Responses to Significant Comments on the State and Tribal Designation Recommendations for the 2012 Annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS)

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List of Acronyms

APCD	Air Pollution Control District
AQS	Air Quality System
CAA	Clean Air Act
CBSA	Core Based Statistical Areas
CFR	Code of Federal Regulations
CSA	Combined Statistical Area
CSPAR	Cross-state Air Pollution Rule
DFW	Dallas-Fort Worth, Texas
EER	Exceptional Events Rule
EGU	Electric Generating Unit
EPA	Environmental Protection Agency
FR	Federal Register
GA EPD	Georgia Environmental Protection Division
HGB	Houston-Galveston-Brazoria, Texas
HYSPLIT	Hybrid Single Particle Lagrangian Integrated Trajectory Model
IEPA	Illinois Environmental Protection Agency
I/M	(Vehicle) Inspection and Maintenance
$\mu g/m^3$	Micrograms per cubic meter
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standard
NEI	National Emissions Inventory
NFR	Notice of Final Rulemaking
NLLJ	Nocturnal Low Level Jet
NOAA	National Oceanic and Atmospheric Administration
NOx	Oxides of Nitrogen
NSPS	New Source Performance Standards
NSR	New Source Review
OAQPS	EPA Office of Air Quality Planning and Standards
OMB	Office of Management and Budget
$PM_{2.5}$	Fine Particulate Matter
PSD	Prevention of Significant Deterioration
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RICE	Reciprocating Internal Combustion Engine
SC DEHC	South Carolina Department of Health and Environmental Control
SIP	State Implementation Plan
SLAMS	State and Local Air Monitoring Stations

TCEQ	Texas Commission on Environmental Quality
TPY	Tons per Year
TSD	Technical Support Document
TVA	Tennessee Valley Authority
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

1.0 Introduction

This document, together with the preamble to the final rule, and the Technical Support Documents (TSDs) for the designations, presents the EPA's responses to the significant comments we received on our proposed designations. The responses presented in this document are intended to augment the responses to comments that appear in the preamble to the final rule and the TSDs or to address comments not discussed in those documents. Commenters can find TSDs in the electronic docket for this action (www.regulations.gov, docket number the EPA-HQ-OAR-2012-0918) and at the EPA's PM Designations Web Page (http://www.epa.gov/pmdesignations/2012standards/index.htm).

2.0 Background

On December 14, 2012, the EPA promulgated a revised primary annual $PM_{2.5}$ NAAQS (78 FR 3086, January 15, 2013). In that action, the EPA revised the primary annual $PM_{2.5}$ standard, strengthening it from 15.0 micrograms per cubic meter ($\mu g/m^3$) to 12.0 $\mu g/m^3$; retained the existing 24-hour $PM_{2.5}$ standard at 35 $\mu g/m^3$; retained the existing 24-hour PM_{10} (coarse particle) standard at 150 $\mu g/m^3$; and retained the current suite of secondary PM standards. The EPA revised the primary annual $PM_{2.5}$ standard based on an integrated assessment of an extensive body of new scientific evidence, which substantially strengthens our body of knowledge regarding $PM_{2.5}$-related health effects. The revised primary annual $PM_{2.5}$ standard will provide increased protection for children, older adults, persons with pre-existing heart and lung disease, and other at-risk populations against an array of $PM_{2.5}$-related adverse health effects, including premature mortality, increased hospital admissions and emergency department visits, and development and exacerbation of chronic respiratory disease.

History shows us that better health and cleaner air go hand-in-hand with economic growth. Working closely with the states and tribes, the EPA is implementing the standard using a commonsense approach that improves air quality and minimizes the burden on state, local, and tribal governments. As part of this routine process, the EPA is working with the states and tribes to identify areas in the country that meet the standard and those that need to take steps to reduce $PM_{2.5}$ air pollution. Within 1 year of promulgating a new or revised air quality standard, the Clean Air Act requires the Governor of each state to submit to the EPA a list of all areas in the state, with a designation recommendation for each area. As a first step in implementing the 2012 annual $PM_{2.5}$ standard, Governors (and tribal leaders, if they chose) were to submit their designation recommendations, including appropriate area boundaries, by December 13, 2013.

On August 19, 2014, the EPA sent letters (the "120-day letters") to state and tribal representatives responding to their recommendations and identifying those areas anticipated to meet the 2012 annual $PM_{2.5}$ standards and those that do not. States, tribes, and the public had the opportunity to comment on the EPA's proposed decisions before the Agency issued final area designations, and to provide new information and analyses to the EPA, if appropriate. Following are summaries of significant comments received on the 2012 annual $PM_{2.5}$ designation recommendations and the EPA's responses to those comments.

3.0 Responses to Significant Comments on the State and Tribal Designation Recommendations for the 2012 annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS)

The following sections address the comments received by the EPA on the state and tribal $PM_{2.5}$ designation recommendations for the 2012 annual $PM_{2.5}$ NAAQS. Comment summaries and responses are presented below.

3.1 General Issues

3.1.1. Data Considerations

Comment: Several states, including Georgia, Indiana, Ohio, and Pennsylvania, believe that data for one or more of the areas violating the 2012 annual $PM_{2.5}$ NAAQS based on 2011-2013 air quality data may show attainment based on 2012-2014 air quality data. Because the EPA is promulgating initial area designations in December 2014, which is very close to the end of the 2014 data year, these states asked the EPA to consider 2012-2014 data in their designation decisions, or to defer the designations process until after 2014 data are complete and state and federal regulators have an opportunity to consider areas that may have come into attainment. One commenter noted that deferring designations to allow consideration of 2014 data would constitute a minimal delay in the designations process and would eliminate needlessly subjecting these areas to further nonattainment requirements and burdening the states and the federal government with developing plans, redesignation requests and maintenance plans for areas that allegedly do not necessitate these activities.

EPA Response: The EPA is basing initial area designation decisions for most areas for the 2012 annual $PM_{2.5}$ NAAQS on air quality monitoring data for the 2011-2013 time period because these data represent the most recent certified data available in August 2014 at the time the EPA notified states of any intended revisions to the states' and tribes' designation recommendations. However, because the EPA is making final designation decisions in December 2014, we believe it is appropriate to allow interested states and tribes to early certify their 2014 data ahead of the May 1, 2015 deadline specified in 40 CFR part 58.15(a)(2). States and tribes wishing to certify and submit their 2014 data for consideration in final designation decisions, should submit the certified 2014 data for all monitors in the desired area by February 27, 2015. The EPA established this deadline to ensure that we would have adequate time to evaluate the new technical information and complete the interactive process between the EPA and the states, as contemplated by the Act, as we determine the final area designations.

Comment: State commenters, including Alabama and Texas, note that through the regulatory provisions in 40 CFR Sections 50.13 and 50.18, the EPA establishes the requirements for operating state ambient air quality monitoring networks. The EPA then verifies through technical systems audits that air agencies are following these requirements. The EPA also uses these monitoring data to determine when the primary

and secondary $PM_{2.5}$ NAAQS are met. The commenters believe that unless these criteria are not met, areas with monitor values that meet the specified criteria should be designated attainment. The commenters believe a designation of "attainment" is further supported by the definitions in the Clean Air Act. CAA sections 107(d)(1)(A)(i), (ii) and (iii) (42 U.S.C. 7407) which provide definitions for "attainment," "nonattainment," and "unclassifiable," but do not include a definition for "unclassifiable/attainment." Commenters note that the EPA uses the category "unclassifiable/attainment" "without clear definition, criteria, or statutory basis" to designate those areas that are monitoring attainment and for areas that do not have monitors but for which the EPA has reason to believe are likely attainment and are not contributing to nearby violations. The state commenters recommend that areas monitoring attainment should be designated as attainment in December 2014.

EPA Response: In the April 16, 2013, guidance *Initial Area Designations for the 2012 Revised Primary Annual Fine Particle National Ambient Air Quality Standard,* the EPA said that states could submit recommendations identifying areas as "attainment," but that the EPA expected to continue to use the "unclassifiable/attainment" category for designations for the 2012 annual $PM_{2.5}$ NAAQS. (*See* footnote 2 at page 2). As we have done with past initial area designation efforts for other NAAQS, for these designations, the EPA is using a designation category of "unclassifiable/attainment" for areas that are monitoring attainment and for areas that do not have monitors but for which the EPA has reason to believe are likely attainment and are not contributing to nearby violations. The EPA is using "unclassifiable" for those areas where the EPA was not able to determine based on available information whether the area is meeting or not meeting the NAAQS, or where the EPA was not able to determine that the area contributes to a nearby violation.

Comment: One commenter expresses concern about the EPA's proposal to designate numerous areas as "unclassifiable" based on data quality and completeness issues. The commenter notes that because the EPA has historically treated unclassifiable areas as though they meet the standard and are not subject to the stronger protections required for nonattainment areas, the EPA is effectively denying millions of people the protection they deserve under the standard. The commenter adds that under previous designations efforts, the EPA has taken the position that once it has designated an area as unclassifiable, the Agency had no obligation to redesignate the area, even if adequate data showing nonattainment become available. The commenter adds that following this course of action encourages states to "follow sloppy or deficient data collection and analyses" because it results in the "reward" of avoiding a nonattainment designation.

The commenter recommends that the EPA pursue the following:

- For historically nonattaining areas (i.e., Chicago, St. Louis, Atlanta, and Knoxville) with invalid or incomplete 2011-2013 data, use the most recent prior years for which adequate, quality-controlled data show violation of the 2012 annual $PM_{2.5}$ NAAQS unless the EPA provides evidence showing that air quality has improved and no longer violates the standard (treating such areas as anything other than nonattainment is arbitrary and unlawful).

- Alternatively, extend the time for promulgating final designations by the additional year provided under 42 U.S.C. §7407(d)(1)(B)(i) for the portions of the eight states/territories for which the EPA is proposing unclassifiable designations based on data quality/completeness issues (Puerto Rico; U.S. Virgin Islands; Atlanta, Glynn County and Dougherty County, Georgia; Tennessee (except Chattanooga); Illinois; St. Louis, Missouri; and areas of Indian Country, CA). Commenter notes that the EPA has proposed to provide such an additional year for designations in Georgia, and there is no reason to take a different approach as to the other areas with data adequacy and quality issues.
- As was done with the recent 1-hour sulfur dioxide standard, develop a plan to designate areas with insufficient monitoring data based on modeling or additional monitoring.
- The EPA must also put in place steps to work with the states and tribes to review the available data and to expeditiously update the laboratory systems to restore the quality controls needed for the data measurement.

EPA Response: The EPA appreciates the commenter's concerns and acknowledges that the extent of incomplete/invalid data associated with the initial area designations for the 2012 annual $PM_{2.5}$ NAAQS is unprecedented. The EPA also agrees with the commenter that it makes sense to extend the time for promulgating designations using the authority provided under section 107(d)(1)(B) of the CAA. As such, the EPA is deferring initial area designations for ten areas where currently available data, including air quality monitoring data, are insufficient to determine whether the areas are meeting or are not meeting the NAAQS. For these areas (i.e., Atlanta, GA; Albany, GA; Augusta, GA-SC; Brunswick, GA; Columbus, GA-AL; Savannah, GA; Valdosta, GA; Washington Co, GA; the entire state of Florida; and the entire state of Tennessee, excluding three counties in the Chattanooga area), the EPA believes that additional air quality monitoring data will result in complete and valid data sufficient to inform a designation determination.

In this action, the EPA is finalizing a designation of unclassifiable for those remaining areas identified as "unclassifiable" in the 120-day letters (i.e. Puerto Rico; US Virgin Islands; and the entire state of Illinois, including two counties in Indiana as part of the Chicago area and four counties and one city in Missouri as part of the St. Louis area) because these areas have ambient air quality monitoring sites that lack complete data for the period 2011-2013. After reviewing the ambient air quality monitoring data for these areas for 2012, 2013 and 2014, the EPA believes that near-term data will continue to be insufficient to determine valid design values and, therefore, that deferring designations would not be helpful. Additionally, a review of data prior to 2013 indicates similar data quality and/or completeness issues such that the EPA lacks the confidence in historical data needed to support a designation based on recent prior years. The EPA is working closely with the appropriate air agencies to ensure that complete, quality-assured data are gathered moving forward and will continue to conduct technical systems audits of each ambient air monitoring organization every 3 years as required under 40 CFR part 50, Appendix A. The EPA will evaluate complete and valid data for "unclassifiable" areas when they become available.

3.1.2. Requests to Extend the Public Comment Period

Comment: Two commenters requested that the EPA extend the deadline for the public comment period beyond September 29, 2014, to allow interested parties additional time to review docket materials and provide substantive comments.

EPA Response: In its August 29 Federal Register notice (79 FR 51517) announcing the availability of the EPA's responses to state and tribal designation recommendations for the 2012 annual $PM_{2.5}$ NAAQS, the EPA invited public comment through September 29, 2014. In the "120-day" letters, the EPA asked states and tribes to provide any additional comments by October 29, 2014. The EPA established these staggered deadlines to allow the states and tribes to address any public comments and to allow the EPA to review and respond to all significant public, state, and tribal comments in advance of promulgating the initial area designations in December 2014 according to our statutory designations deadlines. For these reasons we were unable to extend the comment period.

3.1.3. Other General Comments

Comment: One commenter noted that the regulatory burden associated with the EPA's process of designating nonattainment areas will negatively affect areas by causing economic harm.

EPA Response: Section 107(d)(1) of the CAA directs the EPA to designate an area "nonattainment" if it is violating the NAAQS or if it is contributing to a violation of the NAAQS in a nearby area. The first step in designating nonattainment areas is to identify air quality monitoring sites with 2011-2013 data that show a violation of the 2012 annual $PM_{2.5}$ NAAQS. To determine whether a nearby area is contributing to a violation, the EPA recommended that states conduct a technical analysis based on a number of factors listed in the designation guidance for the 2012 annual $PM_{2.5}$ NAAQS, including air quality, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. In evaluating whether to modify a state's designation recommendation, the EPA also considered those factors as documented in the EPA's technical support document for the identified nonattainment area. In determining whether an area should be designated nonattainment under section 107(d), the EPA did not consider economic impacts because they are not relevant for determining whether an area is violating the NAAQS or is contributing to a nearby violation.

Control obligations in areas designated nonattainment for the 2012 annual $PM_{2.5}$ NAAQS will be addressed through a separate implementation rulemaking. As the EPA considers the required components of implementation plans for the 2012 annual $PM_{2.5}$ NAAQS, the Agency intends to provide states flexibility and opportunities to maximize efficiency to the extent such approaches are consistent with the CAA and will not jeopardize expeditious attainment of the public health and welfare goals of the CAA. In addition, the EPA is exploring ways that it can provide assistance to the states on this issue. Finally, to the extent the CAA does not mandate specific control measures, states may consider economic concerns in development of their state implementation plans to address air quality.

3.2 Area-Specific Issues

3.2.1. EPA Region III

Comment: Pennsylvania Department of Environmental Protection (PADEP) and Allegheny County Health Department (ACHD) urged the EPA to reconsider its intended boundary from that of Allegheny County to the historical five borough Liberty-Clairton boundary that has served as the boundary for this area in the past $PM_{2.5}$ designations, given that the only violating monitor is the same monitor the EPA relied upon for its past designations under the annual and 24-hr $PM_{2.5}$ NAAQS designations. All other monitors located in the County are not only currently attaining the standard, but demonstrating a historical downward trend that provides confidence in continuing attainment of the standard.

Commenters stated that it is inappropriate for the EPA to expand its nonattainment boundary for the Liberty-Clairton area to include the entirety of Allegheny County and that the historical boundary for Liberty-Clairton is appropriate given that the only violating monitor is located within the historical boundary.

The commenters noted that the Liberty monitor is located in an area that has historically demonstrated a very significant localized industrial impact that requires separate planning approach that the EPA has recognized in past designation processes. However, commenters claimed that in the initial TSD for Allegheny County, the EPA ignored precedent and attempted to link sources in other parts of the County including the urbanized area of the City of Pittsburgh to a violating monitor that is subject to a unique mix of meteorology topography and localized emissions. The Commenters argued that the EPA's justification for the entire County is confusing, because in several instances the EPA cited the "dominant" influence of local emissions on the Liberty monitor.

EPA Response: Section 107(d)(1) requires the EPA to designate as nonattainment not only any area that violates the NAAQS, but also any area that contributes to ambient air quality in a nearby area violating the NAAQS. The EPA has therefore always based its nonattainment decisions upon a full comprehensive factor-based analysis, taking into consideration all aspects that drive violations of the standard both in areas violating the NAAQS and also in nearby areas contributing to areas violating the NAAQS. However, the EPA must also evaluate contribution from all nearby areas portion of the area of in the analysis.

Our current Allegheny County boundary decision for the 2012 $PM_{2.5}$ NAAQS is based on only a single violating monitor -- the Liberty monitor which also formed the basis for past Liberty-Clairton PM nonattainment areas. Though there is only one violating monitor in the larger Pittsburgh CBSA, all nearby emissions sources in the area must be a evaluated for potential contribution to the violating monitor. Based on the EPA's five factor analysis and additional analysis performed in response to the commenters'

analysis, sources within Allegheny County outside the local Liberty-Clairton area are contributing to the violating Liberty monitor.

The EPA reviewed the commenters' supplemental information and analysis, and agrees with the commenters, to some degree, with their technical analysis as it relates to conditions affecting the violating Liberty monitor, particularly in light of its proximity to an industrial source that contributes significantly to the violation, and in light of topographical and meteorological conditions present at the monitor site. These conditions and the EPA's additional analysis of the commenters' information provided and further explained in responses throughout this section and in the TSD.

Although the EPA agrees to some extent with the commenters' supplemental analysis with respect to the significant contributor to the violation, the commenters' analysis focuses on a significant contribution and does not address or disprove potential contribution to the violation from nearby sources in the remainder of the county (e.g., mobile, area, and point emission sources). The commenter primarily notes that the localized Liberty-Clairton area is a "significant contributor" to the violating monitor; however, the statute is clear in providing for inclusion in nonattainment areas of areas that "contribute" to the violations. The EPA interprets the term "contributes" to mean contributes sufficiently to justify inclusion in the nonattainment area, and the EPA's multifactor test with the various analytical tools is intended to assure an objective evaluation of the appropriate facts on a case by case basis in each area. The EPA has considered multiple factors of analysis, and has applied the same analysis to all counties considered in the area of analysis as outlined in the TSD. The EPA's decision is not contingent on only one part of the analysis, but the analysis as a whole especially given that PM is a complex pollutant with contribution from multiple source categories as well as multiple pollutants. Hence, the EPA's use of the weight of evidence approach evaluating the facts and circumstances in each area on a case by case basis, and was done consistently with decision principles to assure comparable treatment in all the designations.

