision to revise the 8-hour primary and secondary standards from a level of 0.08 ppm to a level of 0.075 ppm, the 8-hour O<sub>3</sub> design value that will trigger increased minimum monitoring requirements for an MSA decreased from 0.068 ppm to 0.064 ppm. Therefore, MSAs with 8-hour design values between 0.064 ppm and 0.067 ppm

are now required to increase the number of monitors operating to meet minimum requirements based on existing monitoring requirements.<sup>6</sup> A total of 15 MSAs have O<sub>3</sub> design values between 0.064 ppm and 0.067 ppm based on 2005 to 2007 design values. Of those 15 MSAs, 13 MSAs are already meeting requirements based on the operation of additional monitors by the affected states. Thus, current data indicate that only two areas may need additional monitors<sup>7</sup> on the grounds that their design values are now greater than or equal to 85 percent of the revised NAAQS.

There are 105 MSAs with populations between 50,000 and less than 350,000 that are presently without any O<sub>3</sub> monitors supporting design value calculations for either 2004 to 2006 or 2005 to 2007.<sup>8</sup> These unmonitored MSAs have a total population of approximately 18 million people and include areas in 37 states and Puerto Rico. The existing regulations do not require these MSAs to begin monitoring for O<sub>3</sub>. Comments that were received from state air monitoring agencies and from multi-state air planning

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<sup>6</sup> States should document the required changes to O<sub>3</sub> networks in their annual monitoring network plans that are required by 40 CFR part 58.10. Such plans are due by July 1 of each year and required to be made available for public inspection prior to submission to EPA Regional Offices for review and approval.

<sup>7</sup> Based on 2005 to 2007 O<sub>3</sub> design values and 2005 Census Bureau population estimates, these MSAs are Port St. Lucie-Fort Pierce, Florida, and Salem, Oregon.

<sup>8</sup> Approximately 18 of these MSAs have operating O<sub>3</sub> monitors but incomplete data for the purposes of calculating design values for the 2004 to 2006 and 2005 to 2007 time periods.

organizations in response to the O<sub>3</sub> NAAQS proposal expressed concern that these requirements ignore the needs that states and localities have for additional monitors to measure O<sub>3</sub> levels in a variety of locations, particularly in areas with populations under 350,000. The commenters stated that unless this deficiency is corrected, the health benefits of EPA's O<sub>3</sub> NAAQS revision would likely be limited to those living in MSAs having populations of more than 350,000. Other commenters noted the difficulty in defining the boundaries of new attainment/nonattainment areas without additional monitoring in the MSAs below 350,000 population.<sup>9</sup>

EPA notes that states already have the discretion to add O<sub>3</sub> monitors in these locations and in any currently unmonitored areas where applicable siting criteria can be satisfied, although they are not currently required to do so in the unmonitored MSAs below 350,000 population based on existing O<sub>3</sub> minimum monitoring requirements.

EPA has conducted a review of 8-hour design values obtained from existing monitors that are in proximity to these unmonitored MSAs of population below 350,000. Based on 2005 to 2007 data reported to the Air Quality System

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<sup>9</sup> See the O<sub>3</sub> NAAQS Response to Comments document in docket EPA-HQ-OAR-2005-0172, document number 7185, available online at <http://www.regulations.gov/fdmspublic/component/main?main=DocketDetail&d=EPA-HQ-OAR-2005-0172>

(AQS), approximately 25 percent of these unmonitored MSAs (26 of 105 areas) had an O<sub>3</sub> monitor within 20 kilometers (approximately 12 miles) that violated the revised NAAQS. Approximately 42 percent (44 of 105 areas) of the unmonitored MSAs had a violating O<sub>3</sub> monitor within 50 kilometers (approximately 31 miles). The close proximity of violating O<sub>3</sub> monitors to unmonitored MSAs indicates a reasonable likelihood that monitors placed in many of these unmonitored areas would have recorded violating concentrations over the same time period. When these unmonitored MSAs are evaluated in comparison to the locations of non-violating O<sub>3</sub> monitors that measured a level of greater than or equal to 85 percent of the revised NAAQS, approximately 34 percent (36 of 105 areas) were within 20 kilometers of such a monitor and 63 percent (66 of 105 areas) were within 50 kilometers. Concentrations of greater than or equal to 85 percent of the NAAQS to 100 percent of the NAAQS level obtained from many of the monitors in close proximity to these unmonitored MSAs indicates a reasonable likelihood that monitors placed in the unmonitored MSAs would have measured similar concentrations at levels over the same time period. This suggests the need for O<sub>3</sub> monitoring in these unmonitored

MSAs of between 50,000 and 350,000 population to ensure that potential NAAQS violations are measured.

Based on these analyses, EPA believes it is important to monitor O<sub>3</sub> concentrations in the smaller MSAs with populations between 50,000 and less than 350,000 in light of the revised level of the standards. While it was less likely that violating concentrations of the former 0.08 parts per million (ppm<sup>10</sup>) primary standard were being missed due to the lack of a monitoring requirement in these MSAs, the likelihood of missing violating concentrations of the 0.075 ppm primary standard is greater, and the public comments in regard to the potential need to revise applicable O<sub>3</sub> monitoring regulations have merit.

Accordingly, EPA is proposing to modify the minimum O<sub>3</sub> monitoring requirements to require one monitor to be placed in MSAs of populations ranging from 50,000 to less than 350,000 in situations where there is no current monitor and no history of O<sub>3</sub> monitoring within the previous 5 years indicating a design value of less than 85 percent of the revised NAAQS. We propose to modify Table D-2 of 40 CFR part 58 Appendix D by moving the current footnote 4 from the right column of the table to the middle column of the

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<sup>10</sup> Due to the data handling regulations associated with the 1997 O<sub>3</sub> NAAQS level, an 8-hour design value of 0.085 ppm was required to exceed the level of the NAAQS.

table. By doing so, we propose to require greater numbers of O<sub>3</sub> monitors for MSAs that do not have design values compared with the requirements that were promulgated in the October 17, 2006 revisions to ambient monitoring regulations (see 71 FR 61318). Functionally, this modification should mainly impact MSAs in the population range between 50,000 and 350,000 since virtually all MSAs of population 350,000 or greater currently have at least two O<sub>3</sub> monitors in operation.<sup>11</sup>

EPA solicits comment on whether the proposed 5-year historical data period is appropriate for demonstrating that O<sub>3</sub> design values in a currently unmonitored MSA of population ranging from 50,000 to less than 350,000 have been less than 85 percent of the revised NAAQS, or whether the time period for allowing the use of historical data should be longer or shorter than 5 years.

States may wish to relocate an existing O<sub>3</sub> monitor to the unmonitored MSA to meet the proposed requirements. Opportunities for relocation may exist in areas where the current number of O<sub>3</sub> monitors in another MSA in the same

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<sup>11</sup> Three MSAs with a population of at least 350,000 appear to have no design values for either the 2004-2006 or 2005-2007 periods. These MSAs include Anchorage, Alaska; Killeen-Temple-Fort Hood, Texas; and San Juan-Caguas-Guaymabo, Puerto Rico. The Alaska and Texas MSAs reached the 350,000 level based on the difference in the 2005 population estimate compared with the 2000 decennial census figure and would therefore be subject to minimum requirements of two monitors in each of these MSAs.

state exceeds minimum requirements and the relocation of one or more of the non-required monitors meets one or more of the conditions described in 40 CFR part 58.14(c). States may also relocate a non-required O<sub>3</sub> monitor from a location outside of an MSA to an unmonitored MSA that is subject to the proposed requirements. Relocations of monitors to meet the proposed requirements would be subject to EPA Regional Administrator approval, based on a review of state-supplied information such as the ambient data trend from the monitor being proposed for relocation, the potential impact on data stakeholders with the monitor discontinuance, and the ability of other nearby O<sub>3</sub> monitors to characterize the O<sub>3</sub> conditions in the area from which the monitor is being proposed to be removed.

While states will be required to add some new monitors or relocate existing monitors to meet the proposed requirements, EPA notes that many of these unmonitored MSAs already have existing O<sub>3</sub> monitors in close proximity to their geographic boundaries. Based on the siting characteristics and data record from the existing O<sub>3</sub> monitors near the unmonitored MSAs, it is plausible that some of these monitors may adequately represent O<sub>3</sub> concentrations in the unmonitored areas based on analyses of ambient concentrations, O<sub>3</sub> precursor emissions,

meteorology, photochemical modeling, and/or topography. Analyses based on these factors or other available information could be used to support case-by-case waivers from the requirement for monitoring within some of these unmonitored MSAs, as described below, thereby mitigating the expense and logistical hurdles involved with establishing new O<sub>3</sub> monitors or relocating non-required existing monitors from other areas.

