

The EPA Administrator, Gina McCarthy, signed the following notice on 12/22/2016, and EPA is submitting it for publication in the *Federal Register* (FR). While we have taken steps to ensure the accuracy of this Internet version of the rule, it is not the official version of the rule for purposes of compliance. Please refer to the official version in a forthcoming FR publication, which will appear on the Government Printing Office's FDSys website (<http://gpo.gov/fdsys/search/home.action>) and on Regulations.gov (<http://www.regulations.gov>) in Docket No. EPA-HQ-OAR-2015-0486. Once the official version of this document is published in the FR, this version will be removed from the Internet and replaced with a link to the official version.

6560-50-P

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 58**

**[EPA-HQ-OAR-2015-0486, FRL-]**

**RIN 2060-AS71**

**Revision to the Near-road NO<sub>2</sub> Minimum Monitoring Requirements**

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

**ACTION:** Final rule.

**SUMMARY:** This action finalizes revisions to the minimum monitoring requirements for near-road nitrogen dioxide (NO<sub>2</sub>) monitoring by removing the existing requirements for near-road NO<sub>2</sub> monitoring stations in Core Based Statistical Areas (CBSAs) having populations between 500,000 and 1,000,000 persons, that are due by January 1, 2017.

**DATES:** This final rule is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Section 553(d) of the Administrative Procedure Act (APA), 5 U.S.C. Chapter 5, generally provides that rules may not take effect earlier than 30 days after they are published in the Federal Register. The EPA is issuing this final rule under section 307(d)(1) of the Clean Air Act, which states: "The provisions of section 553 through 557 ... of Title 5 shall not, except as expressly provided in this section, apply to

actions to which this subsection applies." Thus, section 553(d) of the APA does not apply to this rule. The EPA is nevertheless acting consistently with the purposes underlying APA section 553(d) in making this rule effective on January 1, 2017. Section 553(d) allows an effective date less than 30 days after publication for a rule that "grants or recognizes an exemption or relieves a restriction" or "as otherwise provided by the agency for good cause found and published with the rule." The EPA finds that there is good cause for this rule to become effective immediately, because this rule removes a restriction. Specifically, this final rule removes the requirement for states to install air quality monitors in certain areas by January 1, 2017.

**ADDRESSES:** The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2015-0486. All documents in the docket are listed at <http://www.regulations.gov>. Although listed in the index, some information may not be publicly available, e.g., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available electronically through [www.regulations.gov](http://www.regulations.gov). In addition to being available in the docket, an electronic copy of the rule will

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also be available at <https://www.epa.gov/no2-pollution/ambient-nitrogen-dioxide-monitoring-requirements>.

**FOR FURTHER INFORMATION, CONTACT:** Mr. Nealson Watkins, Air Quality Assessment Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Mail code C304-06, Research Triangle Park, NC 27711; telephone: (919) 541-5522; fax: (919) 541-1903; email: [watkins.nealson@epa.gov](mailto:watkins.nealson@epa.gov).

**JUDICIAL REVIEW:** This is a nationally applicable rulemaking because it revises generally applicable monitoring network requirements. Even if this rulemaking were not considered nationally applicable, EPA has determined that this action is of nationwide scope and effect because the monitors that will no longer be required under this rulemaking are located in 28 states, which fall within the jurisdiction of all 10 federal courts of appeals. Therefore, under CAA section 307(b)(1), judicial review of this final rule is available only by filing a petition for review in the U.S. Court of Appeals for the D.C. Circuit by [insert date 60 days from date of publication in the Federal Register].

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## **I. Background**

On February 9, 2010, the EPA promulgated minimum monitoring requirements for the ambient NO<sub>2</sub> monitoring network in support of the revised NO<sub>2</sub> NAAQS (75 FR 6474; February 9, 2010). The 2010 NO<sub>2</sub> NAAQS revision introduced a 1-hour standard with a 98<sup>th</sup> percentile form averaged over 3 years and a level of 100 parts per billion (ppb), reflecting the maximum allowable NO<sub>2</sub> concentration anywhere in an area, while retaining the annual standard of 53 ppb.

As part of the 2010 NO<sub>2</sub> NAAQS rulemaking, the EPA promulgated revisions to requirements for minimum numbers of ambient NO<sub>2</sub> monitors which included new monitoring near major roads in

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larger urban areas, requirements to characterize NO<sub>2</sub> concentrations representative of wider spatial scales in larger urban areas (area-wide monitors), and monitors intended to characterize NO<sub>2</sub> exposures of susceptible and vulnerable populations. Specifically, the requirements for these minimum monitoring requirements that were promulgated in 2010 were as follows:

(a) The first tier of the ambient NO<sub>2</sub> monitoring network required near-road monitoring.<sup>1</sup> The requirements included the placement of one near-road NO<sub>2</sub> monitoring station in each CBSA with a population of 500,000 or more persons to monitor a location of expected maximum hourly concentrations sited near a major road. An additional near-road NO<sub>2</sub> monitoring station was required at a second location of expected maximum hourly concentrations for any CBSA with a population of 2,500,000 or more persons, or in any CBSA with a population of 500,000 or more persons that has one or more roadway segments with 250,000 or greater Annual Average Daily Traffic (AADT) counts. Based upon 2010 census data and data maintained by the U.S. Department of Transportation's Federal Highway Administration on the most heavily trafficked roads in the U.S.

(<http://www.fhwa.dot.gov/policyinformation/tables/02.cfm>),

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<sup>1</sup> See 40 CFR part 58, appendix D, section 4.3.2.