As demonstrated by the five factor analysis in the TSD for the Allegheny County area and supplemental analyses performed in light of the commenters' additional information, the EPA has determined that though there is significant contribution from the local sources to the violating monitor, there is also contribution from sources within the remainder of Allegheny County impacting the violating monitor.

The commenters' focus on data from the violating Liberty monitor furthermore does not assess what is happening on all days versus high days for the annual $PM_{2.5}$ NAAQS. To further assess this potential for broader contribution, the EPA conducted its own additional analysis of monitor concentrations and wind directions for all days in a period between 2011 and 2013. This analysis, further explained in the TSD, shows that under certain conditions on a large number days that there is some degree of contribution from sources in the surrounding Allegheny County area to the violating Liberty monitor.

Comment: PADEP and ACHD are concerned that inclusion of the entirety of Allegheny County in the nonattainment area would subject all sources therein to Reasonable Further Progress (RFP) requirements, increasing the baseline for RFP and resulting in a greater emission reduction required to meet RFP. Commenters assert that there are limited remaining emission controls available in the remainder of the County, and that ACHD has limited control over emissions from transportation sources in the county.

The commenters state that designation of the entire county as nonattainment for the 2012 $PM_{2.5}$ NAAQS would result in three different nonattainment boundary areas in the same County (1997/2006 $PM_{2.5}$, 2012 SO2, and 2012 $PM_{2.5}$ NAAQS). The commenters allege this is not consistent with the EPA's recent SIP improvement outreach efforts and would place a considerable burden on resources for the ACHD. It is also important to note that the significant stationary sources in other areas of the County besides the Liberty-Clairton area will be subject to any controls that are required to meet the 2012 SO_2 NAAQS.

EPA Response: The EPA notes its willingness and capability to work closely with state partners in their development of attainment plans. The EPA also acknowledges the commenters' concern regarding attainment planning, however the statutory basis for area designations is not one of whether sources are controlled or controlled adequately at the time of designations. The issue is also not whether sources can or should be controlled for purposes of implementing the NAAQS. That question is something that is evaluated in the context of the attainment plan that the state will develop once an area is designated as nonattainment. Whether sources in an area are already adequately controlled for a prior $PM_{2.5}$ NAAQS because of existing attainment plan SIP measures for that NAAQS is also not a singular deciding factor in determining designations for a new NAAQS because the emissions from sources (controlled or uncontrolled) may still be contributing to a violation of the more stringent 2012 $PM_{2.5}$ NAAQS. With respect to the commenters' contention regarding expanded RFP requirements as a result of a broader nonattainment boundary, each NAAQS must be evaluated on the basis of violations of that standard, current ambient air quality, and the contribution to the violation from within the established nonattainment boundaries., Designations determinations are therefore irrespective of RFP consequences which are statutorily addressed in separate, subsequent attainment planning.

With respect to the selection of jurisdictional boundaries for the area, each NAAQS must be evaluated independently of the other. The EPA does consider the historical jurisdictional boundaries in our intended designations while we attempt to align boundaries and overlap jurisdictional control when determining boundaries for a new NAAQS. Boundaries however may vary for different NAAQS based on the source contribution and location of violations specific to each NAAQS. The EPA has given consideration to jurisdiction issues in the Allegheny County designation, but based on its analysis of the potential for sources in the area to contribute to the violating monitor, the EPA has determined the Allegheny County designation is appropriate though it may differ from the historical jurisdictional boundaries for this area. The EPA acknowledges and appreciates that $PM_{2.5}$ planning for this area is under ACHD and PADEP's jurisdiction, and that both agencies have a long history of cooperation for planning in the Allegheny County area.

Comment: PADEP and ACHD assert that the EPA dismissed the influence of industrial (stack) emissions from Washington County including two nearby power plants due to complex terrain, but ignored the same complex terrain in an attempt to link ground level, urban emissions from the City of Pittsburgh from a greater distance as a contributor to the Liberty monitor. Commenters further allege this is also despite the fact that the Liberty monitor only violates the standard when the prevailing wind is from the South or Southwest and not from the Northwest which is the direction of the City of Pittsburgh.

Commenters also argue that there is a monitor located only 3.5 miles from the Liberty monitor in Clairton that consistently reads 3 to 4 $\mu g/m^3$ lower than Liberty (among the lowest readings in the County) which does not demonstrate urban influence on the area. Commenters argue that the EPA is inconsistent in its reasoning for Pittsburgh's influence on the Liberty monitor while ignoring the gradient between the nearby, upwind Clairton monitor, which reinforces the well understood localized emission impact of the local source on the Liberty monitor.

EPA Response: As explained in the TSD, the EPA has analyzed contribution from the entire CBSA for this area. The EPA's decisions for inclusion of Allegheny County and not Washington County are set forth in the TSD, and have not changed based on supplemental analysis submitted by commenters in response to the intended designations. Emissions in Washington County are relatively low, less than a quarter of Allegheny County's emissions. Washington County also has relatively low population, population density, and VMT. Furthermore, POM and EC, the largest components of the urban increment at the violating monitor, are low in Washington County. As explained in the TSD, the two point sources with emissions of greater than 500 tpy in Washington County have very low direct $PM_{2.5}$ and VOC emissions, which indicates that any potential contribution to the POM and EC in the urban increment at the Liberty monitor is relatively low.

The surrounding Allegheny County area is the largest source of relevant emissions in the area of analysis, and other factors such as meteorology and topography as further explained in the TSD justify inclusion of Allegheny County in the nonattainment area. In response to PADEP's and ACHD's supplemental analysis, the EPA conducted additional analysis to evaluate contribution from Allegheny County to the Liberty monitor. This additional analysis shows that based on a review of all days, as is appropriate for an annual NAAQS, rather than only high concentration days, there is contribution on some days and wind conditions from the surrounding Allegheny County area on the violating monitor.

With respect to the commenters' contention regarding concentration gradients between the nearby Clairton and Liberty monitors, the EPA agrees that this shows evidence of significant local contribution. However, as explained in detail in a previous response, the statute is clear in providing for inclusion in nonattainment areas of areas that "contribute" to the violations. A high or low monitored concentration at an attaining monitor does not by necessity preclude contribution from the surrounding area of analysis. This contribution is measured through a consideration of all available information, through a

five-factor analysis. The overwhelming local contribution from Liberty-Clairton sources does not preclude possible contribution from surrounding areas, and as further explained in the TSD, the five factor analysis indicates contribution from the remainder of Allegheny County outside the local Liberty-Clairton area.

Comment: In response to the EPA's August 19, 2014 120-day letter, PADEP and ACHD submitted information on historic trends for monitored annual means and design values for monitors in Allegheny County. The commenters contend that the information shows that the Liberty monitor is unique compared to all other monitors in Allegheny County, exhibiting both higher $PM_{2.5}$ quarterly means and design values and poor correlation to all other county monitors, indicating local impact on this monitor by the nearby Clairton Coke Works. Commenters argue that the Liberty monitor is unique from other Allegheny County monitors due to this downwind proximity to the source, as well as microclimatological and topographical impacts related to the monitor's location on a bluff over the river valley and the source.

EPA Response: The EPA acknowledges the commenters assertion that the provided annual means and annual design value graphs for the Allegheny County monitors show that the Liberty monitor is higher than the other monitors in the county and follows a similar downward trend as the other monitor. This supports the EPA's quarterly means analysis and conclusion that the Liberty monitor is influenced by the same seasonal patterns as the rest of the area but an additional local component is causing the exceedance in $PM_{2.5}$ concentrations. However, section 107(d) of the CAA directs the EPA to designate an area nonattainment if it is violating the NAAQS, *or* if it is **contributing** to a violation of the NAAQS in a nearby area. Though the EPA agrees with the commenters that a local component is causing the exceedance of the NAAQS, the commenters do not disprove that emissions from Allegheny County are not contributing to the exceedance. As explained throughout the TSD, the EPA's five factor analysis demonstrates contribution from Allegheny County to the violating Liberty monitor. The EPA acknowledges the topography and temperature inversions in the Liberty-Clairton area also probably cause local emissions to be trapped in this area and drive the violation of the NAAQS at this monitor. However, the statue compels the EPA to consider contribution to a violation of the NAAQS and not necessarily causation. In an attempt to better understand the meteorological impacts at the Liberty monitor, the EPA performed additional analysis of conditions at this site (see PA TSD pages 111 – 115). The EPA's analysis also shows that under certain conditions on a large number days there is some degree of contribution from sources in the surrounding Allegheny County area to the violating Liberty monitor, therefore the topography and inversions do not preclude transport of emissions from outside this small area and that emissions from Allegheny County are capable of bypassing these features to impact the violating monitor.

Comment: As part of their supplemental analysis submitted in response to the EPA's August 19, 2014 120-day letter, PADEP and ACHD examined speciation data for select tri-state monitoring sites (both inside and outside the area of analysis) for the period between 2011-2013, in an attempt to characterize $PM_{2.5}$ contribution at the violating

Liberty monitor. Commenters used a number of area monitors to assign allegedly incremental contribution from various parts of the area of analysis as regional background, the surrounding Pittsburgh MSA, the Pittsburgh urban area, and local sources within the Liberty-Clairton area.

The commenters assert that the results of that analysis show that the Liberty monitor sees higher levels of elemental carbon and chlorine than other area monitors while other species, including sulfates and organic carbon, are more normalized in comparison of Liberty monitor levels to those seen at other tri-state monitors. Commenters assert that the allegedly incremental contribution analysis indicates that the surrounding MSA monitors show a large increment of organic carbonaceous material, indicative of a large, widespread contribution of area, mobile and point source emissions and that the rural background sites show large contributions of sulfate, nitrates and a portion of organic carbonaceous material, indicative of widespread regional transport. Commenters also assert that the Pittsburgh urban area contributes only an incrementally small portion of the total from the tri-state area to the Liberty monitor, and that the excess contribution generated nearby to the Liberty monitor contains high levels of carbon, sulfates and elemental carbon $PM_{2.5}$ components, which can be attributed to the nearby industrial sources, such as the Clairton Coke Works source.

EPA Response: The EPA's approach to designations is to evaluate the entire CBSA and not differentiate between the MSA and the urban area within the CBSA. In addition, the EPA notes that the entire CBSA is appropriate for evaluating whether sources in this area are contributing to a violation within the County or within a nearby area.

The EPA's SANDWICH speciation data supports the commenters' assertions with respect to some unique speciation results at the Liberty monitor in comparison to other area monitors. The EPA agrees that the commenters' analysis of component speciation at the Liberty monitor compared to other area monitors shows heavy local industrial contribution of elemental carbon and chlorine components not seen at other monitors, as well as similar presence of components likely representing regional background (e.g., ammonium sulfates and ammonium nitrates). However, the analysis done by PADEP and ACHD does not account for high organic carbon and sulfate components at Liberty in comparison to these other area monitors which likely result from contribution to the Liberty monitor from sources outside the Liberty-Clairton local area and within Allegheny County. There are other mobile, area and point sources in Allegheny County with organic carbon and sulfate emissions that have the potential to contribute to the Liberty monitor.

The commenters' area contribution analysis appears to show some increment from within the Pittsburgh urban area to the violating Liberty monitor, indicating the existence of contribution to the violation from within Allegheny County. The commenters describe this contribution as an "incrementally small portion of the total," but the EPA through its five factor analysis has determined that there is contribution from the Allegheny County area to the Liberty monitor sufficient to justify inclusion of the entire county in the nonattainment area, and the commenters have not rebutted this determination.

After review of the commenters' supplemental analysis to the EPA's intended designation, while there is clearly contribution from local sources in the Liberty-Clairton area, it still appears from the evidence provided that there is some degree of contribution to the violation at the Liberty monitor from emission sources in Allegheny County based upon speciation data, emissions data, meteorology, and other factors as described in this TSD.

Comment: In response to the EPA's August 19, 2014 120 day letter, PADEP and ACHD provided updated 2013 emissions for sources generating over 500 tons per year in Allegheny County. Seven of the nine of these sources have decreased particulate matter and PM precursor emissions from 2011 to 2013, while emissions across the entire county were reduced emissions by 26.3%. Conversely, the Clairton Coke Works (e.g., the nearest major emissions source to the violating Liberty monitor) increased its emissions between 2011 and 2013, as a result of ongoing issues with some of its newer emissions controls. The nearby U.S. Steel Irvin Plant (2 miles from the Liberty monitor) also increased emissions, to a lesser degree, over that same period. Further, five coal-fired power plants inside the EPA's area of analysis, but outside Allegheny County (two in Washington County, one in Greene County, and one in Preston County, WV) have deactivated since 2011.

EPA Response: The EPA agrees with PADEP and ACHD that the most recent updated emissions data for sources in Allegheny County indicates that major point source facility emissions in Allegheny County have decreased, in their totality (except for the Clairton Coke Works and U.S. Steel Irvin facilities). However, while their impact on total emissions for Allegheny County are less in relation to total county emissions, these major facility revised emissions likely have some impact on the violating monitor

Comment: PADEP and ACHD also provided Modeled Attainment Test Software (MATS) unmonitored area $PM_{2.5}$ impacts from a baseline year of 2007 to a projected 2014 (performed for the 2006 24-hour $PM_{2.5}$ NAAQS SIP) to support their position. Commenters assert that the modeling results show distinct border for the extent of urban impacts in the Pittsburgh area compared to Liberty-Clairton impacts. To further demonstrate the allegedly unique emissions and the source of these emissions at the Liberty monitor, PADEP and ACHD submitted updated PMF source modeling. The commenters assert the Liberty monitor shows a large carbon-rich industrial source which is not present at other sites, and that the Liberty monitor also shows little motor vehicle emissions and that motor vehicle emissions from the Pittsburgh area are not transporting to the Liberty monitor.

EPA Response: The EPA notes it does not rely on modeling forecasts when making decisions regarding NAAQS designations, as designations are based upon recent ambient air quality data and not future projections of air quality. The MATS modeling provided by PADEP and ACHD for 2007 and 2014 does support the commenters' contention that ambient $PM_{2.5}$ is concentrated in two separate plumes – one centered over the urban core of Pittsburgh and another separate plume over Liberty-Clairton area. However, the MATS modeling does not actually prove that there is no contribution from the remainder of Allegheny County to the Liberty monitor – instead it shows only that the largest sources of contribution at Liberty is from the local source. For reasons explained throughout the TSD, the five factor analysis demonstrates there is contribution from the remainder of Allegheny County to the violating monitor.

The EPA acknowledges that a carbon-rich industrial source contributes to the Liberty monitor as shown in the PMF common source model analysis. The commenters' provided PMF common source factor modeling analysis also demonstrates that the Liberty monitor detects source types similar to other area monitors for $PM_{2.5}$ components typically associated with regional background (e.g., sulfates, nitrates and crustal). However, the PMF source factors for the Liberty monitor also show the appearance of $PM_{2.5}$ components from motor vehicle and burning/cooking sources at levels similar to other area monitors. Given the lower population and vehicle-related activity in the vicinity of the Liberty monitor in comparison to other area monitors, the presence of motor vehicle and burning/cooking sources at levels similar to other area monitors does not disprove and actually could indicate contribution from outside the Liberty-Clairton area from at least those two source types. While the PMF modeling clearly shows a contribution from a local industrial sources, it does not rule out contribution from other sources in the County, particularly burning and motor vehicle sources.

Comment: PADEP and ACHD provided additional Allegheny County population information in response to the EPA's 120 day letter, focusing on population spatial allocation and population density. The agencies assert population in the metropolitan area is further removed from the violating monitor than is indicated by countywide data, and that the populations in the Liberty-Clairton area have been in decline by 13.4% for the period between 2000 and 2010. Commenters assert that this newly provided population data show that the majority of urban population-based area source and mobile source emissions created in the urban Pittsburgh portion of Allegheny County do not contribute significantly to violation at the Liberty monitor.

EPA Response: While the commenters updated population data shows a more recent decline for the Liberty-Clairton area and that mobile emissions in this area contribute to a much lesser degree than local industrial sources, this does not eliminate the potential for emissions contribution to the violating Liberty monitor from the much larger source of population-based emissions from the more populous and heavily trafficked remainder of Allegheny County. Allegheny County has by far the largest population and population density, and vehicle miles travelled, relative to all other areas within the area of analysis for the violating Liberty monitor. As previously discussed, the statute is clear in providing for inclusion in nonattainment areas of areas that "contribute" to the violations.

The EPA interprets the term "contributes" to mean contributes sufficiently to justify inclusion in the nonattainment area. As demonstrated by the five factor analysis in the TSD for the Allegheny County area and supplemental analyses performed in light of the commenters' additional information, the EPA has determined that though there is significant contribution from the local sources to the violating monitor, there is also contribution from sources within the remainder of Allegheny County impacting the violating monitor justifying inclusion of the entire county in the nonattainment area.

Comment: PADEP and ACHD provided additional meteorology data in response to the EPA's 120 day letter. Commenters provided updated wind rose and temperature inversion information at the Liberty monitor site as well as several HYSPLIT trajectories for the area. Commenters assert that the EPA's TSD only looked at airport data and did not evaluate local meteorological site at the Liberty Borough site. Commenters emphasize that the newly provided 2009-2013 wind rose at the Liberty Borough site demonstrates a preponderance of winds from the south through west with a dominant southwest component, further supporting their contention that the Liberty monitor is largely influenced by the Clairton Coke Works facility. PADEP and ACHD argue that the EPA did not address stagnation conditions at the Liberty monitor from frequent local inversion conditions that trap PM2.5 emissions at the monitor. The commenters provided inversion statistics for 2009-2013 to support this position that shows 40% of the days when data is available are impacted by inversions.

EPA Response: The EPA agrees with the commenters that the regional wind direction closest to the Liberty monitor is from the south and the west with southwesterly components, however, there is still contribution from other sources as winds come from other directions. As discussed in the TSD, the wind rose closest to the Liberty monitor shows strong southerly and westerly components, with southwesterly and northwesterly components. The northwesterly component indicates that the highly urbanized Pittsburgh area is upwind of, and therefore contributing to, the Liberty monitor. Further, as discussed in previous responses, the EPA's additional analysis (see PA TSD pages 111 – 115) also shows that under certain conditions on a large number days there is some degree of contribution from sources in the surrounding Allegheny County area to the violating Liberty monitor. In addition, meteorological data from the Liberty Borough monitor is not regularly uploaded or quality assured by the EPA. Airport meteorological data has a higher level of quality assurance and the EPA must rely on highest quality available data when determining nonattainment boundaries.