In some cases where an existing monitor is located close to an unmonitored MSA that would be required to site a new monitor based on the proposed rule modification, the affected state may propose and EPA Regional Administrators may consider approving a waiver of monitoring requirements for the unmonitored MSA. When seeking such a waiver, the state must provide relevant information including the siting characteristics and data record from the existing O<sub>3</sub> monitors near the unmonitored MSA, or other information sources that the Regional Administrator must consider in evaluating the estimation of current and future O<sub>3</sub> levels in the unmonitored MSAs. The Regional Administrator may approve such requests under the waiver authority provided in paragraph 4.1.1(c) of 40 CFR part 58, Appendix D of the proposed regulatory text. Any deviations based on the

Regional Administrator's waiver of requirements must be described in the annual monitoring network plan.

Such waiver requests must be accompanied by a letter documenting the state's commitment to propose a nonattainment designation for the unmonitored MSA based on violating readings from the nearby monitor(s) and a commitment to modify a State Implementation Plan (SIP) to provide for a specific, reproducible approach to representing the O<sub>3</sub> concentration of the unmonitored MSA in the absence of the actual monitoring data that would have been supplied by the required monitor. We request comment on the practicality of allowing states to enter into agreements with EPA Regional Administrators to use nearby O<sub>3</sub> monitors to represent the conditions within unmonitored MSAs, the specific commitments that must be included in these agreements and/or submitted plans, and the implementation challenges that may arise during the O<sub>3</sub> designation process if the EPA Regional Administrator approves of such arrangements.

In all cases described above, proposed changes to O<sub>3</sub> networks in response to the proposed new requirement would have to be documented in the annual monitoring network plans that are required by 40 CFR part 58.10 and are subject to approval by the EPA Regional Administrator.

Based on the proposed requirements described above, EPA estimates that approximately 109 new O<sub>3</sub> monitors would be required in the national O<sub>3</sub> network if the proposed urban requirement was satisfied solely with new monitors installed in the unmonitored MSAs. In actuality, we expect the net addition of new monitors to the national O<sub>3</sub> network to be less than 109 monitors due to the mitigating factors that have been previously described. These factors include the presence of existing monitors that could satisfy the proposed requirement in these unmonitored MSAs with improved data completeness, the proposed flexibility for states to relocate non-required O<sub>3</sub> monitors to the unmonitored MSAs, and the possibility of states proposing that existing monitors in close proximity to the unmonitored MSAs be used to represent O<sub>3</sub> concentrations within the unmonitored MSAs.

It has been EPA's recent practice to allow at least a one-year period for states to install new monitors when monitoring requirements are revised through rulemaking (see 71 FR 61241). Consistent with this practice and based on the projected schedule of completing a final O<sub>3</sub> monitoring rulemaking in early 2010, EPA proposes that new O<sub>3</sub> monitors be required to be installed and operating by the first day of the required O<sub>3</sub> monitoring season that is effective in

2012 as described in Table D-3 of Appendix D to part 58 (see Section II.C of this proposal for the proposed changes to the required O<sub>3</sub> monitoring seasons). For some states, new monitors would be required to be installed and operating as early as January 1, 2012, while other states would have later deadlines based on their respective O<sub>3</sub> monitoring seasons.

States would be required to identify how their monitoring networks would be modified to meet the proposed new O<sub>3</sub> requirements in the annual monitoring network plan due on July 1, 2011.

EPA also recognizes the logistical difficulty in siting new O<sub>3</sub> monitors or in relocating existing O<sub>3</sub> monitors that have been approved for discontinuation and subsequent relocation to meet the proposed requirements. Accordingly, we solicit comment on the proposed requirement for having new monitors operating in 2012, specifically whether states might need additional time to site all the new monitors (e.g., a staggered 2-year deployment schedule accomplished in 2012 and 2013) versus the single-year deadline described above. We note that the deployment schedule would be applicable to the proposed urban monitoring requirements as well as the proposed non-urban monitoring requirements described in the following section.

B. What are the Proposed Revisions to Non-Urban Network Design Requirements?

The newly established secondary standard was put into place specifically to provide protection to sensitive vegetation in less urbanized areas, in particular those Class I Wilderness Areas set aside by Congress to be protected so as to conserve the scenic value and the natural vegetation and wildlife within such areas, and to leave them unimpaired for the enjoyment of future generations. The secondary O<sub>3</sub> NAAQS also considered the benefits that would be provided to the public welfare from increased protection of sensitive vegetation in other Federal, state, Tribal and/or public interest lands that have been set aside for a similar purpose. These areas are characterized by the presence of O<sub>3</sub>-sensitive species of native vegetation that have been shown to be subject to O<sub>3</sub>-induced visible foliar injury, impaired growth, and/or other adverse impacts to a degree that could be considered adverse.

Currently, existing O<sub>3</sub> monitoring requirements and current state monitoring practices are primarily oriented towards protecting against human health effects and therefore towards reporting compliance with the primary NAAQS. This accounts for the current focus of the

monitoring requirements on urban areas, where large populations reside, in which significant emissions of O<sub>3</sub>-forming precursors are found, and where O<sub>3</sub> concentrations of concern have been historically measured. EPA believes that the previously described proposed changes to urban monitoring requirements will be adequate for determining compliance with the secondary NAAQS in MSAs, noting that the assessment of welfare effects has not been a traditional objective of urban-based O<sub>3</sub> monitoring networks.

It is now known, however, that O<sub>3</sub> concentrations of concern for vegetation can also occur in areas far downwind of urban areas. In addition, the new more stringent level of the primary and secondary NAAQS make it likely that O<sub>3</sub> levels of concern for both plants and people will be found outside of urban areas. Thus, EPA believes that there is merit in proposing additional limited monitoring requirements in non-urban areas to address both secondary and primary standard needs.

Although there are currently no EPA requirements for O<sub>3</sub> monitoring other than in or adjacent to MSAs<sup>12</sup>, there are at present about 200 state-operated O<sub>3</sub> monitors in counties that are not part of MSAs, and these monitors can be

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<sup>12</sup> States affected by Photochemical Assessment Monitoring Stations (PAMS) requirements may be required to establish O<sub>3</sub> monitors outside of MSAs to characterize upwind or downwind concentrations. See 40 CFR part 58 Appendix D, section 5.

categorized in several ways. States commonly locate O<sub>3</sub> monitors both upwind and downwind of major urban areas to evaluate the spatial gradient or extent of transported O<sub>3</sub> pollution and the lag time typically associated with photochemical production. In some cases, these O<sub>3</sub> monitors are located in non-urban or rural areas within MSAs or physically outside the MSA boundary if the expected location of maximum downwind O<sub>3</sub> concentration is outside the MSA. These monitors are counted toward meeting the minimum urban O<sub>3</sub> monitoring requirements listed in Table D-2 of Appendix D since they provide information about the air quality status of an urban MSA.

States may also operate monitors in non-urban or rural areas to meet other objectives such as the support of research programs including studies of atmospheric chemistry and ecosystem impacts, and these monitors are not typically counted toward meeting minimum monitoring requirements applicable to urban areas. States often categorize these non-required monitors as special purpose monitors (SPMs). This provides inherent flexibility because states are allowed to discontinue operation of SPMs without EPA Regional Administrator approval, subject to the conditions of 40 CFR part 58.20. Furthermore, SPMs can be

operated for a period of up to 24 months without being considered in NAAQS compliance determinations.

As part of the Clean Air Status and Trends Network (CASTNET), the EPA operates 57 O<sub>3</sub> monitors, and the National Park Service (NPS) operates 23 monitors across the eastern and western U.S. The NPS also operates additional O<sub>3</sub> monitors independent of CASTNET stations. CASTNET O<sub>3</sub> monitors operate year-round and are primarily located in rural areas; siting criteria require distances of at least 40 kilometers from cities of greater than 50,000 population as well as other separation requirements from air pollution sources.<sup>13</sup>

Taking into account both state and EPA/NPS-operated non-urban O<sub>3</sub> monitors, an analysis of the distribution of these monitors indicates a relatively uniform spatial density in the eastern one-third of the U.S. and in California, with significant gaps in coverage elsewhere across the country. Virtually all states east of the Mississippi River have at least two to four non-urban O<sub>3</sub> monitors, while many large mid-western and western states have one or no non-urban monitors.<sup>14</sup>

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<sup>13</sup> [http://www.epa.gov/castnet/library/qapp\\_v4/QAPP\\_v4\\_Main\\_Body.pdf](http://www.epa.gov/castnet/library/qapp_v4/QAPP_v4_Main_Body.pdf), page 105.