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approximately 126 near-road NO<sub>2</sub> sites were required within 103 CBSAs nationwide at the time of rule promulgation.

(b) The second tier of the NO<sub>2</sub> network required area-wide NO<sub>2</sub> monitoring<sup>2</sup>, where area-wide means that the monitor is representative of a spatial scale of representativeness of neighborhood scale (0.5 to 4 km in dimension) or larger, as defined in 40 Code of Federal Regulations (CFR) part 58, appendix D, section 1.2. Requirements included the placement of one monitor in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected highest NO<sub>2</sub> concentrations representing the neighborhood or larger spatial scales. Based on 2010 census data, approximately 52 area-wide NO<sub>2</sub> sites were required within 52 CBSAs at the time of rule promulgation.

(c) The third tier of the NO<sub>2</sub> minimum monitoring requirements was for the characterization of NO<sub>2</sub> exposure for susceptible and vulnerable populations.<sup>3</sup> The EPA Regional Administrators, in collaboration with states, required 40 NO<sub>2</sub> monitoring stations nationwide in any area, inside or outside of CBSAs, in addition to the minimum monitoring requirements for near-road and area-wide monitors, with a primary focus on monitoring in locations with susceptible and vulnerable populations. Monitoring sites

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<sup>2</sup> See 40 CFR part 58, appendix D, section 4.3.3.

<sup>3</sup> See 40 CFR part 58, appendix D, section 4.3.4.

intended to satisfy these NO<sub>2</sub> minimum monitoring requirements were required to be submitted to the EPA for approval. Per 40 CFR 58.10 and 58.13, states were required to submit a plan to the EPA for establishing required area-wide NO<sub>2</sub> monitoring sites and those NO<sub>2</sub> monitoring sites intended to represent areas with susceptible and vulnerable populations by July 1, 2012, and ensure that the monitoring stations were operational by January 1, 2013. State and local air monitoring agencies fulfilled the requirements for area-wide monitors and those sites representing areas with susceptible and vulnerable populations on schedule.

The near-road component of the ambient NO<sub>2</sub> monitoring network was also originally required to be completely operational by January 1, 2013. However, in 2012, the EPA proposed (77 FR 64244; October 19, 2012) and then finalized in 2013 (78 FR 16184; March 14, 2013), through a public notice and comment rulemaking, a requirement that the near-road NO<sub>2</sub> monitoring stations be installed in three phases. The revised installation schedule allowed more time for states to establish the near-road NO<sub>2</sub> network on a schedule consistent with available resources. The revised installation schedule for the near-road NO<sub>2</sub> monitoring network was modified to reflect the following:

Phase 1: In CBSAs with a population of 1,000,000 or more persons, one near-road NO<sub>2</sub> monitor shall be reflected in the state Annual Monitoring Network Plan submitted July 1, 2013, and that monitor shall be operational by January 1, 2014.

Phase 2: In CBSAs where two near-road NO<sub>2</sub> monitors are required (either because the CBSA has a population of 2,500,000 or more persons, or has a population of 500,000 or more persons plus one or more roadway segments having AADT counts of 250,000 or more), the second near-road NO<sub>2</sub> monitor shall be reflected in the state Annual Monitoring Network Plan submitted July 1, 2014, and that monitor shall be operational by January 1, 2015.

Phase 3: In CBSAs with a population of at least 500,000 persons, but less than 1,000,000 persons, one near-road NO<sub>2</sub> monitor shall be reflected in the state Annual Monitoring Network Plan submitted July 1, 2016, and the monitor shall be operational by January 1, 2017.

As of November of 2016, the EPA estimates that 69 near-road NO<sub>2</sub> monitors are in operation. At the time of this rulemaking, the EPA notes that a handful of near-road sites (4 from Phase 1 and 6 from Phase 2) are still in the process of being installed due to various delays at the state and local level. A review of near-road site meta-data indicate that state and local air monitoring agencies have successfully installed these new monitors in the appropriate locations, collectively placing

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monitors adjacent to highly trafficked roads in their respective CBSAs. The latest available near-road NO<sub>2</sub> monitoring site meta-data can be found at

<http://www3.epa.gov/ttn/amtic/nearroad.html>.

## **II. Proposed Revisions to Near-road NO<sub>2</sub> Minimum Monitoring Requirements**

We proposed revisions to the near-road NO<sub>2</sub> minimum monitoring requirements (81 FR 30224) on May 16, 2016, to remove the requirement for near-road NO<sub>2</sub> monitoring stations in CBSAs having populations between 500,000 and 1,000,000 persons, also known as Phase 3 of the near-road NO<sub>2</sub> network. The proposal also included a revision to the requirement for a second near-road NO<sub>2</sub> monitor in any CBSA having 500,000 or more persons that also had one or more road segments with 250,000 or greater AADT counts to only apply to CBSAs having 1,000,000 or more persons, which was intended to align all near-road NO<sub>2</sub> monitoring requirement language to only apply to those CBSAs having 1,000,000 persons or more.