As explained in previous responses as well as in the TSD, the EPA acknowledges the low level, diurnal inversions in the Liberty-Clairton area also probably cause local emissions to be trapped in this area and drive the violation of the NAAQS at this monitor. However, the statue compels the EPA to consider contribution to a violation of the NAAQS and not necessarily causation. The EPA's analysis (see PA TSD pages 111 – 115) also shows that under certain conditions on a large number days there is some degree of contribution from sources in the surrounding Allegheny County area to the violating Liberty monitor, therefore the topography and inversions do not preclude

transport of emissions from outside this small area and that emissions from Allegheny County are capable of bypassing these features to impact the violating monitor.

Comment: A letter from the Allegheny Conference on Community Development to Dana Aunkst, Acting Secretary, at PADEP was submitted by PADEP. Allegheny Conference states that the EPA has inexplicably reversed its position recognizing the unique meteorology, topography and localized emissions in the Liberty monitoring area without justification. The commenter asserts that the EPA's intended designation of all of Allegheny County is not supported by evidence. Allegheny Conference believes designating the entire county of Allegheny County as nonattainment would place unwarranted requirements on areas that do meet the 2012 $PM_{2.5}$ NAAQS standard and urges the EPA to keep the nonattainment area to the current Liberty-Clairton boundaries.

EPA Response: The EPA disagrees with the commenter's contention that we have inexplicably reversed our historic position regarding the allegedly unique conditions affecting the Liberty monitor. Based on the evidence and its analysis regarding meteorology, topography, and other factors as explained in the TSD, the EPA has determined that sources within all of Allegheny County are contributing to the violating Liberty monitor and therefore justify inclusion of the entire county in the nonattainment area. Therefore, the requirements that result from this designation are warranted based upon the EPA's determination that sources from within the entire Allegheny County contribute to the violating monitor.

Comment: The Pennsylvania Department of Environmental Protection (PADEP) disagrees with the EPA's intended two-county Allentown nonattainment area (Northampton and Lehigh Counties), instead arguing that the boundary should be limited to the county with the violating monitor (Northampton County) -- per PADEP's July 2014 updated recommendation. PADEP maintains that the violation at the Freemansburg monitor in Northampton County (Northampton County violating monitor) was caused by a fine particulate problem of an "extreme local nature" that was impacted by construction associated with the redevelopment of nearly 1,800 acres of the former Bethlehem Steel Corp site located 1.5 miles south of the Freemansburg monitor. PADEP conducted an additional analysis of available data and submitted supporting information to support its case on October 28, 2014. This includes updated air quality data, including an analysis of Allentown area monitors design value and annual means trends dating back to 2001, and correlation data comparing design values at the violating monitor with other area monitors. Finally, PADEP submitted updated 2013 emissions data for large point sources (over 500 tons per year) in the Allentown area and additional aerial photographs showing the Bethlehem Steel redevelopment site and its proximity to the violating Freemansburg monitor.

PADEP contends that the spike in annual mean values at the Freemansburg monitor in 2010 and 2011 is both temporary in nature and anomalous compared with data from other Allentown area monitors. PADEP argues that if the violation was the result of emissions

contribution from Lehigh County to the nearby Lehigh Valley monitor would show similar results to the violating Freemansburg monitor.

In an attempt to demonstrate a unique set of circumstances at the Freemansburg monitor, PADEP also provided design value correlation data comparing that monitor to five other monitors in the EPA's area of analysis. This data shows the strongest correlation between Freemansburg and Lehigh Valley monitors, however the relationship is much weaker in 2011 (during the period of peak earth disturbance and construction activity at the former Bethlehem Steel site that lies just south of the Freemansburg monitor) versus in 2013 after the conclusion of major site construction.

EPA Response: PADEP has provided only anecdotal evidence that the construction activity at the Bethlehem Steel site is causing the spike in 2010 and 2011 design values at the nearby Freemansburg monitor, leading to the violation of the 2012 $PM_{2.5}$ NAAQS for the 2011-2013 period. Speciation data and urban increment data set forth in the TSD clearly indicate that organic mass and elemental carbon are the main components of $PM_{2.5}$ at the Freemansburg violating monitor. High organic mass and elemental carbon suggest that the sources of $PM_{2.5}$ at the monitor are local in nature, likely due in large part to locally generated emissions from mobile, area or industrial sources, and not necessarily construction activity as the commenter contends. Given the proximity of the construction site to the violating monitor, the EPA would expect to see a higher proportion of crustal material as a result of the soil disturbance and construction activity.

Furthermore, insofar as the commenter seeks to advance an argument that a local source was the cause or significant contributor to the violating monitor, section 107(d)(1) requires the EPA to designate area that are either violating the NAAQS or contributing to a violation of the NAAQS in a nearby area. The statute does not require the EPA to designate as nonattainment only those areas with sources that are causing a violation of the NAAQS. Also, the EPA has interpreted "contribution" to encompass a concept that is broader than just "significant contribution." The EPA interprets the term "contributes" to mean contributes sufficiently to justify inclusion in the nonattainment area, and the EPA's multifactor test with the various analytical tools is intended to assure an objective evaluation of the appropriate facts on a case by case basis in each area. The EPA has considered multiple factors of analysis, and has applied the same analysis to all counties considered in the area of analysis as outlined in the TSD. The EPA's analysis justifies inclusion of the Northampton and Lehigh counties in the nonattainment area, as emissions in these counties are contributing sufficiently to the violating monitor.

Additionally, Pennsylvania argues that its submitted monitor design value trends for three area monitors exhibit similar patterns dating back to 2001 (except for the 2010 and 2011 peak construction period, during which time the violating Freemansburg shows a 3 ug/m3 peak above the Lehigh Valley monitor). However, the Allentown monitor discontinued operation in 2005 and the Lehigh Valley monitor only commenced operation in 2010, leaving the period between 2005 and 2010 with no other monitor in the Allentown area with which to compare values to Freemansburg. Given the lack of continuously operating monitors in the area, it is impossible to draw the types of comparisons that Pennsylvania is attempting to draw between design values for the 2010-11 period.

Pennsylvania states that if emissions from the nearby Lehigh County were contributing to the Freemansburg monitor violation, then they would expect the Lehigh Valley monitor annual means would also have increased significantly. The EPA contends that the lack of more than one violating monitor in an area is not dispositive evidence of whether a nearby area or county contributes to the violation of another monitor, as the violation may be the result of cumulative or aggregate impacts from the surrounding area.

Pennsylvania argues that its correlation comparisons between regional monitors in and around the Allentown area to the Freemansburg monitor show the strongest correlation between the Freemansburg monitor and the 1.5 mile distant Lehigh Valley monitor, followed closely by the 35 mile distant Reading monitor. Further, PADEP argues that the correlations between Freemansburg and each of these monitors is much stronger in 2013 than it was in 2011, during the height of the Bethlehem Steel site construction. The EPA would expect a high proportion of crustal $PM_{2.5}$ emissions components at the violating monitor if the 2010-2011 spike (based on the state's provided historic trend analysis) were the result of earth disturbance construction-related activity. Speciation data for the Freemansburg monitor provided by the EPA in the TSD does not show high levels of crustal material and PADEP's additional speciation analysis show high crustal material on only a small number of high monitor value days.

The Commonwealth's analysis of correlations between Freemansburg and other area monitors establishes a similar correlation relationship between Freemansburg to the distant Reading monitor with that of Freemansburg to the nearby Lehigh Valley monitor, including a similarly strong relationship in 2013 versus that of the 2011, during the time representing heavy construction activity near the Freemansburg monitor. The EPA believes such a similarly strong correlation between Reading and Freemansburg (compared with that of Freemansburg to Lehigh Valley) should not exist, if the Commonwealth's hypothesis that the cause of the spike in monitor values in 2010-2011 is the result of only local construction activity. Instead the state argues that the 35-mile distant Reading monitor exhibits similar design value relationships to Freemansburg due to its topographical similarity to the Freemansburg site. Given the primary nature of crustal ejecta (i.e., a lack of secondary $PM_{2.5}$ component formation) and its tendency towards dispersion and dilution over distance, the EPA believes the correlation relationships further support our contention that the violating monitor is showing regional level contribution of organic and elemental carbon, most likely associated with mobile, area, and industrial sources.

The Commonwealth also provided updated 2013 emissions data for large point sources (emitting more than 500 tons per year) in Northampton and Lehigh Counties. However, the provided data shows that the preponderance of emissions reductions from major point sources in the area come from Northampton County sources, with the exception of one source in Lehigh County. The reduction of point source emissions in Northampton County does not negate the EPA's position in the TSD that there is a significant contribution of non-point (area and mobile) emissions from both Northampton and Lehigh Counties.

After consideration of the analyses provided by PADEP, the EPA continues to believe the nonattainment boundary for the Allentown area should remain the two counties of Northampton and Lehigh.

Comment: Northampton County is expected to attain the $PM_{2.5}$ standard, based on 2014 design values, prior to the effective date of the EPA's final designations. Once the 2014 data is received, PADEP will request withdrawal of the Allentown area as attaining the 2012 $PM_{2.5}$ NAAQS.

EPA Response: The designation decision is based on available, certified data at the current time and reflects air quality at the current time, rather than projections of future air quality. The 2012 $PM_{2.5}$ NAAQS designations utilize the most recent certified design value data which is for 2011-2013. See Data Considerations under General Issues above. The EPA notes requests from the State to withdraw an area from the nonattainment designation will be considered through the appropriate redesignations process.

3.2.2. EPA Region IV

Comment: *Alabama Department of Environmental Management (ADEM) requested that* the entire State, including Russell County, be designated as attainment, consistent with their March 2014 initial designation recommendation. They identified that the EPA will be basing designations on the 2011-2013 monitoring period. The design value for the Russell County monitor for this period is 11.2 $\mu g/m^3$. They note that while they understand that the Columbus, Georgia, monitors have insufficient data to make a designation determination for the 2011-2013 monitoring period, the data from the Russell County monitor for this period has been quality assured and accepted by the EPA as valid and in compliance with the 2012 annual $PM_{2.5}$ NAAQS. For this reason, they continue to request that rather than defer designations for Russell County, the EPA designate Russell County as attainment, with the understanding that the designation may need to be revised if the Columbus, Georgia, monitors fail to comply with the standard for the 2012-2014 monitoring period.

EPA Response: The EPA appreciates ADEM's response to the EPA's intended designations for Alabama areas as identified in the EPA's August 19, 2014, letter. The EPA acknowledges that Alabama has valid monitoring data for the Russell County

monitor for 2011-2013 indicating an attaining design value for the 2012 primary annual $PM_{2.5}$ NAAQS at that monitoring location. However, Russell County is located in the core-based statistical area (CBSA) for the Columbus-Phenix City Area, and the Georgia monitor within this CBSA does not have sufficient data for the 2011-2013 time period for the EPA to make a determination that this part of Georgia is in compliance with the 2012 primary annual $PM_{2.5}$ NAAQS. Furthermore, based on the EPA's technical analysis (see the memorandum entitled "Georgia Deferred Areas - Air Quality Designations for the 2012 $PM_{2.5}$ National Ambient Air Quality Standard (SAN 5706)" in the EPA's docket for this rulemaking) for the Columbus-Phenix City Area and the fact that there is currently not enough data for the EPA to make a determination on whether the monitors in the Georgia portion of this area would have design values below the 2012 primary annual $PM_{2.5}$ standard, at this time the EPA lacks sufficient information to determine whether Russell County is contributing to a potential violation in the Columbus-Phenix City Area. For these reasons, and because there are indications that this area will have sufficient data in the near future which will allow the agency to make a determination, the EPA is deferring the designation for Russell County while we await forthcoming data.

Comment: Georgia Environmental Protection Division (GEPD) agrees with the EPA's intention stated in the 120-day letter to defer initial area designations under the 2012 annual $PM_{2.5}$ NAAQS for Georgia counties in the Augusta, Columbus, Savannah, Valdosta, and Washington County areas (with the exception of Dougherty County, which is part of the Albany, GA area and was incorrectly included as a "deferred" county in the August 19, 2014 letter but not in supporting documentation). GEPD also requests that the EPA similarly defer initial area designations for Georgia counties in the Atlanta, Brunswick, and Albany areas that were identified in the August 19, 2014, letter as intended "unclassifiable" areas. GEPD also respectfully requests that the non-Georgia counties associated with the Augusta and Columbus areas be designated attainment.

EPA Response: The EPA appreciates GEPD's response to the EPA's intended designations for Georgia areas as identified in the EPA's August 19, 2014, letter. The EPA agrees with GEPD's response and is now deferring designations for the Georgia counties in the Albany, Atlanta and Brunswick Areas as well as the Georgia counties identified in the Augusta, Columbus, Savannah, Valdosta, and Washington County Areas. Currently, there is not enough data to support a conclusion regarding the likelihood that these counties are not violating the 2012 annual $PM_{2.5}$ NAAQS or not contributing to nearby areas that may be violating the NAAQS. However, there are indications that these areas will have sufficient data to make a determination in the near future.

The deferred designation of the Albany Area includes Dougherty County. Although the EPA identified Dougherty County in the deferred Albany Area in the Agency's August 19, 2014, letter, the EPA intended to designate Dougherty County as "unclassifiable" in that letter. Given the lack of complete data from the Dougherty County monitor, the EPA has now decided to defer the designation for this county while the EPA awaits forthcoming data that will allow the EPA to determine the extent to which portions of the

Albany Area are violating the 2012 primary annual $PM_{2.5}$ NAAQS, or contributing to any nearby areas that may be violating that NAAQS.

Regarding GEPD's request for the EPA to designate as "attainment" the non-Georgia counties associated with Augusta and Columbus Areas, the EPA lacks sufficient information at this time to assess the likelihood that these non-Georgia counties are potentially contributing to violations that may exist in either the Augusta or Columbus Areas. Accordingly, the EPA is deferring designations for Richmond County, South Carolina (in association with the Augusta Area) and Russell County, Alabama (in association with the Columbus Area). The EPA is deferring these counties based on the EPA's technical assessment (see the memorandum entitled "Georgia Deferred Area Air Quality Designations for the 2012 $PM_{2.5}$ National Ambient Air Quality Standard (SAN 5706) in the EPA's docket for this rulemaking) of the likelihood of contribution to potential violations in the Augusta and Columbus Areas, on the fact that there is currently not enough data for the EPA to make a determination regarding whether certain areas comply with the 2012 primary annual $PM_{2.5}$ NAAQS, and on indications that these areas will have sufficient data in the near future that will allow the Agency to make these determinations. South Carolina provided a letter of support for the EPA's use of its deferral authority in this case.

Comment: The South Carolina Department of Health and Environmental Control (DHEC) agrees with the EPA's intention stated in the 120-day letter to defer initial area designations under the 2012 annual $PM_{2.5}$ NAAQS for Aiken County, South Carolina as part of the deferred area of Augusta, GA-SC. DHEC expects that 2014 monitoring data will show that the area meets the standard.

EPA Response: The EPA appreciates the commenters' support.

Comment: The Tennessee Department of Environment and Conservation recommends that the EPA defer initial area designations for all areas in Tennessee, except for Hamilton, Marion and Sequatchie Counties in the Chattanooga area that the EPA identified in the August 19, 2014 letter as intended "unclassifiable/attainment."

EPA Response: The EPA appreciates TDEC's response to the intended designations for Tennessee areas as identified in the EPA's August 19, 2014, letter. The EPA agrees with TDEC's response and based on its analysis of the information available, the EPA is now deferring designations for all counties in Tennessee, except for Hamilton, Marion and Sequatchie Counties in the Chattanooga Area. Currently, there is not enough data in these areas to make determinations regarding the areas' compliance with the 2012 primary annual $PM_{2.5}$ NAAQS. However, there are indications that these areas will have sufficient data in the near future which will allow the Agency to make these determinations. As indicated in the EPA's August 19, 2014 letter and as recommended by TDEC, the EPA is designating the Hamilton, Marion, and Sequatchie Counties in the Chattanooga Area as "unclassifiable/attainment" for the 2012 primary annual $PM_{2.5}$ NAAQS. The EPA is making the final designation of "unclassifiable/attainment" for these counties because the

EPA has sufficient data for the counties in the CBSA for the Chattanooga Area (i.e., Hamilton, Marion, and Sequatchie Counties in Tennessee and Catoosa, Dade, and Walker Counties in Georgia) to make this final designation.

Comment: Sierra Club opposes the EPA's proposal to designate the Atlanta and Columbus Areas in Georgia as unclassifiable and believes that the EPA must designate these areas as nonattainment. According to Sierra Club, the EPA cannot designate these areas as unclassifiable because doing so would be against available data, the EPA regulations, and the EPA guidance and would subject Georgians to considerable health risks, including risks of increased mortality rates. In support of its position, Sierra Club states that:

"The Atlanta and Columbus areas have a 2010-2012 design value that is valid and shows nonattainment, and no valid design value that contradicts this finding. Further, these areas include some of the most densely populated areas of the state.

"Georgia's Recommendation concludes that that the entire state be classified attainment/unclassifiable. However, that suggestion relies on both an incorrect period to determine the design value and inappropriate predictions on the part of the state. Further, it misrepresents the data available to the state. On December 13, 2013, the only complete three years of data that was available to the Georgia Environmental Protection Division was the data from 2010, 2011, and 2012. Under the 2012 Design Value, monitors in the Atlanta and Columbus areas violate the NAAQS. Although Georgia tries to hide this fact by performing a series of educated guesses as to 2013 monitor readings, the data is clear that these areas violated the NAAQS under the 2012 design value.

"The April 2013 the EPA Memo directs states to use 2010-2012 data for state recommendations. That same memo then states that that 2013 monitor data may be used by the EPA to determine NAAQS designations *only if valid data is available to inform the 2013 design value.* In Georgia's case, there is not enough data for the EPA to rely on the 2013 design value. As a result, the EPA's use of the 2013 design value would be contrary to its own regulations and guidance. Further, it is the EPA's directive under the Clean Air Act to protect both human health and the environment. As indicated in the EPA's decision to defer designation for other parts of Georgia, it is appropriate to take cautionary approach to protect human health.