<sup>14</sup> Based on an AQS retrieval of O<sub>3</sub> monitors reporting any data in 2007, regardless of data completeness requirements, the following states had one or zero non-urban O<sub>3</sub> monitors: Georgia, Idaho, Louisiana, Nebraska,

Comments that were received from state monitoring agencies, state organizations, and private individuals in response to the O<sub>3</sub> NAAQS proposal noted the voluntary nature of most rural O<sub>3</sub> monitoring and the resulting relative lack of rural O<sub>3</sub> monitors in some areas. These commenters stated that EPA should consider adding monitoring requirements to support the secondary NAAQS by requiring O<sub>3</sub> monitors in locations that contain O<sub>3</sub>-sensitive plants or ecosystems. These commenters also noted that the placement of current O<sub>3</sub> monitors may not be appropriate for evaluating issues such as vegetation exposure since many of these monitors were likely located to meet other objectives.

As explained in the following paragraphs, EPA agrees with the public input received on this issue and believes that several important objectives would be served by having additional non-urban monitoring requirements. These objectives include: (1) provide better characterization of O<sub>3</sub> exposures to O<sub>3</sub>-sensitive vegetation and ecosystems in rural/remote areas to ensure that potential secondary NAAQS violations are measured. This objective would also serve the purpose of providing more consistent support for studies examining the impact of elevated O<sub>3</sub> levels in

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Nevada, Montana, and Oregon. If data completeness is taken into consideration, a total of 13 states had zero non-urban O<sub>3</sub> monitors that could provide a design value for either 2004-2006 or 2005-2007.

wilderness areas, locations with O<sub>3</sub>-sensitive natural vegetation, and in areas such as National Parks; (2) assessment of population exposure due to elevated ambient O<sub>3</sub> levels in smaller communities located outside of the larger urban MSAs covered by the monitoring requirements described in Section II.A; and (3) the assessment of the location and severity of maximum O<sub>3</sub> concentrations that occur in non-urban areas and may be attributable to upwind urban sources. Each of these three objectives is described below.

With regard to the first objective, there is evidence that ambient concentrations of O<sub>3</sub> in rural and other non-urban areas may be adversely affecting sensitive natural vegetation. As noted previously by the public commenters, this objective addresses the uncertainties that remain about the impact that O<sub>3</sub> concentrations have on sensitive natural vegetation, ecosystems, and wilderness areas. Additional monitors in National Parks and as well as state and/or Tribal areas set aside to provide similar public welfare benefits would support evaluation of the revised secondary NAAQS as well as future reviews of the secondary O<sub>3</sub> NAAQS by providing a more robust data set with which to assess actual vegetation exposure in rural areas, and

thereby reducing the need for interpolations of rural air quality.

With regard to the second objective as noted earlier in Section II.A, O<sub>3</sub> monitoring requirements do not currently apply to Micropolitan Statistical Areas, defined as areas having at least one urban cluster of at least 10,000 but less than a population of 50,000. The lack of such monitoring requirements for smaller communities has historically been based on the concept that the concentrations of O<sub>3</sub> in these non-urban areas would not be high enough relative to the NAAQS to justify the imposition of national monitoring requirements in less populated areas. However, in light of the revised level of the O<sub>3</sub> NAAQS, it is far more likely that these smaller communities could be exposed to elevated concentrations that approach or exceed the NAAQS due to the transport of O<sub>3</sub> from upwind areas and/or the formation of O<sub>3</sub> due to precursor emissions from industrial sources outside of urban areas. We note that there are 582 Micropolitan Statistical Areas in the U.S. with a total population of just under 2 million people based on the 2005 census estimate. Although states are not required to monitor in these areas, over 90 monitors providing 2005 to 2007 O<sub>3</sub> design values were operated. Of these 90 monitors, 45 monitors recorded design values

exceeding the level of the revised NAAQS. A total of 86 of these 90 monitors recorded design values greater than or equal to 85 percent of the revised NAAQS. These data from monitors located in Micropolitan Statistical Areas clearly indicate the potential for violations of the NAAQS in some smaller communities located outside the boundaries of MSAs that currently have minimum monitoring requirements.

The third objective is the assessment of the location and severity of maximum O<sub>3</sub> concentrations that occur outside of urban areas. Although the location of maximum non-urban O<sub>3</sub> concentrations could occur within the boundary of a Micropolitan Statistical Area or sensitive ecosystem, it is also possible that such concentrations could occur in an unpopulated and unmonitored area. Without specific information about the location and distribution of such potentially violating maximum O<sub>3</sub> concentration areas, it would be difficult to ensure that all parts of a state meet the revised NAAQS and that all necessary emission control strategies have been accounted for in SIPs. We believe that the identification of such non-urban maximum concentration areas would support objectives including: (1) the understanding of the role of upwind urban-generated O<sub>3</sub> transport and impact in locations between MSAs, (2) the verification of photochemical models at various time-scales

(i.e., diurnal fluctuations, seasonal patterns) used for assessing the effectiveness of control measures as well as real-time models supporting O<sub>3</sub> forecasts, and (3) the understanding of the role of O<sub>3</sub> precursor emissions from industrial sources and development in more remote areas in the potential creation of high-O<sub>3</sub> areas in lightly inhabited areas that historically have been unmonitored.

Given the three objectives described above, EPA believes that there is strong justification for proposing additional limited monitoring requirements in non-urban areas to evaluate compliance with both the secondary and primary NAAQS. EPA proposes to modify 40 CFR part 58 Appendix D by adding the requirement (in proposed rule section 4.1.2) that each state operate non-urban O<sub>3</sub> monitors in addition to the current and proposed urban O<sub>3</sub> monitoring requirements detailed in Table D-2 and described in section II.A of this preamble. The first required non-urban monitor is proposed to be located in areas such as some Federal, state, or Tribal lands, including wilderness areas that have O<sub>3</sub>-sensitive natural vegetation and/or ecosystems; lands with other ownership may also be appropriate. The second required non-urban monitor is proposed to be required to be placed in a Micropolitan Statistical Area expected to have O<sub>3</sub> design value concentrations of at least

85 percent of the NAAQS.<sup>15</sup> The third required non-urban monitor is proposed to be in the area of expected maximum O<sub>3</sub> concentration outside of any MSA, potentially including the far-downwind transport zones of currently well-monitored urban areas.

EPA proposes to require that states will propose new non-urban O<sub>3</sub> monitoring sites to meet each of the distinct monitoring objectives, and that the resulting expanded network will provide the foundation for an improved level of characterization of O<sub>3</sub> concentrations outside of urban areas in support of the secondary and primary NAAQS. In some cases, states may wish to operate additional non-urban monitors beyond the proposed minimum requirements where, for example, there are multiple sensitive ecosystems or wilderness areas impacted by O<sub>3</sub>, multiple Micropolitan Statistical Areas exposed to high levels of O<sub>3</sub>, or in states with multiple isolated locations of similarly high projected O<sub>3</sub> concentrations.

EPA solicits comment on the proposed non-urban O<sub>3</sub> monitoring requirements including the total number of required monitors per state, the appropriateness of the distinct non-urban objectives, the ability of such an

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<sup>15</sup> Monitors installed to meet the Micropolitan Statistical Area requirement could be discontinued, with Regional Administrator approval, after demonstrating an O<sub>3</sub> design value of less than 85 percent of the NAAQS.

expanded network to improve characterization of O<sub>3</sub> concentrations in support of the revised secondary and primary NAAQS, and the capability of the proposed network to support other objectives such as model validation.

States will likely need to perform additional analyses to help determine the appropriate locations for non-urban monitors meeting the proposed requirements. States are encouraged to confer with partners familiar with the patterns of vegetation damage and distribution of O<sub>3</sub> sensitive species in their areas, such as Federal Land Managers, state, local, or Tribal ecosystem assessment experts, or academic researchers who have established experience in the field.<sup>16</sup> Resources and analyses such as the availability of photochemical modeling, spatial interpolation of ambient data from existing O<sub>3</sub> monitors, or other quantitative assessment tools are useful to determine the areas where there are projected maximum non-urban O<sub>3</sub> concentrations, and where these regions with elevated O<sub>3</sub> (typically greater than or equal to 85 percent of the revised NAAQS) might overlap locations with O<sub>3</sub>-sensitive ecosystems and other important wilderness areas and Micropolitan Statistical Areas. The availability of

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<sup>16</sup> An example of available resources is posted by the National Park Service at <http://www.nature.nps.gov/air/Pubs/pdf/flag/NPSO3sensppFLAG06.pdf>

regional photochemical modeling based on updated emissions inventories is a very useful tool to inform proposed non-urban and/or rural O<sub>3</sub> monitoring locations in areas, such as the western U.S., where national assessments have not fully accounted for recent changes in emissions from industrial activities. EPA plans to update the current O<sub>3</sub> network design guidance document<sup>17</sup> in time to support the siting of new urban and non-urban O<sub>3</sub> monitors that are required by the final monitoring rule.