The proposed removal of Phase 3 of the required near-road NO<sub>2</sub> network was based on empirical data and technical rationale, which were discussed in detail in the preamble to the proposed rule and supported by the Near-road NO<sub>2</sub> Network and Data Analysis memo to the docket (docket memo) located at

<https://www.regulations.gov/docket?D=EPA-HQ-OAR-2015-0486>. The

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three key foundations of the proposal were that:

- The Phase 1 and Phase 2 near-road sites that have been installed to date are located at maximum concentration locations consistent with the guidance in the Near-road NO<sub>2</sub> Monitoring Technical Assistance Document (TAD) (<http://www3.epa.gov/ttn/amtic/files/nearroad/NearRoadTAD.pdf>) as demonstrated by a detailed examination of site meta-data.
- The higher populated CBSAs that contain these near-road NO<sub>2</sub> sites have higher mobile source emissions and associated indicators, such as Vehicle Miles Traveled (VMTs), than lesser populated CBSAs.
- Ambient concentrations collected at all existing near-road monitoring sites are well below both the annual and 1-hour daily maximum NAAQS levels of 53 ppb and 100 ppb, respectively.

### **III. Public Comments**

The EPA received 22 individual submissions on the proposal during the public comment period from public health and environmental groups, industry groups, state and local air monitoring agencies and multi-agency groups, and one anonymous public commenter.<sup>4</sup>

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<sup>4</sup> The single anonymous public commenter provided comments that were not within the scope of this rule action, as they requested a revision of the NO<sub>2</sub> NAAQS. This document is a prepublication version, signed by EPA Administrator, Gina McCarthy on 12/22/2016. We have taken steps to ensure the accuracy of this version, but it is not the official version.

Overall, 18 of the 22 commenters supported the proposal. This included all 14 state or multi-state groups: Association of Air Pollution Control Agencies (AAPCA); Akron Regional Air Quality Management District (ARAQMD); Central States Air Resource Agencies Association (CENSARA); Colorado; Georgia; Iowa; Kentucky; Michigan; National Association of Clean Air Agencies (NACAA); Northeast States for Coordinated Air Use Management (NESCAUM); North Carolina; Regional Air Pollution Control Agency, Dayton, OH (RAPCA); South Carolina; and Wisconsin. In addition, all 4 of the industry commenters voiced support of the proposal, including: American Petroleum Institute (API); American Road and Transportation Builders Association (ARTBA); NAAQS Implementation Coalition; and the Utility Air Regulatory Group (UARG).

Those commenters who supported the proposal primarily reiterated that the use of existing network data and meta-data, plus other supporting data, provide the rationale necessary to finalize the proposed changes to remove requirements for Phase 3 monitors from the near-road NO<sub>2</sub> network requirements. For example, AAPCA stated that the "... [proposed] revision is based on clear evidence from Phases 1 and 2 of the near-road network..."

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That comment is not within the scope of today's action because the EPA did not propose any revisions relating to the level of the NAAQS.

and ultimately that the data "...demonstrate the need to remove the monitoring requirements for Phase 3." The API noted that "the Agency's phased monitoring approach has provided EPA the time to collect and analyze early monitoring data, and therefore develop a more accurate view of NO<sub>2</sub> concentrations near roads." The API went on to state that "near-road NO<sub>2</sub> levels in 1,000,000 resident cities represent current high end exposures which are expected to decrease due to improving fleet fuel efficiency and turnover, the same is true for smaller cities addressed by Phase 3." Other commenters also noted Tier 3 Motor Vehicle Emissions and Fuel standards<sup>5</sup>, which the EPA expects to reduce on-road emissions that directly contribute to near-road NO<sub>2</sub> concentrations going into the future. For example, the Iowa Department of Natural Resources stated that "NO<sub>x</sub> emissions from mobile sources are expected to decrease with implementation of the Tier 3 engine and fuel standards..." Finally, NACAA commented that its "...monitoring experts agree with EPA's conclusion that data collected from Phase 3 monitors, which would be located in relatively smaller CBSAs, would almost certainly measure lower or similar NO<sub>2</sub> concentrations [than those measured in the larger CBSAs]."

Those commenters who opposed the proposed rule included all

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<sup>5</sup> More information on the Tier 3 standards can be found at <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-smog-soot-and-other-air-pollution-passenger>

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3 submissions from public health and environmental groups. The first of the three adverse comment submissions was collectively from the following entities: Asthma and Allergy Network, Alliance of Nurses for Healthy Environments, American Lung Association, American Public Health Association, American Thoracic Society, Asthma and Allergy Foundation of America, Children's Environmental Health Network, and Health Care Trust for America's Health. For convenience, through the remainder of this preamble, this group will be referred to as the "Public Health Organizations." The second submission with adverse comments was collectively from the following entities: Earth Justice, Catholic Charities of the Diocese of Stockton, Clean Air Council, Clean Wisconsin, Midwest Environmental Defense Center, Natural Resources Defense Council, Valley Improvement Projects, and We Act for Environmental Justice. For convenience through the remainder of this preamble, this second group will be referred to as the "Environmental Groups." The third submission with adverse comment to the proposed rule was from Clean Air Watch.

The key issues raised in those adverse comments include: 1) arguments that the proposal is inconsistent with the original reasoning behind the establishment of the near-road network requirements in the 2010 NO<sub>2</sub> NAAQS rulemaking; 2) issues related to the near-road NO<sub>2</sub> network design and its installation; and 3)

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the empirical data relied on in the rationale for the proposed rule, which commenters criticized as being of relatively limited duration and representation.