"To err on the side of protecting human health and provide for an adequate margin of safety, the EPA's data conventions require less stringency to determine that an area is nonattainment when there is incomplete data. Under Appendix N to 40 CFR Part 50, "years with *at least 11 creditable samples* in each quarter shall [] be considered valid if the resulting annual mean or resulting annual $PM_{2.5}$ NAAQS quarter shall [] be considered valid if the resulting annual mean or resulting annual $PM_{2.5}$ NAAQS [design value] (rounded according to the conventions of section 4.3 of this appendix) *is greater than the level of the applicable primary or secondary annual $PM_{2.5}$ NAAQS."* 40 C.F.R. Part 50, Appendix N, at 4.1(b). Put another way, so long as the mean results in a violation

of the NAAQS, a year's data is considered valid if there are at least 11 creditable samples in each quarter of that year.

"It is clear that areas in Georgia violated the NAAQS under the 2012 design value, and that the 2013 design value is not valid due to data completeness issues. However, both the Georgia Recommendation and the EPA Response contain discussions about trends on $PM_{2.5}$ emissions and $PM_{2.5}$ precursor emissions. To the extent that either agency relies on these general trends to inform NAAQS designations, that reliance is inappropriate and misguided.

"Georgia's assertion that lower $PM_{2.5}$ levels are due to real and permanent emission reductions for $PM_{2.5}$ and $PM_{2.5}$ precursors is completely contrary to recent permitting actions taken by the State, which found that such reductions were not permanent. For example, when it applied to convert Plant Yates to natural gas in 2013, Georgia Power asked the Georgia Environmental Protection Division ("GaEPD") to adjust its baseline emissions rate time period because of decreased use of its coal units. Georgia Power claimed the decreased use was due to the Great Recession, which "officially began December 2007," and natural gas prices, which "reached historic lows and [caused] the use of many coal-fired plants [to] decline[] drastically." *Id.* at 2. Georgia EPD concurred with Georgia Power's assessment. Georgia EPD cannot credibly claim that emissions reductions are permanent, or even that general trends can be assumed going forward, after finding that the same reductions are due to cyclical changes in the economy and natural gas prices. Further, Georgia relies on Georgia Rule 391-3-1-.02(2)(sss) ('Georgia Rule (sss)'). However, Georgia Rule (sss) has not been formally incorporated into the State Implementation Plan as approved by the EPA. If Georgia does intend to rely on this rule to avoid nonattainment, it must make the rule federally enforceable by incorporating it into the SIP."

EPA Response: In the information that the Agency released on August 19, 2014, providing the intended designations for the Atlanta and Columbus Areas (amongst other areas nationwide), the EPA stated its intention to designate the Atlanta Area as unclassifiable and to defer the designation of the Columbus Area. The EPA is now deferring designations for a number of Georgia counties in the Atlanta Area, as well as for the Alabama and Georgia counties in the Columbus-Phenix City Area. The EPA does not currently have enough data to make determinations regarding either the areas' compliance with the 2012 primary annual $PM_{2.5}$ NAAQS, or the relative likelihood that portions of these areas are contributing to potential nearby violations. However, because the EPA expects that all monitors within these areas will have sufficient data to promulgate designations in the near future, the Agency is merely deferring designations for these areas.

For the reasons discussed above, the EPA is deferring initial area designations for both the Atlanta and Columbus Areas pursuant to its authority under section 107(d)(1)(B) of the Clean Air Act. The EPA expects that complete data for these areas are forthcoming, and will promulgate designations for these areas when it has sufficient information to do so. Designations for these Areas will be based on actual data reflecting conditions during the period relevant to the designation process; they will not be based on projected

emission trends. The EPA provided information regarding emissions trends in its August 19, 2014, letter to the State of Georgia and associated technical support documents to better inform the public of the levels of particulate matter pollution in the Atlanta and Columbus-Phenix City Areas over time. Any forward-looking reductions relied upon in the designation process will have to be based on actual, enforceable, and permanent reductions. Finally, the EPA did not rely on Georgia Rule (sss) in making the decision to defer these areas.

3.2.3. EPA Region V

Comment: Ohio EPA believes that Lake County should be designated as attainment. The monitoring ID 39-085-0007 in Lake County is in attainment. Lake County is located east of Cuyahoga County where the nonattainment monitors are located. Therefore, an easterly wind pattern would be necessary to cause emissions in Lake County to contribute to violations in the Cleveland area. However, as indicated by the meteorological wind data US EPA reported "there is a pattern across the area of predominantly south to west winds, mostly at mid-level speeds of 4 to 10 meters per second, suggesting that potential emission sources in the south through-west upwind direction should be considered for analysis." In addition, the eastern monitor in Cuyahoga County is also in attainment (located between Lake County and the nonattainment monitor).

The EPA also reported that Lake County emits the greatest amount of direct $PM_{2.5}$ and precursors in the Cleveland area including 44% of the SO_2 emissions. The Cleveland Electric Illuminating Company Eastlake Plant (Eastlake Power Plant) contributed approximately 93% of the total point source emissions evaluated for Lake County and is located 18 miles from the nearest nonattainment monitor. For nearly 2 years (2013 and 2014 emission reporting years) the largest units at the Eastlake Power Plant, units 4 (240 MW) and 5 (597 MW), have been shutdown (generators have been removed and cannot resume operation). The facility has already made significant reductions in $PM_{2.5}$ and $PM_{2.5}$ precursors to date. A proposed shutdown of the remaining units 1, 2 and 3 (132 MW each) by April 2015 has been submitted for approval to PJM Interconnection Regional Transmission Organization (RTO). The proposed shut down of the remaining units is included in the PJM Interconnection RTO Generator Deactivation Summary Sheets available at http://www.pjm.com/planning/generation-deactivation/gdsummaries.aspx and will result in further dramatic reductions in direct $PM_{2.5}$ and precursor emissions prior to the impending $PM_{2.5}$ annual NAAQS attainment date. Eastlake Power Plant has also informed Ohio EPA they are in agreement with zeroing out their SO_2 emissions for the purpose of future attainment demonstration modeling for the 2010 SO2 NAAQS SIP document due in spring of 2015.

Ohio EPA's recommendation that all of Lake County should be designated as attainment is further supported by HYSPLIT KDE (HYbrid Single-Particle Lagrangian Integrated Trajectory Kernel Density Estimation) plots presented in the US EPA Cleveland TSD. The KDE plots show that for each quarter evaluated (2010-2012) Carmeuse Lime, Incorporated - Grand River Operations, which is 28 miles away from the nearest nonattainment monitor, is not located within a KDE grid with a frequency of 75% or

higher of observed trajectory endpoints. Painesville Municipal Electric Plant, which is also 28 miles from the nearest nonattainment monitor, only had an estimated density in the 75% or higher range during the second quarter of years 2010-2012, when the quarterly average at all of the Cuyahoga County monitoring sites was below 12.0 $\mu g/m^3$. If the EPA insists on including Lake County in the Cleveland nonattainment area, Ohio EPA strongly urges that only the western portion that encompasses the area including and west of the Eastlake Power Plant. Although Ohio EPA disagrees commuter travel between Lake County and Cuyahoga County would warrant including Lake County in the nonattainment area, designating only the following townships in the western portion of Lake County would capture the majority of commuter VMT emission between Lake and Cuyahoga Counties: Eastlake, Lakeline, Timberlake, Wickliffe and Willowick. These townships also surround the Eastlake Power Plant. However, as presented in Ohio EPA's original recommendations, although the number of commuters traveling into Cuyahoga from Lake County was among the highest evaluated, only 5.2% of the workers working in Cuyahoga County commute in from Lake County. Ohio EPA believes this small percentage of vehicle source emissions does not warrant inclusion of any portion of Lake County in the Cleveland nonattainment area.

EPA Response: The EPA agrees with Ohio's conclusion that Lake County should not be designated nonattainment based on contribution to violations of the NAAQS in Cuyahoga County. The EPA's preliminary conclusion to include Lake County as nonattainment was primarily because the EPA believed at the time that Lake County emitted the greatest amount of direct $PM_{2.5}$ and precursors in the Cleveland area – over 5,000 tpy more than is emitted in Cuyahoga County. This was primarily because the EPA believed at the time that Cleveland Electric Illuminating Company Eastlake Power Plant (Eastlake) had the highest combined emissions of any source in the Cleveland area, and also because it was only 18 miles from the design value monitor in Cleveland. However, for nearly two years the two largest units have been shut down and the generators have been removed and cannot resume operation. These shutdowns are permanent and enforceable. As a result of these shutdowns, NOx emissions have been reduced by 6,204 tons per year and SO_2 emissions have been reduced by 43,264 tons per year since 2013. In addition, the remaining three smaller units are scheduled to be shut down by April 2015, although this likely future reduction did not factor into the EPA's analysis. This reduction in emissions from the already shut down units makes Lake County go from being the county with the greatest amount of direct $PM_{2.5}$ and precursors in the Cleveland area to one of the counties with below average emissions in the Cleveland area.

Lake County is east of and downwind from the violating monitors in Cleveland, based on wind roses generated by the EPA for the Cleveland area, which show a pattern of predominantly south to west winds – mostly at mid-level speeds of 4 to 10 meters per second. HYSPLIT KDE plots for the Cleveland area indicate a greater frequency of trajectories passing over grid cells to the west and south. In addition, only 5.2% of Cuyahoga workers commute from Lake County. While the EPA previously believed that emissions from the Eastlake Power Plant were substantial enough to overcome these countervailing factors and warrant Lake County's inclusion in the Cleveland nonattainment area, the updated information from Ohio indicates that this is no longer the case.

In conclusion the EPA agrees with Ohio that Lake County should be designated as attainment because of the very large, permanent, and enforceable decrease in point source emissions identified by Ohio, because Lake County is downwind of the violating monitors in Cleveland, and because there are only a moderate number of Lake County workers commuting to Cleveland.

Comment: Ohio EPA recommends that Lorain County be designated as attainment. Lorain County is located west of Cuyahoga County and the Cleveland area nonattainment monitors. Monitor 39-093-3002 located centrally along the northern border of Lorain County (6 miles from Avon Lake Power Plant) and monitor 39-035-1002 on the west side of Cuyahoga County between Lorain and the violating monitors are both in attainment. Avon Lake Power Plant is the only major point source in Lorain County. It is located in northeast corner of Lorain County approximately 19 miles from the nearest nonattainment monitor. Avon Lake Power Plant announced June 30, 2013 that it will be converting to natural gas; Ohio EPA granted a Mercury Air Toxics Toxic Standards (MATS) extension to April 16, 2016 for the facility. Ohio EPA expects that this conversion will result in dramatic $PM_{2.5}$ and $PM_{2.5}$ precursor emissions from the Avon Lake Power Plant, therefore Ohio EPA believes Lorain County should be designated as attainment.

The VMT in Lorain County (2,787,828,581) were the second highest in the evaluation area, but still significantly lower than those of Cuyahoga County (8,534,134,941). However, as presented in Ohio EPA's original recommendations, only 5.9% of the workforce in Cuyahoga County commutes in from Lorain County. Ohio EPA believes this small percentage of vehicle source emissions does not warrant inclusion of any portion of Lorain County in the Cleveland nonattainment area.

EPA Response: The EPA disagrees that Lorain County should be designated as attainment. Lorain County is west of and upwind of the violating monitors in Cleveland. This is evidenced by the wind roses that the EPA generated for the Cleveland area, which show a pattern of predominantly south to west winds - mostly at mid-level speeds of 4 to 10 meters per second. In addition, HYSPLIT KDE plots for the Cleveland area indicate a greater frequency of trajectories passing over grid cells to the west and south. Therefore, all of the direct $PM_{2.5}$ and precursor emissions from point, area and mobile sources can impact the Cleveland monitors.

Although the Avon Lake Power Plant (Avon Lake) will be converting to natural gas this will not occur until April, 2016 and there will still be significant NOx emissions after the conversion occurs. Unlike the shutdown which has actually occurred in Lake County, this scheduled conversion will not take place until well after the designation process and it is therefore difficult to establish the impact of this conversion on Cleveland $PM_{2.5}$ levels.

Although only 5.9% of the workforce in Cuyahoga County commutes in from Lorain County, the VMT in Lorain County, at 2.8 million, is one of the highest in the Cleveland area. This is significant because, unlike for Lake County, the vehicular emissions in

Lorain County will have an impact on the Cleveland monitors because Lorain is commonly upwind of Cuyahoga County and Cleveland.

In summary, Lorain should be designated as nonattainment for $PM_{2.5}$ because it has the third highest amount of direct $PM_{2.5}$ and precursors in the Cleveland area, the conversion to natural gas at Avon Lake will not take place until April, 2016, it is commonly upwind of the violating monitors in Cleveland and has significant VMT.

Comment: Ohio EPA believes that Summit County should be designated as attainment. Both of the monitoring sites (monitor 10391530017, 391530023) located in Summit County are in attainment. US EPA considered Summit County in the nonattainment analysis for the Cleveland, Ohio area as well as the Canton Massillon, Ohio area. The previous Ohio EPA recommendation and analysis submitted on December 13, 2013 still holds true for Summit's impact on violations in the Cleveland nonattainment area.

While Ohio EPA agrees that Summit County is best suited in the Canton-Massillon nonattainment area as opposed to the historically designated Cleveland area, Ohio EPA still asserts that Summit County should not be designated nonattainment. The three major point sources located in Summit are within 4 miles of the two Summit County attaining monitors. Wind data indicates that the majority of the winds near these three major point sources are westerly to southerly which would move pollutants away from the nonattainment monitor in Stark County. The majority of the northerly winds observed in Summit County are low speed ranging from 2-6 mph. Back-trajectories of the first, second, third and fourth maximum concentration days over three years (2010-12) at the Stark County nonattainment monitor 39-151-0017 were analyzed using NOAA's Model, HYSPLIT. The back trajectory simulations also included the trajectories of exceedance days of 24-hr $PM_{2.5}$ standard for years 2010-12 at the same monitor. The purpose of trajectory analyses was to determine the cause of violation by simulating the flow of 24-hour air trajectory patterns in the backward mode. The analysis indicates that none of the 24 hour backward trajectory patterns originated from areas directly north or northeast of the monitor indicating that the trajectories were not influenced by Summit County sources. Although Summit County has the highest VMT for the counties evaluated in the Canton-Massillon area, as indicated in Ohio EPA's original recommendations, only 5.5% of the workers commuting into Stark County travel from Summit County. Ohio EPA believes that this small percentage of commuters in combination with the wind trends and beck trajectory data support a Summit County attainment designation.

EPA Response: The fact that the Summit County monitors are attaining the annual $PM_{2.5}$ standard does not prove that there is no contribution from the area to violations in Cleveland or Canton. Summit County has both significant emissions and VMT, with the second highest total emissions, third highest direct $PM_{2.5}$ emissions and highest VMT among the counties in the area of analysis for Canton, and the third highest total emissions and second highest VMT among the counties in the area of analysis for Cleveland.

Further, the HYSPLIT modeling provided by Ohio EPA was limited in that it only considered trajectories for the four highest concentration days and the 24-hour

exceedance days for the 2010-2012 time period. For the 2012 annual NAAQS, the monitoring data for the entire calendar year (including on days that are below the level of the NAAQS) are part of the mathematical calculation of whether a monitor is nonattainment or not. Therefore, wind directions during periods that do not have high ambient levels are also relevant. Nevertheless, it can be informative to evaluate the days with monitored concentrations that exceed the value of the standard, 12.0 $\mu g/m^3$, since those are the days that make a larger contribution towards a violation. The EPA analyzed all of the days with concentrations exceeding 12.0 $\mu g/m^3$ during the 2011-2013 time period at the Canton design monitor, using the HYSPLIT model to simulate back trajectories. Of the days with concentrations exceeding the value of the annual standard at the Canton monitor, 37% of the days have trajectories passing over Summit County. In conjunction with the emissions, meteorology, and VMT data for Summit County, this data indicate that Summit County contributes to the violations monitored in both Canton and Cleveland. Therefore, the EPA continues to conclude that Summit County should be designated as nonattainment because it contributes to violations of the NAAQS in nearby areas.

Ohio EPA indicates that Summit County is best suited for the Canton nonattainment area. The EPA agrees that Summit County is more appropriately included in the Canton-Massillon nonattainment area than the Cleveland area. The major point sources in Summit County are in the southern portion of the county, closer to the violating monitor in Canton than to the violating monitor in Cleveland. In addition, kernel density plots for Canton show a high density of trajectories covering the southern portion of Summit County. For these reasons, the EPA is designating Summit County as part of the Canton-Massillon area even though Summit County also contributes to the Cleveland area.

Comment: Ohio EPA believes that the entire Wayne County should be designated as attainment. The cumulative VMT in Wayne County (1,192,145,098 miles in 2012) is less than 1/3 of the VMT in Stark County (3,838,738,336 miles in 2012), and as shown in Table 5 of the Ohio TSD, only 1.3% of the workers commuting into Stark County commute in from Wayne County. Ohio EPA believes this small percentage of vehicle source emissions does not warrant inclusion of Warren County in the nonattainment area. The major point sources in Wayne County are located approximately 18-24 miles west-northwest of the nonattainment monitor in Stark County. Ohio EPA believes that point sources located at this great of a distance are not significantly contributing to violations at the Stark County monitors, especially when considering there are two major Stark County point sources located within 3 miles of the nonattainment monitor. As reported by US EPA, the Department of Public Utilities, City of Orrville (Orville Power Plant) contributes 74% of the major point source total direct $PM_{2.5}$ and precursor emissions evaluated in Wayne County. This facility is subject to the Boiler Maximum Achievable Control Technology (MACT) rules established in 40 CFR 63 Subpart DDDDD. It is also likely that the Orville Power Plant will be evaluated under the SO_2 NAAQS. Under these regulations, Ohio EPA believes that the Orville Power Plant will experience significant reductions in $PM_{2.5}$ and $PM_{2.5}$ precursors prior to the impending $PM_{2.5}$ attainment date. If US EPA insists on designating Wayne County as nonattainment, Ohio EPA believes that only Orrville Township in Wayne County should be designated as nonattainment similar

to the approach used for designating Ashtabula Township as nonattainment for the 2006 $PM_{2.5}$ NAAQS. In this approach the emissions in Ashtabula Township (a portion of Ashtabula County, Ohio) were found to be primarily attributable to Cleveland Electric Illuminating's Ashtabula plant and therefore only Ashtabula Township (rather than all of Ashtabula County) was designated as nonattainment. Using this approach, Orrville Township would be the only portion designated as nonattainment in Warren County.