Monitors counted toward satisfying these proposed non-urban requirements would have to be operated in compliance with all requirements of 40 CFR part 58 and Appendices A, C, D, and E. EPA recognizes that a different set of monitor placement criteria from the current Appendix E requirements might be appropriate for locating non-urban O<sub>3</sub> monitors compared with urban O<sub>3</sub> monitors. For example, in less populated areas, states may wish to establish different setback requirements from roadways, minimum distances from urban areas or significant pollution sources, or consider a different set of vertical probe height requirements. EPA is not proposing specific changes to the monitoring regulations to support non-urban O<sub>3</sub>

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<sup>17</sup> Guideline on Ozone Monitoring Site Selection, EPA-454/R-98-002, August 1998, <http://www.epa.gov/ttn/amtic/files/ambient/criteria/reldocs/r-98-002.pdf>

monitoring other than the changes already noted to Appendix D. EPA encourages states to consider guidelines such as the previously noted siting guidelines used for the CASTNET network. We solicit comment on the need and substance of alternative non-urban O<sub>3</sub> siting requirements and what changes would be appropriate for sites that will support the previously stated non-urban monitoring objectives.

EPA also acknowledges that there may be a logistical challenge in operating monitors that are more physically remote than the monitors that states have typically run to satisfy urban monitoring requirements. The operation of such monitors could, in some cases, create additional challenges for monitoring agencies. EPA solicits comment on any changes to the monitoring requirements that apply specifically to non-urban monitors that might be appropriate to mitigate any increased challenges potentially associated with their operation.

As noted earlier in section II.A, states may wish to relocate existing O<sub>3</sub> monitors to appropriate non-urban locations to meet the proposed requirements. Relocations of state and local air monitoring station (SLAMS) monitors must meet the applicable monitoring requirements and would be subject to EPA Regional Administrator approval. States may also propose that existing non-required O<sub>3</sub> monitors or

those O<sub>3</sub> monitors at existing candidate or approved rural national core (NCore) stations be counted toward meeting the proposed requirements if these monitors are located in areas that satisfy the proposed non-urban monitoring objectives.

EPA expects that some states may be interested in the possibility of existing CASTNET or NPS O<sub>3</sub> monitors, or monitors operated by some other organization, being counted towards meeting the proposed non-urban minimum monitoring requirements. In these cases, EPA would require states to enter into agreements with the operators<sup>18</sup> of the candidate sites to insure that the sites are operated according to all 40 CFR part 58 monitoring regulations that apply to monitors categorized as SLAMS while also maintaining the monitoring requirements of the existing program. Candidate O<sub>3</sub> sites (e.g., CASTNET or NPS) utilized for meeting minimum monitoring requirements would be required to be included in a state's annual monitoring network plan and would be subject to EPA Regional Administrator review and approval as with all other SLAMS monitors. Of the currently operating CASTNET O<sub>3</sub> monitors, the 23 NPS-operated monitors are meeting applicable quality assurance requirements and

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<sup>18</sup> CASTNET O<sub>3</sub> monitors are operated by the Clean Air Markets Division of EPA's Office of Atmospheric Programs (OAP). Some CASTNET sites are operated by the National Park Service in a cooperative agreement with OAP.

currently reporting data to AQS. The remaining CASTNET monitors are in the process of being upgraded to meet the quality assurance requirements of 40 CFR part 58 and all sites are expected to be upgraded and reporting to AQS by the latter part of 2009.

In certain cases, it may be difficult to identify suitable areas to meet each of the proposed non-urban monitoring objectives. For example, in a small relatively urbanized state, it may be difficult to distinguish between monitoring requirements for a Micropolitan Statistical Area versus a rural area impacted by maximum O<sub>3</sub> concentrations. In a remote or isolated area without significant local pollution sources or likelihood of being impacted by transport of O<sub>3</sub> precursors from another area (e.g., Guam or American Samoa), it may be unwarranted to require the placement of additional non-urban monitors. States with historically lower ambient O<sub>3</sub> levels may not have Micropolitan Statistical Areas likely to experience O<sub>3</sub> concentrations of at least 85 percent of the NAAQS. It is also plausible that a state may not have ecosystems characterized by O<sub>3</sub>-sensitive natural vegetation that have been designated for providing specific public welfare amenities or benefits. States might expect in some cases that the establishment of multiple non-urban O<sub>3</sub> monitors to

meet one or two of the proposed non-urban monitoring objectives (e.g., three monitors located in areas with sensitive ecosystems), would be more important than allocating an additional monitor to meet each of the three distinct monitoring objectives. In addition, one monitor could conceivably serve multiple purposes so that fewer than three monitors would be needed to meet these objectives.

In situations like those described above, states may choose to seek from the EPA Regional Administrator a deviation from such requirements that either modify or waive these requirements, consistent with the authority to approve deviations from non-urban O<sub>3</sub> minimum monitoring requirements stated in the proposed regulatory language in paragraph 4.1.2(e) of 40 CFR part 58, Appendix D. When seeking approval of such deviations, the state must provide relevant information specific to the basis for which the waiver is sought. Any deviations based on the Regional Administrator's waiver of requirements must be described in the annual monitoring network plan.

Based on the proposed requirements described above, EPA estimates that approximately 159 new non-urban O<sub>3</sub> monitors would be required in the national O<sub>3</sub> network if the proposed non-urban requirements were satisfied solely with

new monitors. In actuality, we expect the net addition of less than 159 additional monitors to the national O<sub>3</sub> network due to the mitigating factors that have been previously described. These factors include the presence of existing non-urban monitors that are satisfactorily located to meet one or more of the proposed monitoring objectives, the proposed flexibility for states to relocate existing non-required O<sub>3</sub> monitors to non-urban areas, the option of states proposing that some existing CASTNET or NPS monitors be counted towards meeting the proposed non-urban requirements, and the possibility of states obtaining Regional Administrator waivers of certain non-urban minimum requirements based on the situations described above.

EPA solicits comment on the appropriateness of these proposed minimum non-urban monitoring requirements, including the distinct monitoring objectives, the required number of monitors, the criteria for placement, and the need to allow EPA Regional Administrators discretion to waive or modify siting criteria or minimum requirements.

C. What are the Proposed Revisions to the Length of the Required O<sub>3</sub> Monitoring Season?

Unlike the ambient monitoring requirements for other criteria pollutants that mandate year-round monitoring, O<sub>3</sub> monitoring is currently only required during the seasons of

the year that are conducive to O<sub>3</sub> formation. These seasons vary in length from place to place as the conditions that determine the likely O<sub>3</sub> formation (i.e., seasonally-dependent factors such as ambient temperature, strength of solar insolation, and length of day) differ by location.<sup>19</sup> In some locations, conditions conducive to O<sub>3</sub> formation are limited to a few summer months of the year. For example, in states with colder climates such as Montana and South Dakota, the currently required O<sub>3</sub> monitoring season has a length of 4 months. However, in other states with warmer climates such as California, Nevada, and Arizona, the currently required O<sub>3</sub> monitoring season for most sites continues all 12 months of the year.<sup>20</sup>

With the recent revision of the primary and secondary NAAQS to a more stringent level, the issue arises of whether in some areas the required O<sub>3</sub> monitoring season should be made longer. Lengthening the season in certain states may be appropriate as ambient O<sub>3</sub> concentrations could approach or exceed the level of the revised standard more frequently and during more months of the year than before. As noted later in this section, a related issue is the

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<sup>19</sup> See 40 CFR Part 58 Appendix D, section 2.5 for a table of required O<sub>3</sub> seasons.

<sup>20</sup> Certain states, such as California and Arizona, have been approved for shorter seasons for a subset of O<sub>3</sub> sites, based on Regional Administrator review and approval (see 71 FR 61319 for the waiver authority).

status of any currently effective Regional Administrator-granted waiver approvals to O<sub>3</sub> monitoring seasons, and the impact of proposed changes to monitoring requirements on such waiver approvals.