In regard to the assertion that the proposal is inconsistent with the original reasoning behind the establishment of the near-road network, the Environmental Groups and Clean Air Watch both cited rationale provided in the 2010 NO<sub>2</sub> NAAQS rulemaking that was used to establish the original requirements for the near-road NO<sub>2</sub> network. They stated that the reasoning behind needing the network as it was originally required has presently not changed. The Environmental Groups stated that "EPA's proposal to eliminate the requirement to install near-road monitors in areas below 1 million people is fundamentally inconsistent with EPA's prior conclusion, and with the facts EPA found to support it." The Clean Air Watch noted that after the 2010 NO<sub>2</sub> NAAQS revision the Administrator had highlighted that there would be many new roadside monitors going into place.

The EPA disagrees that the rationale for this action is inconsistent with the 2010 rule. Rather, the revision to the 2010 rule's near-road monitoring provisions is based on the EPA's evaluation of monitoring data generated after issuance of the 2010 rule. The EPA notes that the key objective of the 2010 revision to the NO<sub>2</sub> NAAQS was to limit exposure to peak NO<sub>2</sub>

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concentrations that occur anywhere in an area. In recognition of the fact that the majority of exposure risks were found to be tied to mobile sources and the lack of specific information concerning the concentrations of NO<sub>2</sub> in the near-road environment that was available at the time, the near-road NO<sub>2</sub> monitoring network was required to address this lack of characterization. In the 2009 NO<sub>2</sub> NAAQS proposal, the agency noted that the NO<sub>2</sub> monitoring network at that time was "...not oriented to address peak concentrations, such as the on-road and near-road environment..." (74 FR 34440). At the time of that proposal and the promulgation of the 2010 final rule, there was a limited amount of near-road monitored data, which consisted mostly of integrated and continuous concentration data from research studies as opposed to compliance-quality data suitable for comparison to the NAAQS. The agency used those limited data in conjunction with information collected and presented in the Integrated Science Assessment

(<https://www.regulations.gov/document?D=EPA-HQ-OAR-2006-0922-0048>) and the Risk and Exposure Assessment

(<https://www.regulations.gov/document?D=EPA-HQ-OAR-2006-0922-0047>) to finalize the network design that originally required at least one monitor in all CBSAs having populations of 500,000 persons or more. As was noted by several commenters on the May 2016 proposal for this rule, the final 2010 network design was

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described as a near-road network that would provide "...data from a geographically and spatially diverse set of CBSAs that supports the intent of the revised NAAQS..." (75 FR 6508).

Subsequent to the 2010 NO<sub>2</sub> NAAQS rulemaking, the EPA has received and evaluated data from near-road NO<sub>2</sub> monitors installed in response to the requirements of the rule. As of November 2016, there are 69 operating near-road NO<sub>2</sub> sites, with an ever increasing data record. Due to the establishment and operation of these near-road NO<sub>2</sub> monitors, the EPA and the public now have a significantly better understanding of what ambient, near-road concentrations look like across a geographically diverse set of urban areas of differing population sizes, including several CBSAs with populations under 1,000,000 persons, than we did in 2010. It is the evaluation of these new data, not a change in the EPA's view that the near-road network reflects areas of peak NO<sub>2</sub> concentration, which led to the EPA's conclusion that the requirement to operate additional near-road NO<sub>2</sub> sites required by Phase 3 of the network is no longer necessary to provide adequate characterization on a national basis. These new data, which were not available during the 2010 NO<sub>2</sub> NAAQS rulemaking provide the EPA with a different and improved understanding of near-road NO<sub>2</sub> concentrations compared to the time when the network was originally required. In particular, these new data show that NO<sub>2</sub> concentrations from sites adjacent to some of the



nation's highest trafficked roads in the most populated CBSAs (i.e., expected maximum concentrations sites in the near-road environment) are not exceeding or even threatening to approach the level of the NAAQS. It is, therefore, evident that the degree of geographic and spatial diversity required of the near-road network is less than originally thought. Accordingly, the agency believes it is appropriate to reconsider the necessity of Phase 3 of the near-road NO<sub>2</sub> network by leveraging empirical evidence and targeted assessments and analyses of available near-road NO<sub>2</sub> network information, as explained in more detail in the docket memo associated with this action.

The second issue raised by the Environmental Groups and Public Health Organizations was in regard to the network design and physical characteristics of the existing near-road NO<sub>2</sub> network. The Public Health Organizations stated that "limiting the required monitoring to only one or two locations in cities with millions of people severely limits the information available on near-road exposure in metropolitan areas." The Environmental Groups stated that "the information relied upon by EPA does not show that the near-road monitors installed to date have been located to detect maximum [NO<sub>2</sub>] levels." Finally, the Public Health Organizations also stated that "new research examining the early results of some of these near-road monitors warn that the assumptions made in the initial siting decisions

may not adequately reflect the worst sources of highway emissions, even in major urban areas like Los Angeles."

With regard to the Public Health Organizations' comment that the amount of near-road monitoring in a given urban area is limited, the EPA disagrees that additional monitors are needed. The network design targets expected maximum concentrations in the near-road environment. In the 2010 NO<sub>2</sub> NAAQS rulemaking, the near-road NO<sub>2</sub> network was required to be installed with consideration of six key factors: AADT, fleet mix, congestion patterns, roadway design, terrain, and meteorology. These factors varied by CBSA, where quantitative data was variable in availability and quality. The consideration of these six factors was required so that near-road monitors would be placed at locations in near-road environments where peak NO<sub>2</sub> concentrations, derived from on-road mobile sources, would be most likely to be observed within that CBSA. Because of this specific objective of the network, the need for multiple other near-road monitoring sites, above what is already required within a given CBSA to ascertain compliance with the NAAQS, is minimized.