EPA Response: The EPA disagrees that Wayne County should be designated as attainment. Wayne County is west of the monitor in Stark County and wind roses, pollution roses and HYSPLIT modeling all indicate that sources in Wayne County contribute to monitored $PM_{2.5}$ levels at the Stark County monitor. While VMT may not be particularly high in Wayne County, total emissions are higher in Wayne County than in Stark County. The majority of the emissions can be attributed to three point sources. These sources are located in the north-east quarter of the county comprised of Baughman, Chippewa, Green, and Milton townships and the portion of Norton City located within Wayne County.

Comment: We oppose the EPA's proposal to override Indiana Department of Environmental Management (IDEM's) recommendation. The EPA cites no issues with IDEM's data, which is complete and shows attainment across all monitors in both counties. Instead, the EPA proposes to change the designation for Lake and Porter counties to "unclassifiable" due to irregularities with Illinois' sampling program. Specifically, the EPA proposes to designate Lake and Porter counties as "unclassifiable" on the premise that it cannot determine whether those counties *may* be contributing to a violation in Illinois, *if* such a violation exists. All monitors in both Indiana counties demonstrate compliance with the 2012 $PM_{2.5}$ NAAQS. The EPA has not challenged the validity of that data. Nor has the EPA identified a single violating monitor where it contends Lake and Porter counties are "contributing" to nonattainment. Under these circumstances, the CAA mandates an "attainment" designation for both counties.

The EPA lacks authority to designate Lake and Porter counties as "unclassifiable." The CAA provides three NAAQS designation categories: (1) nonattainment, (2) attainment, and (3) unclassifiable. By explicitly defining each category, Congress limited the discretion of states and the EPA in making designations. The EPA must designate as nonattainment "any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the [NAAQS] for the pollutant." The EPA must designate as attainment "any area (other than an area identified in clause (i)) that meets the [NAAQS] for the pollutant." Areas may be designated "unclassifiable" only when the area "cannot be classified on the basis of available information as meeting or not meeting the [NAAQS] for the pollutant." Lake and Porter counties are meeting the NAAQS and have not been linked to any nonattaining monitor, making nonattainment and unclassifiable designations improper. Therefore the only designation category the CAA allows for Lake and Porter counties is "attainment."

The EPA correctly concluded that Lake and Porter counties do not meet either criterion for a "nonattainment" designation. Without either (1) a nonattaining monitor in Lake

and/or Porter counties or (2) a nonattaining monitor outside Lake and Porter counties to which these counties are contributing, Lake and Porter counties do not fit the definition of "nonattainment." Similarly, Lake and Porter counties do not meet the criteria for "unclassifiable." An "unclassifiable" area is defined as one in which a lack of information prevents the EPA from determining if the area is "meeting or not meeting the [NAAQS]." There is no lack of information on the attainment status of Lake and Porter counties.

Unlike the definition of "nonattainment," the statute does not allow the EPA to designate an area as unclassifiable because of its potential to *contribute* to an unclassifiable area. The plain statutory text tellingly omits any reference to contribution, instead focusing only on whether the county *itself* is meeting the NAAQS. There is no lack of data or ambiguity on that point to support an unclassifiable designation. Pursuant to CAA § 107(d)(l)(A)(ii), the EPA must designate an area as "attainment" if it "meets the [NAAQS] for the pollutant" and does not satisfy the criteria for nonattainment. That is precisely the situation in Lake and Porter counties. The EPA has undisputed information demonstrating that all monitors in Lake and Porter counties are attaining the 2012 $PM_{2.5}$ NAAQS. The EPA has not identified a single nearby monitor that is demonstrating nonattainment, and therefore cannot conclude that Lake and Porter counties are contributing to nonattainment elsewhere.

Only an attainment designation is consistent with the CAA's provisions for adjusting designations as new information becomes available. Specifically, CAA § 107(d)(3)-(4) allows the redesignation of Lake and Porter counties *if* valid data from Illinois later indicates a NAAQS violation and *if* the EPA demonstrates that Lake and/or Porter counties are contributing to that violation. In the meantime, the EPA must make designations based on the information it has. That information permits only one designation for Lake and Porter counties: attainment.

EPA Response: The commenter properly quotes the criteria in Clean Air Act section 107 for designating areas nonattainment, attainment, or unclassifiable, but the commenter misinterprets the criteria for being designated attainment. At issue is two counties that themselves attain the air quality standard but that contribute to concentrations nearby that may be violating the standard. The commenter argues that a particular portion of the Chicago area (Lake and Porter Counties, Indiana) should be designated attainment because the two counties a) meet the standard and b) have not been identified as a nonattainment area. However, the EPA believes that a more appropriate interpretation of the criteria for an attainment designation is whether the entire area (including any portion of the area with emissions that contribute to concentrations in the area) is attaining the standard. Since the Chicago area cannot be determined to be an area that is meeting the standard, the Chicago area (including all portions that contribute to concentrations in the Chicago area) does not quality for designation as attainment.

The EPA designates entire areas as nonattainment, attainment, or unclassifiable; the EPA does not promulgate separate designations for separate portions of areas. For example, in 2005, the EPA designated a Chicago $PM_{2.5}$ nonattainment area that included Lake and Porter Counties in Indiana as well as part or all of eight Illinois counties as a single combined area. This designation defined a planning area, triggering the applicability of

an assortment of planning requirements under Section 172 and other sections of Part D among other things to provide a unified plan by which control measures throughout the area would be considered and adopted as appropriate to pursue attainment throughout the area. Thus, interpreting the word "area" in Section 107 as meaning the entire area that is designated as a unit is more consistent with the manner in which the EPA has historically promulgated designations and is more consistent with other elements of the Clean Air Act that apply planning requirements to areas as a whole. Addressing areas as a whole also provides a more logical outcome to the designation process in cases like this: where, as here, the area does not warrant a nonattainment designation because the area cannot be classified as violating the standard, and the area does not warrant an attainment designation because the area cannot be classified as attaining the standard, the area clearly warrants a designation that the area "cannot be classified on the basis of available information as meeting or not meeting" the standard.

Nothing in the Clean Air Act suggests either that the EPA should designate separate portions of the Chicago area separately or that the provisions of 107 should be interpreted as yielding a large area if the area is violating the standard but a small area if the area is attaining the standard or if the area is unclassifiable. To the contrary, once a nonattainment area is defined, the planning provisions apply to the nonattainment area as a whole, wherein the planning addresses a unified area that includes all the interconnected locations within an area that are experiencing violations and contributing to those violations. The commenter evidently envisions balkanizing these areas into an unlimited number of separate pieces, with each piece designated without regard to the interconnections between these pieces, but this approach is inconsistent with the use of the word "area" and the planning process provided in the Clean Air Act. Similarly, the provisions for redesignating nonattainment areas ("or portions thereof") to attainment are contingent on satisfaction of various prerequisites, where the relevant provisions must address air quality across the entire area. For example, the EPA cannot redesignate a portion of a nonattainment area if permanent and enforceable measures are yielding attainment in only a portion of the area. By the same logic, Section 107(d)(1) must be interpreted to provide for an attainment designation only if the entire area is attaining the standard and to provide for an unclassifiable designation if the full area cannot be determined to be violating or attaining the standard.

The commenter highlights the absence of reference to contributing area in the criteria for an unclassifiable designation. However, this has significance only with the commenter's use of the word "area." Interpreting "area" to mean just one of several interconnected locations, and accepting the commenter's interpretation that areas contributing to a potentially contributing to violations cannot be designated unclassifiable unless air quality is uncertain in those particular locations, yields the illogical result that the size of unclassifiable areas would generally be much smaller than the size of the area if it were designated nonattainment. In contrast, interpreting "area" to mean all of the locations that collectively influence whether the collective set of locations meets the air quality standard yields a more coherent interpretation of the three designations in Section 107(d)(1) that is more consistent with the terminology and planning requirements elsewhere in the Clean Air Act that result from these designations. With this broader interpretation of the word "area," Section 107(d)(1)(i) clarifies that nonattainment areas

must include contributing locations as well as violating locations, Section 107(d)(1)(ii) clarifies that locations that are meeting the standard but are part of a broader area that is violating the standard cannot be designated attainment, and Section 107(d)(1)(iii) specifies that any area (which in context would include all the interconnected source and receptor locations) that cannot be determined to be violating or attaining the standard would be designated unclassifiable. The EPA believes that Lake and Porter Counties contribute to concentrations in Cook County and elsewhere in the Chicago area, and the EPA believes more generally that the set of locations with source-receptor relationships that warrant being included in the area that could be called the Chicago area would include Lake and Porter Counties. Since the EPA is unable to determine whether this area meets or does not meet the standard, the EPA believes that Section 107(d)(1) provides for the Chicago area, including Lake and Porter Counties, to be designated as unclassifiable.

Comment: The EPA may not invalidate data for one purpose and rely on it for another. The EPA suggests that "the available air quality data suggest that the spatial distribution of exposure to $PM_{2.5}$ is similar to the distribution the EPA found in 2005, when it promulgated the Chicago 1997 $PM_{2.5}$ nonattainment area." However, the EPA already determined that the "available air quality data" in Illinois is invalid. The EPA may not *invalidate* data for designating Illinois counties and at the same time arbitrarily *use* that invalid data as the basis for designating Indiana's counties. Once the EPA determined that the Illinois data was invalid, that data could no longer be considered. It would be arbitrary for the EPA to second-guess Indiana's detailed and carefully considered recommendation based on data the EPA has already deemed unreliable.

EPA Response: The commenter is misreading the EPA's statements regarding the available air quality data. The EPA's technical support document for its intended actions for Illinois and associated areas stated, "While the Illinois air quality data are not sufficiently complete to provide a reliable indication of the magnitude of concentrations, the available air quality data suggest that the spatial distribution of exposure to $PM_{2.5}$ is similar to the distribution the EPA found in 2005." Thus, as is clear from the technical support document, the EPA believes that insufficient air quality data are available to determine whether a violation exists at any site in Illinois, but the EPA believes that sufficient air quality data are available to assess the spatial distribution of concentrations in the Chicago area. (Indeed, the EPA makes these data available for purposes such as these under parameter code 88501 in its Air Quality Subsystem (AQS).) Furthermore, even if the EPA were to disregard recent air quality data, the similarity of the distribution of emissions in 2002 (as examined in 2005) and in 2011 (examined more recently) lend further support to the view that the distribution of concentrations recently is similar to the distribution in 2002 to 2004. As a result, and given that "a review of the distribution of emissions, population, and vehicle travel also shows a similar distribution" in the older and newer data sets, the EPA continues to believe that the same locations are contributing to high annual average concentrations now that contributed to high concentrations in 2002 to 2004. While the EPA has insufficient information to determine whether the high concentrations are above or below the standard, the EPA has sufficient information to identify the range of locations that may be considered either to be experiencing

concentrations potentially above the standard or to be contributing to these concentrations potentially above the standard.

Comment: One commenter notes that the EPA's proposed designation of Lake and Porter Counties as "unclassifiable" is arbitrary and capricious. The EPA's sole basis for designating Lake and Porter counties as "unclassifiable" is theory that "if the Chicago area is violating the NAAQS, the area that the EPA finds would *likely* be contributing to that violation would *likely* be the same area as the EPA found in 2005 to contribute to violations of the 1997 $PM_{2.5}$ NAAQS [which includes Lake and Porter counties]." That speculation is unsupported by any facts in the record and ignores the fact (noted in Table 2 of the Illinois TSD) that the western most Lake County $PM_{2.5}$ monitor (site number 18-089-2010), which is less than five-thousand feet from the Illinois and Indiana border, had $PM_{2.5}$ design values of 11.0 and 10.6 $\mu g/m^3$ during 2010-2012 and 2011-2013, respectively. These values are well under the $PM_{2.5}$ NAAQS of 12 $\mu g/m^3$. The EPA has failed to demonstrate that current attainment levels in Lake and Porter counties are linked to any non-attaining monitor.

The EPA may not rely on a 2005 NAAQS analysis when updated guidance and data are available. The EPA's claim that "a review of the distribution of emissions, population, and vehicle travel also shows a similar distribution of these parameters [to 2005]" similarly fails to support an unclassifiable designation for Lake and Porter counties. Stating conclusively that some characteristics in the region appear similar to those in 2005, without providing any citations or support, falls far short of demonstrating that Lake and Porter counties are responsible for unidentified potential air quality problems in Illinois. First, the current "distribution of emissions" cannot be determined without valid monitoring data in Illinois. Second, having similar population and vehicle travel profiles in 2014 and 2005 does not demonstrate that Lake and Porter counties are "likely" contributing to a potential NAAQS violation in Illinois. That is particularly true because no specific Illinois monitor exists that would allow the EPA to evaluate such links. In addition, the EPA's proposed designations fail to address how the factors relied on in 2005 relate to U.S. EPA's 2013 guidance on Area Designations for the 2012 Revised Annual Fine Particle National Ambient Air Quality Standard ("2013 Guidance"). The 2013 Guidance includes factors such as air quality data, location of sources, growth rate and patterns, weather, geography and jurisdictional boundaries, none of which are addressed in the Illinois TSD. The EPA has made no mention of whether these other factors are comparable to 2005, and indeed has done no analysis whatsoever to determine the present-day impacts of Lake and Porter counties on Cook County, Illinois. In fact, the EPA's assumptions fail to take into account important developments affecting the concentration and distribution of $PM_{2.5}$ in this region, such as the closing of the massive coal-fired State Line Generating Plant in 2012 and the continual decrease in $PM_{2.5}$ ambient concentrations since 2009. The EPA cannot ignore such developments. The EPA is required to demonstrate a rational connection between the facts found and the choices made when making NAAQS determinations. The EPA has not analyzed the actual relationship between emissions in Lake and Porter counties and $PM_{2.5}$ concentrations in Illinois, nor has the EPA even identified a NAAQS violation in Illinois that would warrant such an inquiry. Basing designations on unfounded speculation over what

impacts Lake and Porter counties ***might*** have on a ***potential*** NAAQS issue in Illinois when those counties specifically show attainment would result in an arbitrary and capricious designation.

EPA Response: The EPA's technical support document for its $PM_{2.5}$ designations for Illinois and associated areas provides the EPA's rationale for defining the Chicago area for purposes of these designations. The commenter is incorrect in claiming that the EPA has not analyzed the relationship between emissions in Lake and Porter Counties and $PM_{2.5}$ concentrations in Illinois and in claiming that the EPA's designation is based on "unfounded speculation." Nevertheless, in alleging the absence of the information that is provided in the docket for the proposed rulemaking, the commenter mostly chooses not to provide comments on the merits of the analysis the EPA did provide and fails to identify objections to the specific elements of the analysis that the EPA did conduct.

The commenter objects to the approach of defining an unclassifiable area based on hypothesizing a violation and reviewing the locations that would contribute to such a violation, but the commenter does not suggest any alternative approach for defining the contributing portions of an area that might violate the standard or express views on how the EPA might better determine the boundaries of an area with the potential to violate the standard, including the associated locations that contribute to concentrations where the standard may be violated. (Comments interpreting Clean Air Act Section 107 to provide for the exclusion of contributing areas from areas designated unclassifiable are addressed above.) The EPA continues to believe that we have properly designated as unclassifiable both the locations with the potential for violating the standard and the locations that contribute to concentrations where violations may be occurring, and the EPA continues to believe that the most appropriate means of defining the contributing portions of such areas is to examine available information, including information on air quality, emissions, meteorology, jurisdictional considerations, and topography, to determine what locations might be expected to contribute to the violations if in fact they are occurring.

The commenter asserts that the EPA's conclusion ignores the existence of data in Lake County, less than a mile from Cook County, showing concentrations somewhat below the standard. The commenter does not explain his concept of linking monitoring data, and the commenter provides no explanation as to why concentrations at about 90 percent of the standard should be treated as evidence that Lake and Porter Counties do not contribute to concentrations in Cook County that may exceed the standard. The EPA need not identify a specific monitor in Cook County as violating the standard to conclude that if a monitor in Cook County is violating the standard, Lake and Porter Counties are contributing to the violation.

The commenter questions whether the analysis that the EPA completed in 2005 addresses the criteria that the EPA identified in its 2013 guidance. In fact, though the 2013 guidance uses a different organization of its recommended factors than the 2003 guidance used in preparing the 2005 designations, the underlying information and analytical approaches recommended in the 2013 guidance are very similar to those recommended in the 2003 guidance. Thus, the analyses completed in 2005 effectively address the factors identified in the 2013 guidance. In addition, the EPA reviewed more recent data,

concluding that these data (reviewed in accordance with the 2013 guidance) justified the same area definition as the EPA promulgated in 2005.

Although the relevant recent data are available in the docket, for convenience the key relevant data are repeated here, organized according to the factors identified in the 2013 guidance. As will be discussed below, the EPA finds that these data support the same boundaries of the Chicago area as the EPA promulgated in 2005.

Factor 1, Air quality: Although the data are insufficient to provide an adequately reliable indication of whether the air quality standards are being violated in the Chicago area, the data indicate that the highest concentrations are observed in Cook County. Therefore, the greatest potential for violations exists in Cook County, and the EPA may reasonably promulgate an unclassifiable area that identifies a planning area that includes Cook County and the area around Cook County that contributes to $PM_{2.5}$ concentrations in Cook County, so long as this area also includes the Chicago area locations with the potential to violate the standard.

The EPA agrees as a general matter that air quality has been improving in much of the Midwest, but that does not mean that Lake and Porter Counties are not contributing to any violation that may be occurring elsewhere in the Chicago area.

Factor 2, Emissions: For this factor, the EPA reviewed data from the 2011 National Emissions Inventory (NEI) version 1 (see *http://www.epa.gov/ttn/chief/net/2011inventory.html*). For each county in the area of analysis, the EPA examined the magnitude of county-level emissions reported in the NEI. These county-level emissions represent the sum of emissions from the following general source categories: point sources, non-point (i.e., area) sources, nonroad mobile, on-road mobile, and fires. The EPA also looked at the geographic distribution of major point sources of the relevant pollutants.[1] Significant emissions levels from sources in a nearby area indicate the potential for the area to contribute to monitored violations.

To further analyze area emissions data, the EPA also developed a summary of direct $PM_{2.5}$, components of direct $PM_{2.5}$, and precursor pollutants, which is available at *http://www.epa.gov/pmdesignations/2012standards/docs/nei2011v1pointnei2008v3county.xlsx*.