EPA has done an analysis to address the issue of whether extensions of currently required monitoring seasons are appropriate in light of the revised NAAQS.<sup>21</sup> In the analysis, we determined the number of exceedences of the revised NAAQS (i.e., daily maximum 8-hour O<sub>3</sub> averages above 0.075 ppm) in the months falling outside the currently required local O<sub>3</sub> monitoring season using monitors in areas that collected O<sub>3</sub> data year-round in 2004-2006.<sup>22</sup> Additionally, we examined occurrences of daily maximum 8-hour O<sub>3</sub> averages of at least 0.060 ppm. This threshold represents 80 percent of the 0.075 ppm NAAQS level and provides an indicator of ambient conditions that may be conducive to the formation of O<sub>3</sub> concentrations that approach or exceed the revised NAAQS.<sup>23</sup>

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<sup>21</sup> Camalier, L and Weinstock, L. (2008) Documentation of O<sub>3</sub> Monitoring Season Analysis for the Proposed O<sub>3</sub> Monitoring Rule, available in docket.

<sup>22</sup> Approximately 530 O<sub>3</sub> monitors are currently operated year-round, representing 45 percent of the total O<sub>3</sub> monitoring network. They include monitors that are mandated to operate year-round due to the required O<sub>3</sub> season and other monitors that are voluntarily operated year-round by states and other organizations including EPA-operated monitors at CASTNET sites.

<sup>23</sup> We note that an 8-hour concentration of 0.060 ppm also corresponds to the threshold defining the revised Air Quality Index (AQI) breakpoint between the Good and Moderate indicator level (see 73 FR 16484).

While proposals for revising each state's required monitoring season have been based on observed data in and surrounding the state, statistically predicted exceedences were used to validate conclusions for each state. For states where year-round data were not available, EPA developed and employed a regression model to predict the frequency of exceedences in areas during unmonitored months. The model was fit separately for each major urban area and uses the relationship between daily maximum 8-hour O<sub>3</sub> concentrations and certain meteorological variables, including temperature and relative humidity, to predict exceedences of a particular O<sub>3</sub> level.<sup>24</sup>

In reviewing the year-round or close to year-round O<sub>3</sub> data between 2004 and 2006, EPA's analysis found observed exceedences of the revised O<sub>3</sub> NAAQS in eight states during months outside of the current required monitoring season. The eight states are Maine, Massachusetts, New Hampshire, New Jersey, New York, South Carolina, Vermont, and Wyoming. With the exception of Wyoming, the exceedences occurred in a very limited manner and timeframe, just before the beginning of these states' required O<sub>3</sub> monitoring season (beginning in these states on April 1). Every exceedance

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<sup>24</sup> See: Camalier, L., Cox, B., and Dolwick, P., 2007. The effects of meteorology on O<sub>3</sub> in urban areas and their use in assessing O<sub>3</sub> trends. *Atmospheric Environment* 41, 7127-7137.

in the aforementioned states was found to occur either on March 30 or March 31. In Wyoming, the frequency of O<sub>3</sub> exceedances before the beginning of the required O<sub>3</sub> season was higher, with multiple occurrences noted at several sites up to 2 months before the April 1 startup of required O<sub>3</sub> monitoring.<sup>25</sup>

The frequency of observed occurrences of maximum 8-hour average O<sub>3</sub> readings of at least 0.060 ppm was quite high across the country in months outside of the current required monitoring season. A total of 32 states experienced such occurrences; 22 states had such readings only before the required monitoring season; 9 states had such levels both before and after the required monitoring season; and 1 state had such levels only after the required monitoring season. In a number of cases, the frequency of such ambient concentrations was high, with some states experiencing between 31 to 46 out-of-season days during 2004 to 2006 at a high percentage of all operating year-round O<sub>3</sub> monitors.<sup>26</sup>

EPA believes that these occurrences of O<sub>3</sub> levels greater than the 0.075 ppm NAAQS and as well as greater than or equal to a threshold level of 0.060 ppm in months

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<sup>25</sup> Additional information on this O<sub>3</sub> situation is available on the Wyoming DEQ website: <http://deq.state.wy.us/aqd/Monitoring%20Data.asp>

<sup>26</sup> Florida, South Carolina, South Dakota, Utah, and Wyoming.

that are not within the currently required O<sub>3</sub> monitoring season support the proposed lengthening of the O<sub>3</sub> monitoring season requirements. We note that basing O<sub>3</sub> monitoring season requirements on the goal of ensuring monitoring when ambient O<sub>3</sub> levels reach 80 percent of the NAAQS supports established monitoring network objectives described in Appendix D of part 58, including the requirement to provide air pollution data to the general public in a timely manner<sup>27</sup> and to support comparisons of an area's air pollution levels against the NAAQS.

We note that the operation of O<sub>3</sub> monitors during periods of time when ambient levels reach at least 80 percent of the NAAQS ensures that persons unusually sensitive to O<sub>3</sub> are alerted to potential NAAQS exceedances. The majority of O<sub>3</sub> monitors in the U.S. report to AIRNOW, as well as to state-operated web sites and automated phone reporting systems. These programs support many objectives including real-time air quality reporting to the public, O<sub>3</sub> forecasting programs, and the verification of real-time air quality forecast models.

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<sup>27</sup> Public reporting requirements are detailed in 40 CFR part 58 Appendix G, Uniform Air Quality Index (AQI) and Daily Reporting. Appendix G describes the requirements for the AQI and notes that it conveys health implications of air quality and that the reports may contain appropriate health and cautionary statements. CAA section 319(a) provides EPA with a general authority to "promulgate regulations establishing an air quality monitoring system" that uses "uniform air quality monitoring criteria and measures such air quality according to a uniform air quality index."

In conclusion, EPA believes that the stated approach of ensuring that O<sub>3</sub> monitors are operating during all periods likely to involve NAAQS exceedances supports the proposed lengthening of required O<sub>3</sub> monitoring seasons as described in detail below.

We note that basing these proposed revisions, in part, on occurrences of O<sub>3</sub> levels representing at least 80 percent of revised NAAQS represents a modification of previous guidance.<sup>28</sup> In the past, monitoring season requirements were based solely on O<sub>3</sub> NAAQS exceedances, although previous guidance did utilize the number of days in each month in which at least one 8-hour average O<sub>3</sub> concentration exceeded 0.080 ppm, a value slightly lower than the value of 0.084 ppm used for nonattainment determinations. This use of 0.080 ppm rather than 0.08(4) ppm as articulated in the previous NAAQS for O<sub>3</sub> resulted in a more conservative benchmark that required monitoring in months that, given reasonable measurement uncertainty, had the potential to violate the previous NAAQS.

The specific proposed changes to the required state O<sub>3</sub> monitoring seasons are detailed in the proposed changes to Table D-3 of 40 CFR part 58 Appendix D (O<sub>3</sub> Monitoring Season

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<sup>28</sup> Guideline for Selecting and Modifying the Ozone Season Based on an 8-Hour Ozone Standard, EPA-454/R-98-001, June 1998, <http://www.epa.gov/ttn/amtic/files/ambient/criteria/reldocs/ozsea8hr.pdf>

by state). These changes entail a proposed decrease of one month for Minnesota, an increase of 1 month (19 states), 2 months (6 states), 4 months (3 states), and 5 months (Wyoming). O<sub>3</sub> season requirements are currently split by Air Quality Control Region in Louisiana and Texas.

Included in the above state-by-state accounting is the proposal to lengthen the required season in the northern part of Louisiana by 1 month (southern Louisiana O<sub>3</sub> monitors would remain on a required year-round schedule) and the proposal for the required season in Texas to become year-round for the entire state. Proposed modifications to the current requirements were based on the previously described technical analysis. In several states with limited available data, proposed changes were made using supporting information from the surrounding states; these changes were all minor, involving the addition of a maximum of 1 month to the current required season.<sup>29</sup>

EPA solicits comment on the proposed changes to the required O<sub>3</sub> monitoring seasons. We note that EPA Regional Administrators have previously approved deviations from the required O<sub>3</sub> monitoring seasons in direct final rulemakings, the process required before the latest monitoring rule

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<sup>29</sup> Delaware, Iowa, North Dakota, and Wisconsin.

revisions.<sup>30</sup> Deviations from the required O<sub>3</sub> monitoring seasons are currently permitted by paragraph 4.1(i) of 40 CFR part 58 Appendix D (see 71 FR 61319) as revised in the October 17, 2006 revisions to the ambient monitoring regulations without rulemaking. EPA is retaining the rule language permitting such deviations from the required O<sub>3</sub> monitoring seasons in proposed paragraph 4.1.1(j) of 40 CFR part 58, Appendix D. The proposed changes to O<sub>3</sub> monitoring season requirements, if finalized, will render moot previous Regional Administrator-granted waiver approvals. Post-final rule requests submitted along with relevant supporting information by states for monitoring season waivers from the revised requirements will be reviewed by Regional Administrators using, at a minimum, the same criteria discussed in this proposal, i.e., the frequency of out-of-season O<sub>3</sub> NAAQS exceedances as well as occurrences of the Moderate AQI. Any deviations based on the Regional Administrator's waiver of requirements must be described in the annual monitoring network plan and updated in the AQS.