The EPA strongly disagrees with the assertion that the near-road monitors installed to date have not been located to detect maximum NO<sub>2</sub> levels. The agency handled this issue through siting requirements in the CFR and through additional support

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via the production of the TAD. The TAD was created through collaboration amongst multiple offices across the agency, state and local air quality management agencies, the U.S. Department of Transportation, and several state departments of transportation. Further, the TAD was reviewed by the Clean Air Scientific Advisory Committee's Air Monitoring and Methods Subcommittee. The state and local air agencies' adherence to the siting requirements in the CFR and their use of the TAD is evidenced by meta-data presented and discussed in the proposal and the associated docket memo. As a result of the diligence of state and local air agencies, and the support and oversight of the agency, the near-road network meets all siting requirements and the selection of sites for the current near-road network was carried out with a high degree of success. For example, as was noted in the proposal, 55 percent of the near-road sites are adjacent to one of the top five highest trafficked road segments in their respective CBSA, 71 percent are adjacent to one of the top 10 most highly trafficked roads, and 91 percent are adjacent to one of the top 25 most highly trafficked roads. As there are thousands of road segments within each CBSA, this means that virtually all near-road monitors are adjacent to one of the most heavily trafficked roads within their respective CBSAs. And, as noted in the EPA's analysis of the existing near-road monitoring data, if the measure of traffic is adjusted for the fleet mix to

account for higher oxides of nitrogen (NO<sub>x</sub>) emissions from heavy-duty diesel vehicles, an even greater percentage of near-road monitors are adjacent to the road segments where NO<sub>2</sub> exposure is expected to be highest. Moreover, traffic volume was just one criterion out of a number of factors, plus logistical limitations, that all had bearing on site selection. These data, along with all the other data presented in the proposal and the docket memo, are indicative of a successful network deployment.

The EPA notes that in general, ambient monitor placement is a balancing act of knowing where an ideal monitoring location might be versus the reality of actually being able to place and operate a monitor in a particular location. This concept applies to all ambient monitoring endeavors, as the physical process of siting a monitor is subject to a myriad of logistical influences including, but not limited to: permissions for access; physical limitations on site placement including the immediate terrain, topography, or the roadway design of a target road in the specific case of near-road monitoring; safety considerations, which are particularly important and evident in near-road siting situations; and utilities availability. Considering the factors and influences involved in the near-road siting process and the known characteristics of the network, the EPA strongly asserts that the network is appropriately deployed and situated to provide measurements that are a good representation of maximum

near-road NO<sub>2</sub> concentrations that exist in a given CBSA, evidenced by meta-data presented and discussed in both the proposal and the docket memo.<sup>6</sup>

In response to the Public Health Organizations' statement that "new research examining the early results of some of these near-road monitors warn that the assumptions made in the initial siting decisions may not adequately reflect the worst sources of highway emissions, even in major urban areas like Los Angeles," the EPA would first like to point out that the research conducted for the referenced journal article did not utilize any data from the near-road NO<sub>2</sub> network, nor did it directly measure NO<sub>2</sub> during their on-road experiments. The data behind the referenced multi-pollutant research study were collected as part of an on-road mobile source emissions study primarily focused on improving understanding of the variability and influences on fleet-wide emissions via alternative methods of calculating emission factors. As such, the study does not indicate that information utilized in network siting decisions may not adequately reflect the worst sources of highway

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<sup>6</sup> In addition to the requirements for near-road monitors in state monitoring plans, the regulations also require the EPA Regional Administrators to identify locations for at least 40 additional NO<sub>2</sub> monitoring stations nationwide beyond the minimum monitoring requirements for each state, with the primary focus on siting these additional monitors in locations to protect susceptible and vulnerable populations. Moreover, even beyond that requirement, each Regional Administrator has the discretion to require additional monitors in any area. 40 CFR part 58, appendix D, section 4.3.4(a) and (b).

emissions. In fact, it does not even address near-road monitoring data from monitors installed to measure NO<sub>2</sub> levels. Instead, the EPA believes the study reinforces the fact that the required consideration of a number of previously mentioned factors including traffic volume and fleet mix, which were important to the cited literature, were appropriate and critical to the near-road site selection process.

The third issue raised was the claim that empirical data relied on in the proposal were too limited. To initiate their argument, the Environmental Groups stated that the "...EPA has virtually no emissions data for CBSAs with populations under 1 million, so EPA's claim that 'higher populated CBSAs,' i.e., CBSAs over 1 million people, will have 'higher mobile source emissions' is unfounded."

In response, the EPA notes that data presented and reviewed in the docket memo clearly show otherwise. The emissions data used in the docket memo analysis came from the 2011 National Emissions Inventory (NEI). The NEI mobile source data come from the EPA's Motor Vehicle Emissions Simulator (MOVES), which aggregates mobile source emissions data from the county level across the entire country. Therefore, the commenter's statement that the EPA has "virtually no emissions data" from CBSAs with populations less than 1 million persons, and their subsequent argument, is incorrect. Still regarding emissions data and