Evaluating the components of direct $PM_{2.5}$ and precursor gases can help identify specific sources or source types contributing to elevated concentrations at violating monitoring sites and thus assist in identifying appropriate area boundaries. In general, directly emitted particulate organic carbon (POC) and VOCs[2] contribute to $PM_{2.5}$ organic mass

[1] For purposes of this designations effort, "major" point sources are those whose sum of PM precursor emissions ($PM_{2.5}$ + NOx + SO_2 + VOC + NH_3) are greater than 500 tons per year based on NEI 2011v1.

[2] As previously mentioned, nearby VOCs are presumed to be a less important contributor to $PM_{2.5}$ OM than POC.

(OM); directly emitted EC contributes to $PM_{2.5}$ EC; NO_X, NH_3 and directly emitted nitrate contribute to $PM_{2.5}$ nitrate mass; SO_2, NH_3 and directly emitted sulfate contribute to $PM_{2.5}$ sulfate mass; and directly emitted crustal material and metal oxides contribute to $PM_{2.5}$ crustal matter. [3,4] The EPA believes that the quantities of those nearby emissions as potential contributors to the $PM_{2.5}$ violating monitors are somewhat proportional to the $PM_{2.5}$ chemical constituents in the estimated urban increment. Thus, directly emitted POC is more important per ton than SO_2, partially because POC emissions are already $PM_{2.5}$ whereas SO_2 must convert to $PM_{2.5}$ and not all of the emitted SO_2 undergoes this conversion.

This review of emissions information addresses annual emissions rather than seasonal emissions for several reasons. First, emissions of significant pollutants are relatively constant throughout the year, so that there are insufficient seasonal emission variations to warrant a season-by-season review. Second, as noted above, except for the seasonal variations in nitrate concentrations, the composition of the urban increment appears to be relatively constant throughout the year. The cold month concentrations of nitrate are linked to cold month emissions of NOx, but warm month emissions of NOx are also significant due to their contribution to the photochemical reactions that form secondary particulate matter. For these reasons, the EPA analyzed annual emissions and concluded that analysis of seasonal emissions was unnecessary.

Table 1 provides a county-level emissions summary (i.e., the sum of emissions from the following general source categories: point sources, non-point (i.e., area) sources, nonroad mobile, on-road mobile, and fires) of directly emitted $PM_{2.5}$ and precursor species for the county with the violating monitoring site and nearby counties considered for inclusion in the Chicago area. Table 2 summarizes the directly emitted components of $PM_{2.5}$ for the same counties in the area of analysis for the Chicago area.

Table 1. County-Level Emissions of Directly Emitted $PM_{2.5}$ and Precursors (tons/year)

County	NH3	NOX	$PM_{2.5}$	SO2	VOC
Cook Co, IL	3307	108980	14387	16883	87924
Lake Co, IN	976	37838	6539	24464	16249
Will Co, IL	1694	28003	5646	34592	14309
Du Page Co, IL	751	23194	2731	566	19215
Lake Co, IL	623	20107	3197	10747	19148
Porter Co, IN	2852	17222	3737	16745	6283

[3] *See*, Seinfeld J. H. and Pandis S. N. (2006) *Atmospheric Chemistry and Physics: From Air Pollution to Climate Change*, 2nd edition, J. Wiley, New York. See also, Seinfeld J. H. and Pandis S. N. (1998) *Atmospheric Chemistry and Physics: From Air Pollution to Climate Change*, 1st edition, J. Wiley, New York.

[4] USEPA Report (2004), The Particle Pollution Report: Current Understanding of Air Quality and Emissions through 2003, found at: *http://www.epa.gov/airtrends/aqtrnd04/pm.html*.

Kane Co, IL	994	11808	2068	290	9761
Jasper Co, IN	2955	9960	2041	19513	2872
La Porte Co, IN	1832	8069	1945	13419	5016
La Salle Co, IL	1895	7680	2932	713	5024
Mc Henry Co, IL	1116	6605	1494	130	5845
Kenosha Co, WI	1228	6493	1197	1029	4249
Kankakee Co, IL	1315	4325	1777	163	3859
Grundy Co, IL	688	3780	1158	157	2263
Kendall Co, IL	745	3065	964	56	3191

Key:
NH3 – Ammonia
NO_X – Nitrogen Oxides
PM2.5 – Directly emitted $PM_{2.5}$
SO2 – Sulfur Dioxide
VOC – Volatile Organic Compounds

Table 2 breaks down the direct $PM_{2.5}$ emissions value from Table 1 into their components. Table 2 summarizes the directly emitted components of $PM_{2.5}$ for the same counties in the area of analysis for the Chicago area.

Table 2. County-Level Emissions for Components of Directly Emitted $PM_{2.5}$ (tons/year) [5]

County, State	POM	EC	PSO4	PNO3	Crustal	Residual	Direct
Cook Co, IL	4538	2695	447	51	2675	3982	14387
Lake Co, IN	1343	763	771	32	1488	2143	6539
Will Co, IL	1033	665	339	14	1548	2047	5646
Du Page Co, IL	1178	658	55	11	326	503	2731
Lake Co, IL	982	498	108	10	669	931	3197
Porter Co, IN	792	610	218	26	954	1137	3737
Kane Co, IL	682	380	32	7	463	504	2068
Jasper Co, IN	284	110	90	2	732	824	2041
La Porte Co, IN	511	207	60	3	553	611	1945
La Salle Co, IL	551	198	112	6	1101	964	2932
Mc Henry Co, IL	456	222	19	4	399	394	1494

[5] Data are based on the 2011 and 2018 Emissions Modeling Platform Data Files and Summaries (*ftp://ftp.epa.gov/EmisInventory/2011v6/v1platform*) available at: *http://www.epa.gov/ttn/chief/emch/index.html#2011* (accessed 02/26/14).

Kenosha Co, WI	622	130	26	2	190	226	1196
Kankakee Co, IL	446	141	16	3	660	511	1777
Grundy Co, IL	231	115	27	3	376	406	1158
Kendall Co, IL	219	108	12	3	329	293	964

Key:
PNO3 – Primary Nitrate
PSO4 – Primary Sulfate
EC – Elemental Carbon
POM – Primary Organic Matter
Crustal – Crustal Material

Using the previously described relationship between directly emitted and precursor gases and the measured mass to evaluate data presented in Tables 1 and 2, the EPA identified the following components warranting additional review: directly emitted organic matter, elemental carbon, NOx, and SO_2. The EPA then looked at the contribution of these constituents of interest from each of the counties included in the area of analysis as shown in Tables 3a-d.

Table 3a. County-Level Particulate Organic Matter Emissions (tons/year)

State	County	POM	% of Area	Cum %
Illinois	Cook, IL	4538	33%	33%
Indiana	Lake, IN	1343	10%	42%
Illinois	DuPage, IL	1178	8%	51%
Indiana	Will, IL	1033	7%	58%
Illinois	Lake, IL	982	7%	65%
Illinois	Porter, IN	792	6%	71%
Illinois	Kane, IL	682	5%	76%
Wisconsin	Kenosha Co	622	4%	81%
Illinois	LaSalle, IL	551	4%	85%
Indiana	La Porte, IN	511	4%	88%
Indiana	McHenry, IL	456	3%	91%
Illinois	Kankakee, IL	446	3%	95%
Illinois	Jasper, IN	284	2%	97%
Illinois	Grundy, IL	231	2%	98%
Illinois	Kendall, IL	219	2%	100%

Table 3b. County-Level Elemental Carbon Emissions (tons/year)

County	EC	% of Area	Cum %
Cook, IL	2695	36%	36%
Lake, IN	763	10%	46%
Will, IL	665	9%	55%
DuPage, IL	658	9%	64%
Porter, IN	610	8%	72%
Lake, IL	498	7%	79%
Kane, IL	380	5%	84%
McHenry, IL	222	3%	87%
La Porte, IN	207	3%	89%
LaSalle, IL	198	3%	92%
Kankakee, IL	141	2%	94%
Kenosha, WI	130	2%	96%
Grundy, IL	115	2%	97%
Jasper, IN	110	1%	99%
Kendall, IL	108	1%	100%

Table 3c. County-Level Nitrogen Oxides Emissions (tons/year)

County	NO_X	% of Area	Cum %
Cook, IL	108980	37%	37%
Lake, IN	37838	13%	49%
Will, IL	28003	9%	59%
DuPage, IL	23194	8%	67%
Lake, IL	20107	7%	73%
Porter, IN	17222	6%	79%
Kane, IL	11808	4%	83%
Jasper, IN	9960	3%	87%
La Porte, IN	8069	3%	89%
LaSalle, IL	7680	3%	92%
McHenry, IL	6605	2%	94%
Kenosha, WI	6493	2%	96%
Kankakee, IL	4325	1%	98%
Grundy, IL	3780	1%	99%
Kendall, IL	3065	1%	100%

Table 3d. County-Level Sulfur Dioxide Emissions (tons/year)

County	SO2	% of Area	Cum %
Will, IL	34592	25%	25%
Lake, IN	24464	18%	42%
Jasper, IN	19513	14%	56%
Cook, IL	16883	12%	68%

Porter, IN	16745	12%	80%
La Porte, IN	13419	10%	90%
Lake, IL	10747	8%	98%
Kenosha, WI	1029	1%	99%
LaSalle, IL	713	1%	99%
DuPage, IL	566	0%	99%
Kane, IL	290	0%	100%
Kankakee, IL	163	0%	100%
Grundy, IL	157	0%	100%
McHenry, IL	130	0%	100%
Kendall, IL	56	0%	100%

In addition to reviewing county-wide emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors in the area of analysis, the EPA also reviewed emissions from major point sources located in the area of analysis. The magnitude and location of these sources can help inform nonattainment boundaries. Table 4 provides facility-level emissions of direct $PM_{2.5}$, components of direct $PM_{2.5}$, and precursor pollutants (given in tons per year) from major point sources located in the area of analysis for the Chicago area. Table 4 also shows the distance from the facility to the DV monitor for the area.

Table 4. NEI 2011 v1 Point Source Emissions (tons/year)

County	Facility Name	Distance to Monitor (mi)	NH3	NOx	PM 2.5	SO2	VOC	Total
Cook, IL	Corn Products International Inc (031012ABI)	13	1	665	463	1,569	511	3,208
Cook, IL	Fisk Electric Generating Station (031600AMI)	14	0	1,098	199	4,133	1	5,432
Cook, IL	OHare Airport (ORD)	2		5,261	139	578	961	6,939
Cook, IL	Midway Airport (MDW)	14		1,150	22	133	195	1,499
Cook, IL	Ford Motor Co (031600AAR)	26	1	18	27	0	650	696
Cook, IL	Saint-Gobain Containers Inc (031069AAI)	26	1	412	78	158	21	670
Cook, IL	Crawford Electric Generating Station (031600AIN)	12	0	1,893	281	6,545	1	8,721
Cook, IL	Koppers Inc (031300AAJ)	12	1	115	4	857	106	1,083
Grundy, IL	Equistar Chemicals LP (063800AAC)	45	0	549	178	19	454	1,200

County	Facility Name	Distance to Monitor (mi)	NH3	NOx	PM 2.5	SO2	VOC	Total
Kankakee, IL	Natural Gas Pipeline Co of America (091811AAB)	65	0	495	10	0	32	537
Lake, IL	Waukegan Electric Generating Station (097190AAC)	29	1	2,563	718	9,931	2	13,214
La Salle, IL	Pilkington North America (099825AAG)	68	0	625	107	303	10	1,045
La Salle, IL	Owens-Brockway Glass Container Inc (099490AAD)	76	0	308	65	138	22	533
La Salle, IL	Illinois Cement Co (099030AAZ)	76	3	897	32	89	32	1,052
Will, IL	Oxbow Midwest Calcining LLC (197803AAK)	23		145	130	7,003	0	7,278
Will, IL	Exxon Mobil Oil Corp (197800AAA)	41	207	1,720	249	1,317	429	3,922
Will, IL	Midwest Generation LLC (197809AAO)	35	1	6,314	1,391	17,034	5	24,745
Will, IL	Will County Electric Generating Station (197810AAK)	25	1	2,227	392	8,301	2	10,922
Will, IL	CITGO Petroleum Corp (197090AAI)	24	232	685	144	513	443	2,017
Jasper, IN	NIPSCO - R.M. SCHAHFER (00008)	68	1	7,367	747	19,352	161	27,627
Lake, IN	STATE LINE ENERGY LLC (00210)	26	1	7,005	412	8,044	83	15,544
Lake, IN	Indiana Harbor East (00316)	31	19	4,813	526	2,874	1,123	9,355
Lake, IN	MITTAL STEEL (ISG INDIANA HARBOR WEST) (00318)	31	14	1,601	711	860	84	3,270
Lake, IN	COKENERGY INC. (00383)	31			85	4,892		4,977
Lake, IN	BP PRODUCTS NORTH AMERICA, WHITING R (00003)	29	17	2,548	427	697	2,118	5,806
Lake, IN	ANR PIPELINE NAT GAS_CO ST. JOHN STATION (00069)	42		482	12	0	26	520
Lake, IN	INDIANA HARBOR COKE (00382)	31	17	859	154	1,898	2	2,930
Lake, IN	U S STEEL CO GARY WORKS (00121)	38	103	4,313	1,529	4,202	1,168	11,315
Lake, IN	CARMEUSE LIME INC (00112)	33		1,688	31	313	13	2,045

County	Facility Name	Distance to Monitor (mi)	NH3	NOx	PM 2.5	SO2	VOC	Total
La Porte, IN	NIPSCO - MICHIGAN CITY (00021)	53	24	1,433	388	13,353	88	15,287
Porter, IN	ArcelorMittal Burns Harbor (00001)	44	29	8,289	2,065	13,843	497	24,723
Porter, IN	NIPSCO - BAILLY STATION (00002)	45	20	1,975	187	2,560	67	4,809
Kenosha, WI	Wisconsin Electric Power Pleasant Prairie Power Plant (230006260)	40	636	2,498	130	928	124	4,316

The commenter observes that the State Line plant shut down in 2012. Although the commenter has not provided evidence as to whether this shutdown is permanent or enforceable, the EPA has reviewed this information. The EPA notes that other facilities (such as the ArcelorMittal Burns Harbor facility) in Lake and Porter Counties have greater emissions, and the EPA concludes that emissions even with that plant shutdown are sufficient to conclude that Lake and Porter Counties are a contributing portion of the Chicago area.

The EPA also evaluated the population and vehicle use characteristics and trends of the area as indicators of the probable location and magnitude of non-point source emissions. Rapid population growth in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include the county associated with area source and mobile source emissions as part of the nonattainment area. Table 5 shows the 2000 and 2010 population, population growth since 2000, and population density for each county in the area.

Table 5. Population Growth and Population Density.

County	Population 2000	Population 2010	% Change from 2000	Land Area (Sq. Miles)	Population Density (per Sq. Mile)	% of Area	Cumulative %
Cook, IL	5,376,741	5,199,377	-3.3%	946	5,498	54%	54%
DuPage, IL	904,161	918,186	1.6%	334	2,752	9%	63%
Lake, IL	644,356	704,303	9.3%	448	1,574	7%	70%
Will, IL	502,266	678,883	35.2%	837	811	7%	77%
Kane, IL	404,119	516,034	27.7%	520	992	5%	83%
Lake, IN	484,564	496,112	2.4%	497	998	5%	88%
McHenry, IL	260,077	309,223	18.9%	604	512	3%	91%
Kenosha, WI	149,577	166,632	11.4%	273	611	2%	93%
Porter, IN	146,798	164,565	12.1%	418	394	2%	94%
Kendall, IL	54,544	115,257	111.3%	321	360	1%	96%
La Salle, IL	111,509	113,816	2.1%	1,135	100	1%	97%
Kankakee, IL	103,833	113,502	9.3%	677	168	1%	98%
LaPorte, IN	110,106	111,432	1.2%	598	186	1%	99%
Grundy, IL	37,535	50,103	33.5%	420	119	1%	100%
Jasper, IN	30,043	33,531	11.6%	560	60	0%	100%

Source: U.S. Census Bureau population estimates for 2000 and 2010

Table 6. 2011 VMT for the Chicago Area.

	2011 VMT	% of Area	Cum. %
County	**Total**		
Cook, IL	31,705,270,056	45%	45%
DuPage, IL	8,059,051,190	11%	57%
Will, IL	5,518,889,913	8%	64%

	2011 VMT	% of Area	Cum. %
County	**Total**		
Lake, IL	5,436,289,715	8%	72%
Lake, IN	4,664,891,193	7%	79%
Kane, IL	3,547,189,906	5%	84%
McHenry, IL	2,106,689,997	3%	87%
Porter, IN	1,836,723,893	3%	89%
La Porte, IN	1,702,002,112	2%	92%
La Salle, IL	1,333,020,018	2%	94%
Kenosha, WI	1,313,367,247	2%	96%
Kankakee, IL	969,019,995	1%	97%
Kendall, IL	768,299,498	1%	98%
Jasper, IN	710,369,578	1%	99%
Grundy, IL	693,739,990	1%	100%
	70,364,814,301		

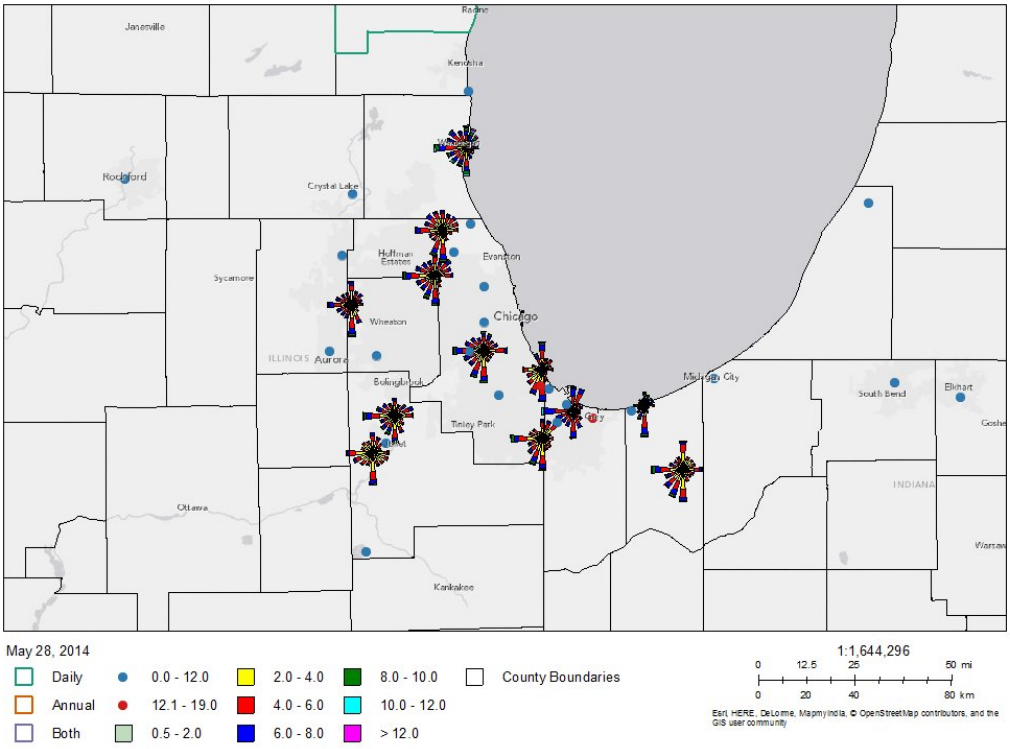
Factor 3: Meteorology

The EPA evaluated available meteorological data to determine how meteorological conditions, including, but not limited to, weather, transport patterns, and stagnation conditions, could affect the fate and transport of directly emitted particulate matter and precursor emissions from sources in the area of analysis. The EPA used two primary tools for this assessment: wind roses and kernel density estimation (KDE). When considered in combination with area $PM_{2.5}$ composition and county-level and facility emissions source location information, wind roses and KDE can help to identify nearby areas contributing to violations at violating monitoring sites.