Current regulations permit O<sub>3</sub> monitors located at NCore multi-pollutant stations to be counted toward meeting minimum network monitoring requirements (see 71 FR 61318). The NCore network requirements were promulgated in the

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<sup>30</sup> See 64 FR 3028, 67 FR 57332, 69 FR 52836

October 17, 2006 revisions to ambient monitoring regulations in order to build a long-term, nationwide network that supports multiple objectives including air quality trends analyses, model evaluation, ecosystem studies, and assessment of transport between urban and rural areas. In the 2006 rulemaking, EPA did not propose a different O<sub>3</sub> monitoring season for NCore stations.

NCore stations are required to operate a full suite of gaseous and particulate matter monitors as well as basic meteorology to support these objectives. Given the potential value of NCore data to support year-round scientific studies, EPA believes that it is appropriate to require that O<sub>3</sub> monitors at NCore stations be operated on a year-round basis. Accordingly, EPA proposes that the required monitoring season for NCore stations be January through December regardless of the length of the required O<sub>3</sub> monitoring season for the remainder of the SLAMS monitors within a state. EPA solicits comment on this proposed requirement.

As mentioned in Section II.A of this preamble, EPA is proposing to require that additional urban and non-urban O<sub>3</sub> monitors needed to meet the revised minimum network requirements be documented in the annual monitoring network plan, due by July 1, 2011, and that the monitors be

operational by January 1, 2012. For existing O<sub>3</sub> monitors, we believe that a shorter timeline is reasonable for states to adjust their monitoring programs to reflect the proposed O<sub>3</sub> monitoring season changes. Therefore, EPA is proposing that the revised O<sub>3</sub> monitoring seasons become effective on January 1, 2011. We encourage monitoring agencies to voluntarily adopt the new O<sub>3</sub> monitoring seasons, where appropriate, during 2010. We invite comment on this proposed schedule, including whether it is reasonable for states to adopt the revised O<sub>3</sub> monitoring season 1 year prior to the deadline for installing and operating newly required O<sub>3</sub> monitors based on the proposed requirements.

EPA notes that in the proposed regulatory language for 40 CFR part 58 Appendix D, we are reprinting a number of existing paragraphs without change, including paragraphs 4.1.1(d), 4.1.1(e), 4.1.1(f), 4.1.1(g), and 4.1.1(h). We are doing so solely for the readers' convenience in order that the proposed revisions to section 4 of Appendix D appear in a single context. EPA is not re-proposing, reconsidering, or otherwise reopening any of these reprinted provisions. We will regard any comments as to these provisions as outside the scope of this proposal.

### **III. Statutory and Executive Order Reviews**

#### **A. Executive Order 12866: Regulatory Planning and**

Review

Under Executive Order (EO) 12866 (58 FR 51735, October 4, 1993), this action is a "significant regulatory action" because it may raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the EO. Accordingly, EPA submitted this action to the Office of Management and Budget (OMB) for review under EO 12866, and any changes made in response to OMB recommendations have been documented in the docket for this action.

B. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR No. 2313.01.

The information collected and reported under 40 CFR part 58 is needed to determine compliance with the NAAQS, to characterize air quality and associated health and ecosystems impacts, to develop emission control strategies, and to measure progress for the air pollution program. We are proposing to modify minimum monitoring requirements in urban areas, add new minimum monitoring requirements in

non-urban areas, and to extend the length of the required O<sub>3</sub> monitoring season in some states. We are proposing that new O<sub>3</sub> monitors be required to be established and operating by January 1, 2012. In addition, we are proposing that the revised O<sub>3</sub> monitoring seasons become effective on January 1, 2011.

Based on these assumptions, the annual average reporting burden for the collection under 40 CFR part 58 (averaged over the first 3 years of this ICR) for 145 respondents is estimated to be a total of 72,393 labor hours per year with a total of \$6,320,187 per year. Burden is defined at 5 CFR 1320.3(b). State, local, and tribal entities are eligible for state assistance grants provided by the Federal government under the CAA which can be used for monitors and related activities.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, EPA has established a public docket for this rule, which includes

this ICR, under Docket ID number EPA-HQ-OAR-2008-0338. Submit any comments related to the ICR to EPA and OMB. See **ADDRESSES** section at the beginning of this notice for where to submit comments to EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17<sup>th</sup> Street, NW, Washington, DC 20503, Attention: Desk Office for EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after [Insert date of publication in the Federal Register.], a comment to OMB is best assured of having its full effect if OMB receives it by [Insert date 30 days after publication in the Federal Register.]. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an Agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities

include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impact of this rule on small entities, small entity is defined as: (1) a small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This proposed rule will not impose any requirements on small entities. The proposed amendments to 40 CFR part 58 would affect state and larger local agencies. Monitoring regulations have typically not applied to government jurisdictions of less than 50,000 people. We continue to be interested in the potential impacts of the proposed rule on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

This rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for state, local, and tribal governments, in the aggregate, or the private sector in any one year. We estimate the cost to state, local, and tribal governments to be approximately \$6 million. Therefore, the costs of this proposed rule is much less than \$100 million, and we conclude that this rule is not subject to the requirements of sections 202 and 205 of UMRA.

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by state and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the states, on the relationship between the national government and the

states, or on the distribution of power and responsibilities among the various levels of government.”

This proposed rule does not have federalism implications. EPA estimates the total cost of the proposed rule to be approximately \$6 million. Therefore, it will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Thus, Executive Order 13132 does not apply to this rule.

EPA recognizes that states will have a substantial interest in this proposed rule and any corresponding revisions to associated air quality surveillance requirements in 40 CFR part 58. Accordingly, EPA did consult with the Monitoring Steering Committee of the National Association of Clean Air Agencies during the preparation of this proposed rule. In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and state and local governments, EPA specifically solicits comment on this proposed rule from state and local officials.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It does not have a substantial direct effect on one or more Indian Tribes, since Tribes are not obligated to conduct ambient monitoring for ozone or to adopt the ambient monitoring requirements of 40 CFR part 58. Thus, Executive Order 13175 does not apply to this action.

EPA specifically solicits additional comment on this proposed action from tribal officials.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

EPA interprets EO 13045 (62 F.R. 19885, April 23, 1997) as applying to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the Order has the potential to influence the regulation. This action is not subject to EO 13045 because it is based solely on technology performance.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not a "significant regulatory action" as defined in Executive Order 13211 (66 FR 28355 (May 22, 2001)) because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. No significant change in the use of energy is

expected because the total number of additional monitors would be relatively small.

I. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking involves environmental monitoring and measurement. Consistent with the Agency's Performance Based Measurement System (PBMS), EPA proposed not to require the use of specific, prescribed analytical methods. Rather, the Agency plans to allow the use of any method that meets the prescribed performance criteria. Ambient air concentrations of ozone are currently measured by the Federal reference method (FRM) in 40 CFR part 50, Appendix D (Measurement Principle and Calibration Procedure

for the Measurement of Ozone in the Atmosphere) or by Federal equivalent methods (FEM) that meet the requirements of 40 CFR part 53. Procedures are available in part 53 that allow for the approval of an FEM for ozone that is similar to the FRM. Any method that meets the performance criteria for a candidate equivalent method may be approved for use as an FEM. This approach is consistent with EPA's PBMS. The PBMS approach is intended to be more flexible and cost-effective for the regulated community; it is also intended to encourage innovation in analytical technology and improved data quality. The EPA is not precluding the use of any method, whether it constitutes a voluntary consensus standard or not, as long as it meets the specified performance criteria.

EPA welcomes comments on this aspect of the proposed rulemaking and specifically invites the public to identify potentially-applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629 (Feb. 16, 1994)) establishes Federal executive policy on environmental

justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This proposed rule amendment does not relax the control measures on sources regulated by the rule and therefore will not cause emissions increases nor decrease environmental protection from these sources.

**Ambient Ozone Monitoring Regulations: Revisions to Network  
Design Requirements**

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**List of Subjects in 40 CFR Part 58**

Environmental protection, Administrative practice and procedure, Air pollution control, Intergovernmental relations, Reporting and recordkeeping requirements.