analysis, later in their arguments the Environmental Groups state that "...NOx emissions coming from on-road mobile sources in areas with 1 and 2.5 million persons is nearly the same in areas with 500,000 to 1 million people," suggesting that NOx emissions are nearly the same in the smaller populated CBSAs as they are in the larger ones, with a difference of only 3.2 percentage points. In the docket memo, the EPA presents NOx emissions inventory data, broken down by the categories of on-road mobile, non-road mobile, and all non-mobile source categories. These data are subsequently sorted into bins based on CBSA populations corresponding to the three phases by which the near-road network has been installed, plus a bin for all CBSAs with populations having less than 500,000 persons. The Environmental Group's comments are focused on the modest difference in percent contribution of on-road mobile sources to the total NOx emissions between the 500,000 to 1 million person CBSA bin (48.1 percent) and the larger CBSA bins (51.3 percent for CBSAs having between 1 million and 2.5 million persons and 55.3 percent for CBSAs having 2.5 million or more persons). However, the differences between these CBSA groups are significant when considering the actual amount of NOx in tons per year (tpy). The collective of CBSAs having 500,000 to 1 million persons have a NOx emissions profile where 48.1 percent of a total of 950,000 tpy are attributable to on-road mobile sources (i.e., 456,950

tpy). Meanwhile, the collective of CBSAs having 1 million to 2.5 million persons have a NO<sub>x</sub> emissions profile where 51.3 percent of 2,000,000 tpy are attributable to on-road mobile sources (i.e., 1,026,000 tpy) and the collective of CBSAs having 2.5 million persons or more have a NO<sub>x</sub> emissions profile where 55.3 percent of 7,500,000 tpy are attributable to on-road mobile sources (i.e., 4,147,500 tpy). It is clear by these data, and the analysis provided in the docket memo, that the larger CBSAs do in fact have much more on-road mobile source emissions than CBSAs with less than 1 million persons. Specifically, CBSAs with over 2.5 million persons have approximately 9 times more on-road mobile source NO<sub>x</sub> emissions in tpy than CBSAs with populations between 500,000 and 1 million, while the CBSAs with populations between 1 million and 2.5 million have 2.2 times more. These data support the conclusion that the larger populated CBSAs have greater potential for exposure due to marked increases in coincidence between emissions and population. See Docket Memo at pp. 9-11.

Concluding the Public Health Organizations' and Environmental Groups' arguments, they commented that the EPA relied on monitored near-road NO<sub>2</sub> data from too few sites, particularly from CBSAs with less than 1 million persons, to substantiate the proposed rulemaking. The Public Health Organizations stated that "...even if the preliminary data

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indicated compliance with the standards, the sparse number [of monitoring sites] leaves open many questions...." The Environmental Groups argued that only having near-road NO<sub>2</sub> data from two CBSAs with populations under 1 million persons (Boise, Idaho and Des Moines, Iowa), "...are not sufficient data from which to conclude that any kind of trend exists or to make any prediction about what one-hour NO<sub>2</sub> concentrations are likely to be reported in CBSAs with populations between 500,000 and 1 million; Boise and Des Moines alone are unlikely to be representative of all other CBSAs in this category." The Environmental Groups go on to discuss an analysis of the available near-road data and state that variability in the collected data, particularly for the 98<sup>th</sup> percentile 1-hour daily maximum values (1-hour values), makes "...it exceedingly hard to predict whether an individual CBSA in either group [of different CBSA population sizes] would be likely to report high or low near-road NO<sub>2</sub> concentrations based on its population alone," and ultimately that "...EPA's own data show that less-populated areas are not significantly less likely to have high near-road NO<sub>2</sub> concentrations (98<sup>th</sup> percentile one-hour daily max)."

Because Phases 1 and 2 of the network have nearly been fully deployed, there are sufficient data to analyze and to support a conclusion that the first two phases of the near-road monitoring network are sufficient to protect against risks

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associated with exposures to peak concentrations of NO<sub>2</sub>.

Regarding the length of the data record, we must consider the fact that the agency has multiple years of complete data that have already been used to judge compliance against the annual standard. Between 2013 and 2015, there were 69 annual design value data points across 39 different CBSAs (some with two near-road sites) available for analysis and comparison to the NAAQS. Further, regarding hourly data during the same (2013-2015) time period, there were a similar number of 98<sup>th</sup> percentile 1-hour daily maximum concentration values available for review. There were four sites in four separate CBSAs (Boise, ID; Des Moines, IA; Detroit, MI; and St. Louis, MO) with 3 years' worth of complete data that allowed the calculation of design values for the hourly standard. Although the remaining sites did not have enough data for the hourly design value calculation, the available data still provided evidence of what hourly near-road NO<sub>2</sub> concentrations look like across 1 or 2 years. All those data represent significant spatial representation nationally and across CBSAs of various population sizes, and were presented and discussed in the docket memo. (See Docket Memo, Figures 9, 10, and 11.) The data were ample enough to detect patterns and trends that provide an indication of whether or not near-road concentrations are threatening the NAAQS. Those indications, coupled with the understanding of NO<sub>x</sub> emissions and anticipated

future emissions profiles, provided a strong basis for the proposal. We disagree that there are insufficient data on which to base our conclusions regarding the sufficiency of the near-road network. Commenters assert that the EPA has "virtually no emissions data" for CBSAs with populations under 1 million, which may have been intended to mean that the EPA has virtually no near-road NO<sub>2</sub> air quality data for CBSAs with populations under 1 million. This is incorrect. As explained in the docket memo, EPA has complete data for a full year from two sites, one in Boise and one in Des Moines. The commenters did not provide any explanation to support their comment that there are not enough data.