Wind roses are graphic illustrations of the frequency of wind direction and wind speed. Wind direction can indicate the direction from which contributing emissions are transported; wind speed can indicate the force of the wind and thus the distance from which those emissions are transported. The EPA constructed wind roses from hourly

observations of wind direction and wind speed using 2009-2012 data from National Weather Service locations archived at the National Climate Data Center.[6] When developing these wind roses, the EPA also used wind observations collected at meteorological sampling stations collocated at air quality monitoring sites, where these data were available. Figure 1 shows wind roses that the EPA generated from data relevant in the Chicago area.

Figure 1. Wind Roses in the Chicago Area



As shown in Figure 1, while winds from the west and south are somewhat more frequent than winds from other directions, all directions have sufficient frequency of winds that emissions in all directions may be considered to contribute to violations at the violating monitor.

[6] *ftp.ncdc.noaa.gov/pub/data/noaa* or *http://gis.ncdc.noaa.gov/map/viewer/#app=cdo&cfg=cdo&theme=hourly&layers=1&node=gis* Quality assurance of the National Weather Service data is described here: *http://www1.ncdc.noaa.gov/pub/data/inventories/ish-qc.pdf*

Factor 4: Geography/topography

To evaluate the geography/topography factor, the EPA assessed physical features of the area of analysis that might define the airshed and thus affect the formation and distribution of $PM_{2.5}$ concentrations over the area. The Chicago area does not have any geographical or topographical barriers significantly limiting air pollution transport within its airshed. Therefore, this factor did not play a significant role in this evaluation.

Factor 5: Jurisdictional boundaries

In defining the boundaries of the intended Chicago nonattainment area, the EPA considered existing jurisdictional boundaries, which can provide easily identifiable and recognized boundaries for purposes of implementing the NAAQS. Existing jurisdictional boundaries often signify well recognized boundaries that the state can easily administer and for which the state has the necessary legal authority for carrying out air quality planning and enforcement functions. Examples of such jurisdictional boundaries include existing/prior nonattainment area boundaries for particulate matter, county lines, air district boundaries, township boundaries, areas covered by a metropolitan planning organization, state lines, and Reservation boundaries, if applicable. Where existing jurisdictional boundaries were not adequate or appropriate to describe the nonattainment area, the EPA considered other clearly defined and permanent landmarks or geographic coordinates for purposes of identifying the boundaries of the intended designated areas.

The Chicago area was previously designated nonattainment for the 1997 annual $PM_{2.5}$ NAAQS. The EPA's intended nonattainment area for the 2012 NAAQS is identical to area that was designated nonattainment for the 1997 NAAQS. Furthermore, the Illinois portion of the EPA's intended nonattainment area matches the identical Illinois recommendations with respect to both the 2012 NAAQS and the 1997 NAAQS. On the other hand, the area within Indiana that the EPA designated nonattainment for the 1997 standard exceeded Indiana's recommendation for that standard (by including Porter County in addition to Lake County) and differs by two counties from Indiana's recommendation that the nonattainment area for the 2012 NAAQS include no area within Indiana.

Recent Chicago nonattainment areas for $PM_{2.5}$ and for ozone have included the two townships in Grundy County and the one township in Kendall County that are included in the EPA's intended 2012 $PM_{2.5}$ NAAQS nonattainment area. Townships are well established and well recognized jurisdictional boundaries in Illinois, and so the use of these county subdivisions as boundaries for the nonattainment should provide for suitable ease of administration of nonattainment area requirements. These townships reflect the more urbanized portions of these otherwise relatively rural counties, and inclusion of these townships is consistent with Illinois' recommendations and provides for a definition of the nonattainment area that is consistent with other nonattainment area boundaries for other NAAQS.

This information demonstrates that a review of the most recent available information on the five factors identified in the 2013 guidance in accordance with that guidance supports defining the Chicago area as having the same boundaries as the EPA established in 2005.

Comment: We believe that while the EPA and Illinois the EPA (IEPA) work to determine the cause and extent of any invalid $PM_{2.5}$ data and appropriate remedies, there is sufficient technical evidence to support the exclusion of Grundy County townships from the Chicago $PM_{2.5}$ nonattainment area. We ask that as you move forward with IEPA to clarify Illinois nonattainment boundaries, you exclude portions of Grundy County (specifically the townships of Aux Sable and Goose Lake) from consideration as part of the nonattainment area. Inclusion of counties that do not materially contribute to nonattainment can have severe negative economic consequences for that county. In addition to the potential of costly new regulations that do not improve air quality at the violating monitor, employers and manufacturers evaluating areas consider an area's attainment/non-attainment classification before making decisions on expansions or new facilities.

In the case of Grundy County, IEPA's recommendation appears to have weighted meteorology, specifically prevailing wind direction, over all other factors. IEPA and the EPA should now reexamine the data, weight monitored air quality data and emissions-related data more appropriately, and remove Grundy County from any further nonattainment classification discussion.

While the EPA has declared much if not all of IEPA's $PM_{2.5}$ data invalid for technical reasons having to do with data collection and processing, this does not necessarily mean that the data is wholly inaccurate. IEPA's data tracks regional levels and trends observed by the CASTNET monitors in Illinois. For this reason, we believe that our earlier data analysis provided to IEPA in November 2013 is still appropriate to consider.

Due to its small population, limited urban area, and moderate point source emissions potential, Grundy County is not required to have a $PM_{2.5}$ monitor located in the county. However, adjacent Will County, which is downwind of Grundy County particularly on days when the violating Chicago monitor experienced higher $PM_{2.5}$ levels, has two monitors. The annual average levels experienced by these monitors can be used to understand whether high $PM_{2.5}$ levels are being emitted in Grundy County and making their way through transport to the violating monitor. The Joliet monitor in Will County downwind of Grundy County shows an annual average concentration of 11 $\mu g/m^3$, which is below the new 12 $\mu g/m^3$ NAAQS level. The Braidwood monitor, located immediately adjacent to Grundy County, shows an annual average concentration of 9.9 $\mu g/m^3$. It should be noted that the Joliet monitor in Will County is located in close proximity to a large electric generating unit, or EGU, which is much more likely to contribute to the annual average concentration at this monitor rather than the much smaller, more distant emissions from Grundy County. Both the Joliet and Braidwood monitors have shown improved air quality in recent years. In the three-year period ending in 2009, the last period that the Joliet monitor exceeded the new NAAQS, its annual average was 12 $\mu g/m^3$. It has continued to show declining $PM_{2.5}$ concentrations, and as mentioned above,

most recently measured 11 μg/m^3. The Braidwood monitor last exceeded the NAAQS in the 3-year period ending in 2004. $PM_{2.5}$ concentrations have also decreased at this monitor, from 10.4 μg/m^3 in the three-year period ending in 2009 to 9.9 μg/m^3 in the most recent 3-year period. This analysis demonstrates suggests that the air flowing from Grundy County towards the Chicago region has some of the lowest $PM_{2.5}$ concentrations in the region. Furthermore, trends in $PM_{2.5}$ levels at these two closest monitors to Grundy County show decreasing amounts of $PM_{2.5}$ levels, which supports this assertion. Additionally, predicted concentrations of $PM_{2.5}$ for a portion of Grundy County, and several adjacent counties, represent some of the predicted lowest $PM_{2.5}$ concentration in the Midwest.

IEPA staff have over-relied on one factor—wind direction—in the five factor analysis. The exceedance concentrations experienced by one monitor in the Chicago region do not have a significant contribution from emissions in a county like Grundy that is predicted to experience low $PM_{2.5}$ levels based on regional air quality monitors. Rather, they are much more likely to be emitted closer to the source of the sole exceeding monitor.

From the available air quality data, then, it does not appear that emissions from Grundy County, as they may make their way toward the violating monitor, contribute in any material way to high $PM_{2.5}$ levels at their closest monitors. We recognize that a recent technical systems audit of IEPA's monitoring program has invalidated much if not all of their recent $PM_{2.5}$ monitoring data. However, Illinois also has Clean Air Status and Trends Network (CASTNET) monitors in Bondville (located near Champaign) and in Stockton (west of Chicago) which have independent analysis procedures, and which have not been invalidated. The Clean Air Status and Trends Network (CASTNET) is a national air quality monitoring network designed to provide data to assess trends in air quality, atmospheric deposition, and ecological effects due to changes in air pollutant emissions. CASTNET provides long-term monitoring of air quality in rural areas to determine trends in regional atmospheric nitrogen, sulfur, and ozone concentrations and deposition fluxes of sulfur and nitrogen pollutants in order to evaluate the effectiveness of national and regional air pollution control programs. A review of national CASTNET data indicates that significant reductions in SO_2, SO_4, HNO_3, total NO_3, and NH_4 have been realized in the Eastern US. For example, between 1990-1992 and 2010-2012, SO_2 concentrations were reduced from 8.9 μg/m^3 to 2.1 μg/m^3, a 76% reduction. Therefore, we believe that an analysis of CASTNET recent measurements and trends lends independent support to the IEPA data showing low predicted $PM_{2.5}$ emissions and precursors in rural areas such as Grundy County. Both Illinois CASTNET monitors demonstrate an observed downward trend (air quality improvement) in combined quarterly sulfate and nitrate from 2001 through 2013. This trend is consistent with average and maximum annual and 24-hr $PM_{2.5}$ concentration trends seen in other monitoring networks. Emissions of $PM_{2.5}$ and its precursors and constituents from Grundy County represents the lowest category of emissions of any of the counties being considered for inclusion in the nonattainment area. In addition, according to 2011 NEI data, consistent with measured trends in constituent, precursor and $PM_{2.5}$ concentrations, emissions of key constituent and precursors of $PM_{2.5}$, as well as direct emissions of $PM_{2.5}$ are lower in 2011 than in 2008, in some cases dramatically so.

Emissions from key constituents, precursors and direct $PM_{2.5}$ have decreased significantly. A slight increase in SO_2 emissions is insignificant in the context of the total overall tons per year decrease demonstrated by the other emissions categories and in context of the overall SO_2 emissions inventory for the proposed non-attainment area (Grundy County's SO_2 emissions account for approximately 0.08% of the nine-county total SO_2 emissions of 63,110.10 tpy). Furthermore, as IEPA notes in its designation recommendation, Grundy County contributes only 1.7% to the total emissions in the nine-county regions' $PM_{2.5}$ total. This updated information further supports our conclusion that emissions from Grundy County are an extremely small fraction of the total emissions in the proposed nonattainment area. The significant decreases in these emissions from 2008 to 2011 further supports this conclusion.

In light of the decreasing emissions from 2008 to 2011, we contend the IEPA's analyses of emission related factors do not support inclusion of Grundy County townships in a Chicago $PM_{2.5}$ nonattainment area. Emissions-related factors are intended to place context around the emissions data, such as whether an emissions category is expected to grow in the future. A strong pattern of growth in population, vehicle miles traveled, industrial expansion, or nonroad transit might bolster an argument that a county with relatively insignificant current emissions should be included in a nonattainment area. In the case of Grundy County, analysis of emission-related factors do not make this case.

IEPA's analysis first discusses population density. In the case of Grundy County, the 2010 population density was 119 people per square mile. In Cook County, the county with the sole violating monitor, the population density is 5,491 persons per square mile. The 50,063 residents of Grundy County make up 0.05% of the region's total population, the smallest fraction of any county being considered for inclusion in the nonattainment area. By 2012, the Grundy County population density increased by one person per square mile. By contrast, Cook County added 39 people per square mile.

The document then provides population growth projections between 2000 and 2030. While Grundy County is predicted to add between 10,000-50,000 persons over that time period, four other counties in the region are predicted to add over 200,000 persons ***each.*** Clearly population growth in the region will not be driven by projected new inhabitants of Grundy County.

The document then turns to VMT per county, and further breaks out the VMT for Aux Sable and Goose Lake townships. The combined VMT for those two townships represents 0.56% of that of Cook County, the county with the sole violating monitor. This comparison does not even include the VMT from the other counties being considered for inclusion in the region. Again, Grundy County has the smallest VMT of any county in the proposed nonattainment area. Grundy County does have a moderate percentage of its residents commuting out of the county for work. However, when one is dealing with the commuting habits of a county with 50,063 total inhabitants, the impact of their commute is dwarfed by the emissions and VMT of inhabitants of far more populous counties, such as Cook County, which has over 5 million residents. Therefore, the relative weight one gives to commuting patterns for Grundy County, especially as emissions from motor

vehicles continues to decline as a result of federal fuel and engine standards, should be extremely small.

Wind roses and summary back trajectory data presented in the IEPA document show that on high $PM_{2.5}$ days, winds most frequently originate in the South, South/South West, and South West sectors, which comprise Cook, Kankakee, Will and Grundy Counties. Interestingly, on the two days when the highest $PM_{2.5}$ concentrations were experienced at the violating monitor, daily back trajectories demonstrate that wind directions were not from this sector. IEPA makes a case that winds were from a sector that includes Grundy County townships during several high $PM_{2.5}$ days. However, it appears to weight that evidence far more strongly than it does the more compelling ambient air quality data and emissions and emissions related data. On some high $PM_{2.5}$days, air parcels travel through Grundy County, and then through Will County and Cook County to reach the sole violating monitor some 50 miles downwind. But all available evidence suggests that the air that is being transported from Grundy County on those days does not contain a significant amount of $PM_{2.5}$, its constituents or precursors. Therefore, meteorology, when viewed in the appropriate context with ambient air data and emissions data, should not be given the pre-eminent weight that it apparently has been given in this analysis.

Geography and topography are not expected to be key drivers in the nonattainment boundary designation analysis.

Grundy County is not contained in the Chicago Metropolitan Agency for Planning (CMAP). This organization is responsible for regional planning, including transportation and environmental planning. It is the designated Metropolitan Planning Organization (MPO) for the region, and is responsible for transportation planning to achieve transportation conformity with the State Implementation Plan. Grundy County's lack of inclusion in the organization charged with transportation, environmental planning, and the transportation conformity analysis creates a jurisdictional incompatibility that both highlights its lack of contribution of significant motor vehicle emissions to the region's total, and its inability to participate in future transportation planning decisions in the region.

EPA Response: The EPA is designating the Chicago area as unclassifiable, not as nonattainment. Consequently, this designation will not create the "potential of costly new regulations" that the commenter fears, and the EPA presumes that a designation as unclassifiable does not significantly alter "decisions on expansions or new facilities" as compared to designation as attainment/unclassifiable. In any case, the EPA is presently obliged to determine boundaries of the Chicago area, an area that may or may not be violating the $PM_{2.5}$ standard, but if subsequent data show the existence of violations of the standard, the EPA will conduct a new review of the area that contributes to the violations that will not necessarily be the same as the area the EPA currently believes to represent the Chicago area. For that matter, the EPA is designating the entire State of Illinois as unclassifiable, so the EPA believes that Grundy County should be designated unclassifiable regardless of whether portions of the county are or are not judged to be part of the Chicago unclassifiable area.

The commenter provides substantial useful information for evaluating the potential of Grundy County to contribute to violations of the $PM_{2.5}$ standard in the Chicago area. However, the EPA continues to believe that the relevant two townships in the county (Aux Sable and Goose Lake Townships) warrant being included in the Chicago unclassifiable area. Given the regional nature of $PM_{2.5}$ concentrations, the air quality in Grundy County and neighboring Will and Kankakee Counties is not a good indicator of the potential of emissions elsewhere in the Chicago area where violations are more likely occurring. The commenter acknowledges that winds are prone to carry emissions from Grundy County into Cook County and elsewhere in the Chicago area where the potential for violations of the $PM_{2.5}$ standard are greater, but the commenter argues that emissions in Grundy County are too low relative to emissions in other nearby counties to warrant including Grundy County as a contributing part of the Chicago area. The EPA acknowledges that the contributions of other nearby counties to potential violations in the Chicago area are likely to be greater than that of Grundy County, but the EPA believes that Grundy County has the potential for a sufficient impact on concentrations elsewhere in the area to warrant being designated as a contributing part of the Chicago unclassifiable area. The fact that Grundy County is not part of the Chicago Metropolitan Agency for Planning does not warrant excluding Grundy County as a contributing portion of the Chicago area. Nevertheless, as noted above, if the Chicago area is subsequently determined to be violating the $PM_{2.5}$ standard, the EPA and Illinois will reassess the appropriate boundaries of the area, including reassessing whether Grundy County should be designated as part of the area.

Comment: Indiana Department of Environmental Management (IDEM) believes that the certified, attaining 2011-2013 data collected by monitoring sites in Indiana's monitoring network within Lake and Porter Counties, IN, should be sufficient to designate Lake and Porter Counties as "attainment" versus the intended "unclassifiable" designation associated with the Chicago, IL area (including Lake and Porter Counties, IN) as indicated in the EPA's August 19, 2014 letter.