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Dated:

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Lisa P. Jackson,  
Administrator.

For the reasons stated in the preamble, title 40, chapter I, of the Code of Federal Regulations is proposed to be amended as follows:

**PART 58--[AMENDED]**

1. The authority citation for part 58 continues to read as follows:

**Authority:** 42 U.S.C. 7403, 7410, 7601(a), 7611, and 7619.

**Subpart B - [Amended]**

2. Section 58.10 is amended by adding paragraph (a)(5) to read as follows:

§58.10 Annual monitoring network plan and periodic assessment.

(a) \* \* \*

(5) A plan for establishing O<sub>3</sub> monitoring sites in accordance with the requirements of appendix D to this part shall be submitted to the EPA Regional Administrator by July 1, 2011. The plan shall provide for the required O<sub>3</sub> sites to be operational by January 1, 2012 or the first day of the applicable required O<sub>3</sub> monitoring season that is effective in 2012 as listed in Table D-3 of appendix D of this part, whichever date is later.

\* \* \* \* \*

3. Appendix D to Part 58 is amended as follows:

- a. By revising section 4 introductory text
- b. By revising section 4.1
- c. By adding sections 4.1.1 and 4.1.2.

Appendix D to Part 58—Network Design Criteria for Ambient Air Quality Monitoring:

\* \* \* \* \*

4. Pollutant-Specific Design Criteria for SLAMS Sites.

4.1 Ozone (O<sub>3</sub>) Design Criteria. State, and where appropriate, local agencies must operate O<sub>3</sub> sites to appropriately characterize urban areas as well as a limited number of non-urban areas for each state.

4.1.1 Urban Requirements. (a) The minimum monitoring requirements for characterizing O<sub>3</sub> across an urban area depend upon area size (in terms of population and geographic characteristics) and typical peak concentrations (expressed in percentages below, or near the O<sub>3</sub> NAAQS). Specific SLAMS O<sub>3</sub> site minimum requirements are included in Table D-2 of this appendix. The NCore sites are expected to complement the O<sub>3</sub> data collection that takes place at SLAMS sites with one or more pollutant measurements, and both types of sites can be used to meet the network minimum requirements. The total number of O<sub>3</sub> sites needed to support the basic monitoring objectives of public data

reporting, air quality mapping, compliance, and understanding O<sub>3</sub>-related atmospheric processes will include more sites than these minimum numbers required in Table D-2 of this appendix. The EPA Regional Administrator and the responsible state or local air monitoring agency must work together to design and/or maintain the most appropriate O<sub>3</sub> network to service the variety of data needs in an area.

Table D-2 of Appendix D to Part 58. SLAMS Minimum O<sub>3</sub> Monitoring Requirements.

MSA population <sup>1,2</sup>	Most recent 3-year design value concentrations $\geq 85\%$ of any O <sub>3</sub> NAAQS <sup>3,4</sup>	Most recent 3-year design value concentrations $< 85\%$ of any O <sub>3</sub> NAAQS <sup>3</sup>
>10 million	4	2
4 - 10 million	3	1
350,000 - <4 million	2	1
50,000 - <350,000 <sup>5</sup>	1	0

<sup>1</sup> Minimum monitoring requirements apply to the Metropolitan Statistical Area (MSA).

<sup>2</sup> Population based on latest available census figures.

<sup>3</sup> The ozone (O<sub>3</sub>) National Ambient Air Quality Standards (NAAQS) levels and forms are defined in 40 CFR part 50.

<sup>4</sup> These minimum monitoring requirements apply in the absence of a design value.

<sup>5</sup> Metropolitan Statistical Areas (MSA) must contain an urbanized area of 50,000 or more population.

(b) Within an O<sub>3</sub> network, at least one O<sub>3</sub> site for each MSA, or CSA if multiple MSAs are involved, must be designed to record the maximum concentration for that particular metropolitan area. More than one maximum concentration site may be necessary in some areas. Table D-2 of this appendix does not account for the full breadth of additional factors that would be considered in designing a complete O<sub>3</sub> monitoring program for an urban area. Some of these additional factors include geographic size, population density, complexity of terrain and meteorology, adjacent O<sub>3</sub> monitoring programs, air pollution transport from neighboring areas, and measured air quality in comparison to all forms of the O<sub>3</sub> NAAQS (i.e., 8-hour and 1-hour forms). Networks must be designed to account for all of these area characteristics. Network designs must be re-examined in periodic network assessments that document the particular factors used in determining the size of the required O<sub>3</sub> monitoring network.

(c) Deviations from the above urban O<sub>3</sub> requirements are allowed if approved by the EPA Regional Administrator. States may propose and EPA Regional Administrators may consider approving a waiver of monitoring requirements for unmonitored MSAs with populations between 50,000 and less than 350,000 based on the presence of nearby existing

monitors. When seeking such a waiver, the state must provide relevant information including the siting characteristics and data record from the existing O<sub>3</sub> monitors near the unmonitored MSA, or other information sources that the Regional Administrator must consider in evaluating the estimation of current and future O<sub>3</sub> levels in the unmonitored MSAs. Such waiver requests must be accompanied by a letter documenting the state's commitment to propose a nonattainment designation for the unmonitored MSA based on violating readings from the nearby monitor(s) and a commitment to modify a State Implementation Plan (SIP) to provide for a specific, reproducible approach to representing the O<sub>3</sub> concentration of the unmonitored MSA in the absence of the actual monitoring data that would have been supplied by the required monitor. Any deviations based on the Regional Administrator's waiver of requirements must be described in the annual monitoring network plan.

(d) The appropriate spatial scales for O<sub>3</sub> sites are neighborhood, urban, and regional. Since O<sub>3</sub> requires appreciable formation time, the mixing of reactants and products occurs over large volumes of air, and this reduces the importance of monitoring small scale spatial variability.

(1) Neighborhood scale – Measurements in this category represent conditions throughout some reasonably homogeneous urban sub-region, with dimensions of a few kilometers. Homogeneity refers to pollutant concentrations. Neighborhood scale data will provide valuable information for developing, testing, and revising concepts and models that describe urban/regional concentration patterns. These data will be useful to the understanding and definition of processes that take periods of hours to occur and hence involve considerable mixing and transport. Under stagnation conditions, a site located in the neighborhood scale may also experience peak concentration levels within a metropolitan area.

(2) Urban scale – Measurement in this scale will be used to estimate concentrations over large portions of an urban area with dimensions of several kilometers to 50 or more kilometers. Such measurements will be used for determining trends, and designing area-wide control strategies. The urban scale sites would also be used to measure high concentrations downwind of the area having the highest precursor emissions.

(3) Regional scale – This scale of measurement will be used to typify concentrations over large portions of a metropolitan area and even larger areas with dimensions of as much as hundreds of kilometers. Such measurements will be useful for assessing the O<sub>3</sub> that is transported to and from a metropolitan area, as well as background concentrations. In some situations, particularly when considering very large metropolitan areas with complex source mixtures, regional scale sites can be the maximum concentration location.

(e) EPA's technical guidance documents on O<sub>3</sub> monitoring network design should be consulted to evaluate the adequacy of each existing O<sub>3</sub> monitor, to relocate an existing site, or to locate any new O<sub>3</sub> sites.

(f) For locating a neighborhood scale site to measure typical city concentrations, a reasonably homogeneous geographical area near the center of the region should be selected which is also removed from the influence of major NO<sub>x</sub> sources. For an urban scale site to measure the high concentration areas, the emission inventories should be used to define the extent of the area of important nonmethane hydrocarbons and NO<sub>x</sub> emissions. The meteorological conditions that occur during periods of maximum photochemical activity should be determined. These periods can be identified by examining the meteorological conditions that occur on the highest O<sub>3</sub> air quality days. Trajectory analyses, an evaluation of wind and emission patterns on high O<sub>3</sub> days, can also be useful in evaluating an O<sub>3</sub> monitoring network. In areas without any previous O<sub>3</sub> air quality measurements, meteorological and O<sub>3</sub> precursor emissions information would be useful.

(g) Once the meteorological and air quality data are reviewed, the prospective maximum concentration monitor site should be selected in a direction from the city that is most likely to observe the highest O<sub>3</sub> concentrations, more specifically, downwind during periods of photochemical activity. In many cases, these maximum concentration O<sub>3</sub> sites will be located 10 to 30 miles or more downwind from the urban area where maximum O<sub>3</sub> precursor emissions originate. The downwind direction and appropriate distance should be determined from historical meteorological data collected on days which show the potential for producing high O<sub>3</sub> levels. Monitoring agencies are to consult with their EPA Regional Office when considering siting a maximum O<sub>3</sub> concentration site.