Regarding specific comments on variability of some of the data, particularly in the hourly data across different near-road sites in different CBSAs across a range of population sizes, the EPA notes that such variability is to be expected in more highly time-resolved data. Further, as explained above, each near-road site is influenced by a number of factors, which all can contribute to inter-site variability. The Environmental Groups believe that the Boise and Des Moines CBSAs would not likely be representative of all other CBSAs of the same CBSA size class, without explanation. The EPA notes that no single CBSA is expected to be totally representative of any other individual

CBSA. However, as presented in the proposal and the docket memo, This document is a prepublication version, signed by EPA Administrator, Gina McCarthy on 12/22/2016. We have taken steps to ensure the accuracy of this version, but it is not the official version.

despite the expected variability, there are relationships within the data that are evident when analyzing emissions, traffic data, measured concentration data, and CBSA populations. Particularly, higher populated CBSAs correspondingly have more vehicles, which in turn increases the availability of mobile source derived emissions that lead to increased opportunity for higher NO<sub>2</sub> concentrations, particularly in the near-road environment. It is these relationships that lend to the concept that higher near-road NO<sub>2</sub> concentrations are expected in more heavily populated CBSAs as compared to those with lesser populations.<sup>7</sup>

It is also critical to conduct an analysis of the available near-road data. The analysis of all these data, which include data from the most heavily populated CBSAs and two CBSAs having populations between 500,000 and 1 million persons, reveals that there are no design values for either the annual or hourly NAAQS, or even a single 98<sup>th</sup> percentile 1-hour daily maximum value, that are approaching or exceeding the NAAQS. The highest recorded values throughout the 2013–2015 time period, analyzed

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<sup>7</sup> The commenters claim that the variability makes it difficult to predict NO<sub>2</sub> levels in a particular CBSA based on population alone, pointing to 2015 data showing one-hour concentrations in certain CBSAs with population between 1 million and 2.5 million that were higher than concentrations in some CBSAs with more than 2.5 million people. While NO<sub>2</sub> levels can vary from hour-to-hour, the EPA notes that the levels commenters refer to are all well below the level of the NO<sub>2</sub> NAAQS. (e.g., the 98<sup>th</sup> percentile level in Providence, RI, is 67.4 ppb, which is well below the one-hour NAAQS of 100 ppb). See Docket Memo, Figure 11.

and presented in the docket memo, were an annual average of 27 ppb in Los Angeles and an 98<sup>th</sup> percentile 1-hour value of 72 ppb from an incomplete year of data in New York City. In comparison, the NO<sub>2</sub> annual standard level is 53 ppb and the 98<sup>th</sup> percentile 1-hour daily maximum standard level averaged over 3 years is 100 ppb. The fact that no data collected to date have exceeded or are threatening to the NAAQS is paramount to the reasoning behind the approach to revise network requirements. There are no compelling concentration data or meta-data that indicate that the smaller CBSAs would be expected to have near-road NO<sub>2</sub> concentrations at or above those measured in more heavily populated CBSAs that have sites proximate to more heavily trafficked roads.

Further, the EPA expects a continuation in the reduction of on-road mobile source emissions on a per vehicle basis as a result of the implementation of mobile source standards such as the Tier 3 engine and fuel standards, which was echoed in the public comments. These continuing emission reductions should reduce the amount of measured NO<sub>2</sub> in the near-road environment, although other factors such as changes in traffic volume can impact those reductions.

Finally, the EPA notes that EPA Regional Administrators have the authority to work with state and local air monitoring agencies to require monitoring above the minimum requirements as

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needed to address a situation where near-road NO<sub>2</sub> concentrations are suspected to be approaching or exceeding the NAAQS. Accordingly, near-road monitoring could subsequently be required in smaller CBSAs should circumstances indicate the need to provide additional characterization beyond the monitoring provided by Phases 1 and 2 of the network. This Regional Administrator authority serves as an effective backstop against any unusual situation that could occur where monitoring might be warranted in an area that is not subject to minimum monitoring requirements.

Other comments received were outside the scope of this rule and not discussed in this preamble.

#### **IV. Conclusion and Final Action**

An analysis of available near-road NO<sub>2</sub> monitoring data indicates that air quality levels in the near-road environment are well below the NO<sub>2</sub> NAAQS. Based on the analysis of available concentration data, as well as related emissions, traffic, and network metadata, the EPA anticipates that measured near-road NO<sub>2</sub> concentrations in relatively smaller CBSAs (i.e., CBSAs with populations less than 1,000,000 persons) would exhibit similar, and more likely, lower concentrations, than what is being measured at existing near-road NO<sub>2</sub> sites in larger urban areas. In consideration of the data presented and reviewed in the proposal and the public comments received on the proposal, the

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EPA is finalizing, as proposed, the removal of monitoring requirements for near-road NO<sub>2</sub> monitors in CBSAs having populations between 500,000 and 1,000,000 persons, also known as Phase 3 of the near-road NO<sub>2</sub> network. The agency is also finalizing, as proposed, the removal of the requirement for a second near-road NO<sub>2</sub> monitor in any CBSA having 500,000 or more persons that also had one or more road segments with 250,000 or greater AADT counts. The revised requirement for a second near-road NO<sub>2</sub> monitor will only apply to CBSAs having 1,000,000 or more persons with a road segment of 250,000 or greater AADT counts.

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

### **A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review**

This action is not a significant regulatory action and was, therefore, not submitted to the Office of Management and Budget (OMB) for review.

### **B. Paperwork Reduction Act (PRA)**

This action does not impose an information collection burden under the PRA. The final revisions do not add any information collection requirements beyond those imposed by the existing NO<sub>2</sub> monitoring requirements.