(h) In locating a neighborhood scale site which is to measure high concentrations, the same procedures used for the urban scale are followed except that the site should be located closer to the areas bordering on the center city or slightly further downwind in an area of high density population.

(i) For regional scale background monitoring sites and non-urban monitoring sites, similar meteorological analysis as for the maximum concentration sites may also inform the decisions for locating regional scale sites. Regional scale sites may be located to provide data on O<sub>3</sub> transport between cities, as background sites, or for other data collection purposes. Consideration of both area characteristics, such as meteorology, and the data collection for both urban and non-urban objectives, such as transport, must be jointly considered for a regional scale site to be useful.

(j) Since O<sub>3</sub> levels decrease significantly in the colder parts of the year in many areas, O<sub>3</sub> is required to be monitored at SLAMS monitoring sites only during the "ozone season" as designated in the AQS files on a state-by-state basis and described below in Table D-3 of this appendix.

Deviations from the O<sub>3</sub> monitoring season must be approved by the EPA Regional Administrator. Requests for monitoring season waivers must be accompanied by relevant supporting information. These requests will be reviewed by Regional Administrators using, at a minimum, the frequency of out-of-season O<sub>3</sub> NAAQS exceedances as well as occurrences of the Moderate air quality index level. Any deviations based on the Regional Administrator's waiver of requirements must be described in the annual monitoring network plan and updated in AQS. Changes to the O<sub>3</sub> monitoring season requirements in Table D-3 moot any previously approved Regional Administrator waivers for affected states. O<sub>3</sub> monitors at NCore stations are required to be operated on a year-round basis, i.e., January to December. Information on how to analyze O<sub>3</sub> data to support a change to the O<sub>3</sub> season in support of the 8-hour standard for a specific state can be found in reference 8 to this appendix.

Table D-3 to Appendix D of Part 58. Ozone Monitoring  
Season by state<sup>1</sup>

State	Begin Month	End Month
Alabama	March	October
Alaska	April	October
Arizona	January	December
Arkansas	March	November
California	January	December
Colorado	March	September
Connecticut	March	October
Delaware	March	October
District of Columbia	March	October
Florida	January	December
Georgia	February	October
Hawaii	January	December
Idaho	April	September
Illinois	April	October
Indiana	March	October
Iowa	April	October
Kansas	April	October
Kentucky	March	October
Louisiana AQCR 019,022	March	November
Louisiana AQCR 106	January	December
Maine	April	September
Maryland	March	October
Massachusetts	March	September
Michigan	April	September
Minnesota	April	September

Mississippi	January	December
Missouri	March	October
Montana	May	September
Nebraska	April	October
Nevada	January	December
New Hampshire	March	September
New Jersey	March	October
New Mexico	January	December
New York	March	October
North Carolina	March	October
North Dakota	April	September
Ohio	April	October
Oklahoma	March	November
Oregon	May	September
Pennsylvania	March	October
Puerto Rico	January	December
Rhode Island	April	September
South Carolina	February	October
South Dakota	April	September
Tennessee	February	October
Texas	January	December
Utah	April	October
Vermont	March	September
Virginia	March	October
Washington	March	September
West Virginia	April	October
Wisconsin	April	October
Wyoming	January	December
American Samoa	January	December
Guam	January	December

Virgin Islands	January	December
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<sup>1</sup> The required O<sub>3</sub> monitoring season for NCore stations is January through December.

4.1.2 Non-urban Requirements. (a) Each state shall install and operate at least three O<sub>3</sub> sites to monitor concentrations in non-urban areas. Three non-urban sites cannot fully characterize O<sub>3</sub> levels across most states; however, in many cases these sites can provide important representative characterization of O<sub>3</sub> not addressed by O<sub>3</sub> sites in or immediately downwind of urban areas. The total number of non-urban O<sub>3</sub> sites necessary for any one state may be more than are required in this section, especially for those states that have multiple ecosystems or wilderness areas with O<sub>3</sub>-sensitive natural vegetation and/or significantly large distances between multiple Micropolitan Statistical Areas. These non-urban O<sub>3</sub> monitoring sites are in addition to the required sites used to satisfy requirements listed in Table D-2 of this appendix and their operation will be determined through negotiations between the EPA Regional Administrator and the responsible state or local air monitoring agency. Non-urban O<sub>3</sub> sites must be operated during the O<sub>3</sub> season as designated in Table D-3 of this appendix unless deviations have been approved by the EPA Regional Administrator.

(b) For sites chosen to meet non-urban monitoring requirements, each of the following objectives must be met.

(1) To provide characterization of O<sub>3</sub> exposures to O<sub>3</sub>-sensitive vegetation and important ecosystems, at least one monitoring site is to be located in an area such as those set aside to conserve the scenic value and the natural vegetation and wildlife within such areas. These areas may include Federal, state, or Tribal and/or public interest lands that are subject to elevated O<sub>3</sub> concentrations compared with the rest of the state and are characterized by areas of O<sub>3</sub>-sensitive natural vegetation species subject to visible foliar injury, seedling and biomass loss, and other adverse impacts to a degree that could be considered adverse.

(2) To provide O<sub>3</sub> characterization of less-populated areas, at least one monitoring site is to be located to represent a Micropolitan Statistical Area expected to have a maximum O<sub>3</sub> design value concentration of at least 85 percent of the NAAQS. Micropolitan Statistical Areas have at least one urban cluster of at least 10,000 but less than 50,000 population. Monitors meeting this requirement can be discontinued, with Regional Administrator approval, after demonstrating a design value of less than 85 percent of the NAAQS.

(3) To provide O<sub>3</sub> characterization in non-urban areas impacted by transport, at least one monitoring site is to

be located in the area of expected maximum O<sub>3</sub> concentration outside of currently monitored MSAs, Micropolitan Statistical Areas, and sensitive ecosystems. This type of site could potentially include upwind transport areas or rural locations that are farther downwind from existing maximum concentration O<sub>3</sub> sites intended to represent an urban area.

(c) States are encouraged to utilize resources and analyses such as photochemical modeling, spatial interpolation of ambient data from existing O<sub>3</sub> monitors, or other quantitative assessment tools to determine the areas where there are projected maximum non-urban O<sub>3</sub> concentrations, and where these regions with elevated O<sub>3</sub> might overlap O<sub>3</sub>-sensitive ecosystems, and other important wilderness areas and Micropolitan Statistical Areas. Federal Land Managers, state, local, or Tribal ecosystem assessment experts, or academic researchers who are familiar with the patterns of vegetation damage and distribution of O<sub>3</sub> sensitive species in their areas should also be consulted. A state may propose establishing or moving a site as part of their annual monitoring network plan due each year as provided in §58.10; however, such quantitative assessments to determine the required non-urban O<sub>3</sub> monitors shall be updated as part of the assessment

of their air quality surveillance system due to the EPA Regional Administrator every 5 years as required by §58.10.

(d) In some cases, non-urban O<sub>3</sub> monitors may already be operating by monitoring organizations (e.g., the National Park Service) other than the responsible state or local agency. State or local agencies may utilize such O<sub>3</sub> monitors for one or more of the required non-urban monitors under the following provisions:

(1) The O<sub>3</sub> monitor in use by another monitoring organization meets the quality assurance, method requirements, and probe and siting criteria as provided for in Appendices A, C, and E of this part, including any applicable approved waivers according to the conditions of each applicable appendix.

(2) The O<sub>3</sub> monitor is included in the applicable state or local agency annual monitoring network plan as provided for §58.10.

(3) Data are included in the Annual Air Monitoring Data Certification as provided for in §58.15.

(4) Data are submitted according to the requirements of §58.16.

(5) Data are made available to the state or local agency in a timely manner for reports of the air quality index according to the requirements of §58.50 and to

support other real-time data objectives such as national air quality mapping or forecasting.

(6) If for any reason the O<sub>3</sub> monitor is shut down, the applicable state or local agency must address how it proposes to meet the loss of data in the next required annual monitoring network plan as provided for in §58.10.

(e) States may choose to seek from the EPA Regional Administrator a deviation from non-urban requirements that either modify or waive these requirements, for example, in a small, relatively urbanized state, in situations where a state believes that one of the required non-urban monitors can meet more than one objective, or where a state can demonstrate that no Micropolitan Statistical Area will experience design value concentrations of at least 85 percent of the NAAQS. When seeking approval of such deviations, the state must provide relevant information specific to the basis for which the waiver is sought. Any deviations based on the Regional Administrator's waiver of requirements must be described in the annual monitoring network plan.

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