### **C. Regulatory Flexibility Act (RFA)**

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I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action will remove a sub-set of the current air monitoring requirements and, therefore, relieve state and local air monitoring agencies from having to provide evidence of compliance with the NO<sub>2</sub> NAAQS in the near-road environment in CBSAs with less than 1,000,000 persons. We have, therefore, concluded that this action will relieve regulatory burden for all directly regulated small entities.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of \$100 million or more as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments or the private sector. This action will reduce the number of required near-road NO<sub>2</sub> monitors to be operated by state and local air monitoring agencies.

E. Executive Order 13132: Federalism

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This action does not have federalism implications. 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.

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

This action does not have tribal implications, as specified in Executive Order 13175. This final rule imposes no requirements on tribal governments. Thus, Executive Order 13175 does not apply to this action.

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

The EPA interprets EO 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order

12866.

I. National Technology Transfer and Advancement Act (NTTAA)

This action does not involve technical standards.

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

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations. The results of the network and data evaluation are contained in the Near-road NO<sub>2</sub> Network and Data Analysis docket memo, which provides a review and analysis of the characteristics of the existing near-road NO<sub>2</sub> monitoring network and the relationships between NO<sub>2</sub> emissions, population, traffic, and NO<sub>2</sub> concentration data. Further, this rule does not modify the existing requirements for near-road monitors required in CBSAs having 1,000,000 or more persons, area-wide NO<sub>2</sub> monitors, or monitoring of NO<sub>2</sub> in areas with susceptible and vulnerable populations.

K. Congressional Review Act (CRA)

This action is subject to the Congressional Review Act (CRA), and the EPA will submit a rule report to each House of Congress and to the Comptroller General of the United States.

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This action is not a "major rule" as defined by 5 U.S.C. 804(2).

**Revision to the Near-road NO<sub>2</sub> Minimum Monitoring Requirements**

**List of Subjects**

**40 CFR Part 58**

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

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Dated:

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Gina McCarthy,  
Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency is amending title 40, chapter I of the Code of Federal Regulations as follows:

**PART 58--AMBIENT AIR QUALITY SURVEILLANCE**

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

**Authority:** 42 U.S.C. 7403, 7405, 7410, 7414, 7601, 7611, 7614, and 7619.

2. Amend section 58.10 by revising paragraph (a)(5)(iv) and removing paragraph (a)(5)(v) to read as follows:

§58.10 *Annual monitoring network plan and periodic network assessment.*

\* \* \* \* \*

(a) \* \* \*

(5) \* \* \*

(iv) A plan for establishing a second near-road NO<sub>2</sub> monitor in any CBSA with a population of 2,500,000 persons or more, or a second monitor in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts, in accordance with the requirements of appendix D, section 4.3.2 to this part, shall be submitted as

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part of the Annual Monitoring Network Plan to the EPA Regional Administrator by July 1, 2014. The plan shall provide for these required monitors to be operational by January 1, 2015.

\* \* \* \* \*

3. Amend section 58.13 by revising paragraph (c)(4) and removing paragraph (c)(5) to read as follows:

§58.13 *Monitoring network completion.*

\* \* \* \* \*

(c) \* \* \*

(4) January 1, 2015, for a second near-road NO<sub>2</sub> monitor in CBSAs that have a population of 2,500,000 or more persons or a second monitor in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts that is required in appendix D, section 4.3.2.

\* \* \* \* \*

4. Appendix D to part 58 is amended by revising section 4.3.2 to read as follows:

#### **Appendix D to Part 58—Network Design Criteria for Ambient Air**

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## Quality Monitoring

\* \* \* \* \*

### 4.3.2 Requirement for Near-road NO<sub>2</sub> Monitors

(a) Within the NO<sub>2</sub> network, there must be one microscale near-road NO<sub>2</sub> monitoring station in each CBSA with a population of 1,000,000 or more persons to monitor a location of expected maximum hourly concentrations sited near a major road with high AADT counts as specified in paragraph 4.3.2(a)(1) of this appendix. An additional near-road NO<sub>2</sub> monitoring station is required for any CBSA with a population of 2,500,000 persons or more, or in any CBSA with a population of 1,000,000 or more persons that has one or more roadway segments with 250,000 or greater AADT counts to monitor a second location of expected maximum hourly concentrations. CBSA populations shall be based on the latest available census figures.

(1) The near-road NO<sub>2</sub> monitoring sites shall be selected by ranking all road segments within a CBSA by AADT and then identifying a location or locations adjacent to those highest ranked road segments, considering fleet mix, roadway design, congestion patterns, terrain, and meteorology, where maximum hourly NO<sub>2</sub> concentrations are expected to occur and siting criteria can be met in accordance with appendix E of this part.

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Where a state or local air monitoring agency identifies multiple acceptable candidate sites where maximum hourly NO<sub>2</sub> concentrations are expected to occur, the monitoring agency shall consider the potential for population exposure in the criteria utilized to select the final site location. Where one CBSA is required to have two near-road NO<sub>2</sub> monitoring stations, the sites shall be differentiated from each other by one or more of the following factors: fleet mix; congestion patterns; terrain; geographic area within the CBSA; or different route, interstate, or freeway designation.

(b) Measurements at required near-road NO<sub>2</sub> monitor sites utilizing chemiluminescence FRMs must include at a minimum: NO, NO<sub>2</sub>, and NO<sub>x</sub>.

\* \* \* \* \*