EPA Response: The EPA believes that areas designated as unclassifiable must include all locations that are contributing to concentrations that may be above the standard. The Chicago area may be violating the standard, and Lake and Porter Counties have sufficient emissions that are transported to relevant portions of the Chicago area with sufficient frequency to warrant designating these two counties as contributing to potential violations. That is, the EPA is designating a Chicago unclassifiable area that includes both those portions of the area that may or may not be violating the standard and those portions of the area (including Lake and Porter Counties) that would reasonably be expected to be contributing to a violation if in fact a violation is occurring.

3.2.4. EPA Region VI

Comment: Sierra Club states that for the reasons outlined in their comment letter, including the allegedly capricious nature of the 2011-2013 time period for the design value, the problems with the state's exceptional events requests, and the community based monitoring showing nonattainment levels of $PM_{2.5}$ in certain Houston

communities, the commenters respectfully oppose the designation of Houston as attainment and recommend a designation of nonattainment. Sierra Club states that the levels of $PM_{2.5}$ in the Houston area during the 2010-2012 three year period, and the dates evaluated by the State of Texas for its November 26, 2013 recommendation letter to the EPA, indicate that people in Houston are breathing unhealthy air. Despite the State's evaluation of air quality and exceptional events issues during 2010-2012, and Sierra Club's participation in that process and in particular the issue of exceptional events, Sierra Club asserts the EPA has inappropriately proposed to change the basis for the decision to the 2011-2013 three year period. Sierra Club states the selection of another three year period different than the one that the State of Texas evaluated for its recommendation follows a recent pattern by the EPA, and that the allegedly capricious nature of these kinds of changes is inappropriate and leads to poor policy. Sierra Club explains the Clean Air Act describes a particular process for designation decisions and the EPA should not deviate from that process in a capricious manner by selecting time periods to avoid nonattainment designations, and thus minimize its own workload or the workload of the states. Sierra Club states the nonattainment SIP process can bring important public health benefits in cities with poor air quality and avoiding workload or political pushback are poor reasons for selecting time periods for evaluation. Sierra Club contends the EPA should not shift this time period, or in the alternative, should allow another period of notice and comment to allow the public and the State to evaluate this new time period.

EPA Response: The EPA disagrees with the Sierra Club statement that using data from 2011 to 2013 is capricious in nature, is inappropriate and leads to poor policy. As stated on page 3 of the EPA's April 16, 2013 Memorandum from Gina McCarthy to Regional Administrators: "We expect that in providing designations recommendations to the EPA by December 13, 2013, states and tribes will also review air quality data from 2010 to 2012. However, prior to EPA making final designations decisions, quality-assured, certified air quality monitoring data from 2013 may be available. If so, EPA's final designations decisions will be based on data from 2011 to 2013." This guidance memo was shared with the states and tribal governments and other stakeholders and made available to the public. The EPA has followed this policy of relying on the most recently available certified data in numerous initial area designations for multiple NAAQS, including most recently the area designations for the 2008 ozone NAAQS. The EPA believes that it is important to base area designation decisions on the most recently available certified monitoring data specifically for pollutants, such as $PM_{2.5}$, where the emissions inventories are trending upward or downward, signaling the potential for 3-year design values to shift above or below the level of the NAAQS. In the case of the Houston area, the emissions of the precursor pollutants oxides of nitrogen and sulfur dioxide are declining, and we see these emissions trends reflected in the monitored ambient concentrations.

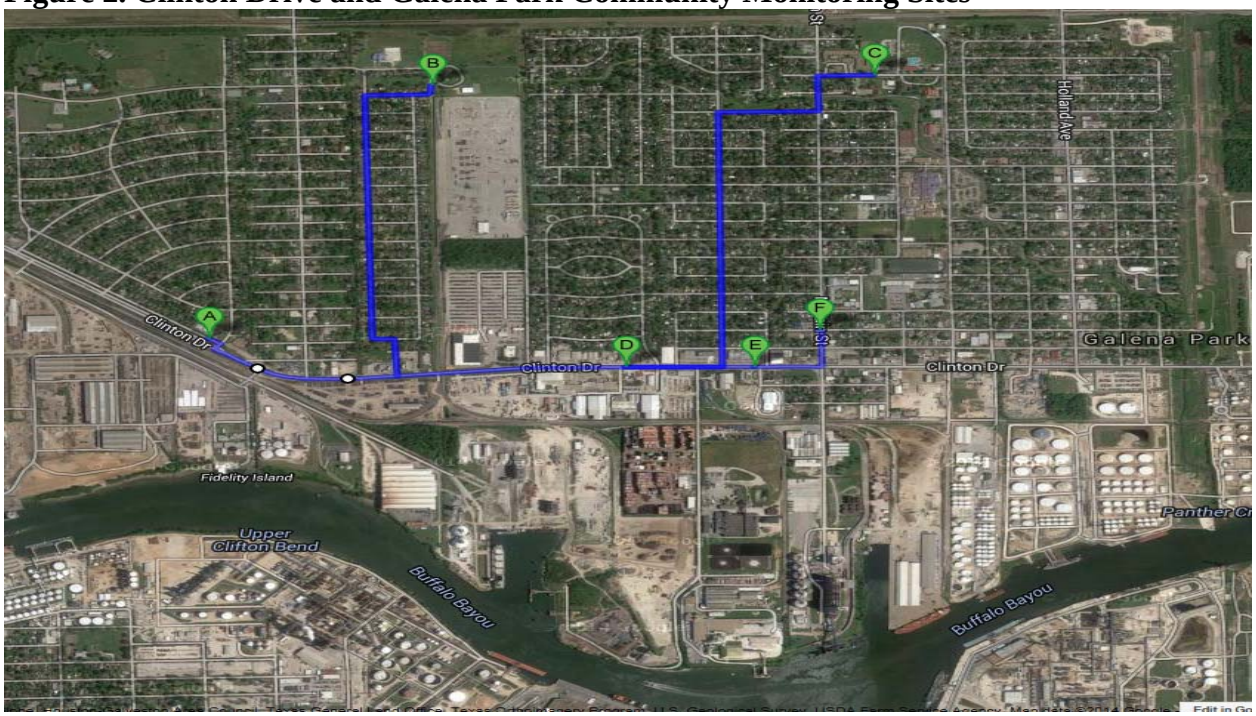
Comment: The commenters provided an extensive set of concerns about the TCEQ's use of exceptional events data exclusion requests**.**

EPA Response: The EPA based its intended and final area designation for the Houston area on certified and quality-assured monitoring data for the period from 2011 to 2013. The 3-year design value on which we based our decision was calculated without excluding dates flagged as exceptional events. Therefore, the comment is moot.

Comment: The commenters questioned whether the monitoring data obtained at the Clinton Drive Monitor site is representative for the Galena Park community and submitted monitoring data gathered from five monitoring sites operated by Air Alliance Houston at various locations within the community (see Figure 2 below). The commenters believe the Air Alliance monitoring data demonstrated that the Clinton Drive monitor was not representative of area air quality and that the area could be in violation of the NAAQS.

EPA Response: We first note that we must consider all valid data within the relevant 3-year time frame that is collected in conformance with the Federal Reference Methods and siting requirements in our designation decision. As discussed below, the Clinton Drive monitoring site meets these requirements and therefore, must be considered. The location of the Clinton Drive monitor conforms to all applicable siting criteria, as set forth in 40 CFR Part 58, Appendix D and E, and has been approved by the EPA as part of TCEQ's most recent Annual Monitoring Network Plan and 5-year Monitoring Network Assessment. The Clinton Drive monitor is approximately 1.5 miles from Galena Park, as shown in Figure 2. At Clinton Drive, TCEQ operates $PM_{2.5}$ Federal Reference Method (FRM) and non-FRM continuous monitors.

Figure 2. Clinton Drive and Galena Park Community Monitoring Sites



Note: Clinton Drive Monitor (Location A), and Galena Park Monitors (Locations B – F).

With regard to whether the data collected by Air Alliance Houston indicates a violation, Region 6 evaluated the monitoring data submitted by the commenter. Approximately 29 discrete samples were collected in the Galena Park community over a 16-month period from May 2012 through September 2013, thus the data is limited in scope compared to the data collected by regulatory monitors over a 3-year period and subject to data completion criteria. Additionally, these data were also not monitored and collected according to the requirements of the federal reference method for $PM_{2.5}$ found in 40 CFR part 50, Appendix L. Our designations must be based on valid 3-year design values, and even if the monitoring data submitted by the commenters fully complied with the siting and data quality criteria, there are not sufficient data on which to derive a valid, 3-year design value.

Therefore, these data do not affect our decision to designate the area as Unclassifiable/ Attainment.

3.2.5. EPA Region IX

Comment: Nevada Bureau of Air Quality Planning has received the EPA's August 19, 2014, letter indicating the intended designation of unclassifiable/attainment for the entire state of Nevada. Nevada agrees with this intended designation and requests that final designations subdivide the state according to hydrographic areas.

EPA Response: The EPA appreciates the commenters' support and is designating areas in Nevada based on hydrographic areas.

Comment: The California Air Resources Board (CARB) appreciates the time, effort, and collaborative approach U.S. EPA staff took to identify the proposed nonattainment areas as well as surrounding areas that may contribute to the high measured values. CARB also notes that the extensive analysis contained in the preliminary Technical Support Document matches CARB's recommendations for $PM_{2.5}$ nonattainment areas in the State and appropriately captures the areas of high measured $PM_{2.5}$ and the surrounding areas from which emissions can contribute to the high measured levels. CARB looks forward to continued collaboration with U.S. EPA in protecting public health for all Californians.

EPA Response: The EPA appreciates the commenters' support.

Comment: The Pechanga Band of Luiseño Mission Indians submits a revised recommendation of "unclassifiable/attainment" based on complete, certified 2011-2013 monitoring data that indicate that areas of Indian country are attaining the 2012 annual $PM_{2.5}$ standard. The Tribe also requests consultation regarding final designations.

EPA Response: The EPA appreciates the updated and revised recommendation from the Pechanga tribe. The EPA's preliminary review of monitoring data agrees with the Tribe's conclusions and the EPA agrees with the Tribe's revised recommendation to designate

their portion of Indian country as "unclassifiable/attainment" for the 2012 annual $PM_{2.5}$ standard.

Comment: The Soboba Band of Luiseño Indians requests consultation to address questions related to the technical analyses included in the preliminary California Technical Support Document that support inclusion of the Soboba Indian Reservation in the Los Angeles-South Coast Air Basin nonattainment area for the 2012 annual $PM_{2.5}$ standard.

EPA Response: The EPA welcomes the Soboba tribe's request for consultation and has initiated consultation with the tribe.

3.2.6. EPA Region X

Comment: The December 6, 2013, state recommendation letter from Idaho Department of Environmental Quality (IDEQ) to the EPA Region 10 showed that according to the 2012 standards, the Pinehurst monitor had not exceeded the standard. In August 2014, the EPA Region Administrator Dennis McLerran sent a letter to Governor Otter stating that the EPA is proceeding with intended initial area designations using quality-assured, certified air quality monitoring data from 2011-2013. The letter from the EPA further stated that after "extensive collaborative discussions with IDEQ, and consideration of other relevant technical information, including 2011-2013 air quality data and 2014 technical analyses, the EPA intends to designate a partial area of Shoshone County (limited to areas surrounding the towns of Pinehurst, Smelterville, and Kellogg) as non-attainment."

The commenter believes that this letter defied the Governor and IDEQ's recommendations, did not specifically state what was collaborated upon, and used a 2014 technical analysis which has either not been finalized or is not available to the public.

EPA Response: The EPA and IDEQ have worked together to review the data and develop the technical analyses in the West Silver Valley (WSV) Technical Support Document (TSD). The EPA's final 2012 Annual $PM_{2.5}$ NAAQS revision provided that, pursuant to section 107(d)(1) of the CAA, states were to submit initial designation recommendations by December 13, 2013 (78 FR 3086, 3250 Jan. 15, 2013). Such a designation recommendation would necessarily be based on air quality data from 2010-2012 because data for 2013 was not yet be available. The final rule also acknowledged, however, that if data from 2013 became available before the EPA finalized the area designations, the EPA's designation decision would be based on air quality data from 2011-2013, which are the most recent three consecutive years of data (78 FR 3259-51),

The WSV TSD was available to the public for review in its draft form, and was part of the rulemaking docket for the proposed area designations for the 2012 $PM_{2.5}$ Annual NAAQS. The TSD was finalized after consideration of comments received during the public process provided for the area designation. The purpose of proposing a draft

document as opposed to a final document was to provide an open and transparent process that allowed for meaningful input from both the state and the public at large.

Comment: The commenter states that pages 7, 29, and 31 of the Idaho TSD state include the design values based on 2010-2012 data, and that the figures will be updated in the final TSD with 2011-2013 data. The commenter believes that this will deprive the state and public from being able to adequately comment without a final document.

The commenter states that the technical analysis gives the West Silver Valley a 12.8 $\mu g/m^3$ design value after excluding only 4 days of exemptions due to exceptional events, and that while additional exceptional event days may exist, exclusion of those days could not lower the design value enough to amount to meet the standard. The commenter states that the EPA has left out 31 days that were requested by the IDEQ and that this could bring the design value down to 12.0 $\mu g/m^3$.

The commenter further states that the technical analysis includes data from surrounding *non*-regulatory monitors and areas outside of the Area of Concern, while only one other monitor is listed as being in the Area of Concern. The commenter states that charts in the TSD are complicated and difficult to read due to font-size and color choice. Finally, the commenter states that the analysis omits reference to any established or estimated $PM_{2.5}$ concentrations on either a mean or seasonal basis, or to short-term peak background levels $PM_{2.5}$, and points to a 2006 study in British Columbia, Canada, which the commenter is noteworthy for assessing true PM concentrations.

EPA Response: The figures referred to on pages 7, 29, and 31 were generated using a mapping tool that used the 2010-2012 design value as opposed to the 2011-2013 DV data. However, this did not affect the content and purpose of the figures in the TSD as they were used to for the purpose of depicting the area of analysis, population, and vehicle miles traveled respectively and did not reference or use the design value in the figures. The data underlying these figures did not change in the final TSD and several disclaimers were for maps generated using the tool that incorporated the 2010-2012 design value. As noted above, because the inclusion of these figures in the TSD was for informational purposes unrelated to the design value, the ability for the public to comment on the figures was unaffected by the mapping tool's reference the 2010-2012 design value.

The design value has been correctly calculated and Table 2a on page 10 of the Idaho TSD provides this information. The IDEQ submitted to the EPA four exceptional event days at the Pinehurst, Idaho monitor for concurrence. The EPA has concurred on all four of these submitted days and the resulting final 2011-2013 design value for the Pinehurst, ID monitor is 12.8 $\mu g/m^3$. The IDEQ has indicated that there are additional days that may potentially qualify as exceptional events days. However, both the EPA and IDEQ have independently confirmed that even if these additional potential exceptional events days were approved and their values were removed for purposes of calculating the design value, the monitor's design value for 2011-2013 would still be above the 12.0 $\mu g/m^3$ standard. Information supporting this conclusion may be found in the docket. The IDEQ

has indicated that it may submit additional exceptional event days for the EPA concurrence in the future.

The use of multiple monitors within the area of analysis, regulatory and non-regulatory, allows for a more detailed understanding of potential contributors to the violation registered at the Pinehurst monitor for 2011-2013. Detailed graphs and emissions inventories are important for understanding emissions sources in the nonattainment area. Unfortunately, this can cause difficulty with the color keys and overall complexity even though we attempt to make the documentation as readable as possible. In the document background emissions are discussed and considered through the urban increment, and seasonal and monthly emissions trends are essential to understand when emissions are affecting the monitor. The 2006 British Columbia cited by this commenter does not provide additional relevant information justifying a departure from the EPA's method of analysis for this annual $PM_{2.5}$ standard.

Comment: The commenter notes that the EPA's technical analysis for Illinois is just 8 pages, and does not agree with the Illinois Environmental Protection Agency's recommendation. The commenter states that the EPA has used its discretion in the area designation process, and that the West Silver Valley has been unfairly treated.

The commenter states that the EPA has identified that Residential Wood Stoves are the reason for non-attainment in the West Silver Valley. The commenter inquires about the contribution from fireplaces and identifies that fireplaces are not being considered in the upcoming regulations on strengthening the standards on "residential wood heaters".

The commenter states that most homes the WSV use fireplaces with inserts, and insinuates that the attainment plan is to replace wood heaters with new devices through a loan & tax credits. The commenter cites that they will be out of the EPA compliance in 5-7 years, and that many wood heat manufacturers may not be able to meet the requirements. http://www.newsmax.com/Newsfront/epa-wood-stoveban/2014/02/23/id/554234/

EPA Response: The EPA strives to maintain a nationally consistent process for designating areas when there is a new or revised air quality standard. The area designations require three consecutive years of certified air quality monitoring data. The technical analysis for Illinois was for a designation of "unclassifiable," due to pervasive problems affecting monitoring data in the entire state. These pervasive data problems prevented the EPA from being able to determine whether Illinois (and parts of adjacent states) met the NAAQS. Further details can be found elsewhere in this Response to Comments document. The same deficiencies were not present with respect to Idaho.

The WSV TSD identifies residential wood combustion as a leading contributor to exceedances of the standard. Residential wood heating encompasses a wide variety of home heating sources including, but not limited to woodstoves and fireplaces.

A common misconception is that the designations process addresses control strategies. For proposed nonattainment areas, this action only identifies the areas violating the NAAQS, or contributing to such nearby violations. Once the nonattainment area designation becomes finalized, the state and/or local air quality agency will work with the affected community to identify strategies to reduce the emissions in the finalized nonattainment areas. This would be part of the attainment plan development.

The EPA is only considering comments related to the proposed area designations for the 2012 Annual $PM_{2.5}$ NAAQS. The EPA accepted and is currently reviewing comments on the proposed NSPS for new woodstoves. This comment period is now closed. Information on this action can be found at the docket for Revised NSPS for new Residential Wood Heaters - EPA-HQ-OAR-2009-0734.

Comment: The commenter states that the EPA's views regarding the health impacts of wood heaters are based on only a handful of old, peer-reviewed studies. Furthermore, the commenter claims that none of these studies consider short-term human health impacts. The commenter states that the EPA does not use proper science, peer-reviewed studies, or cross-benefit analyses in the designations process.

EPA Response: Significant research forms the basis for the national ambient air quality standards prior to promulgation. The multiyear process includes planning, integrated science assessment, risk/exposure assessment, and policy assessment. For the 2012 $PM_{2.5}$ annual standard revision, the EPA initiated its review in June 2007. Between 2007 and 2011, the EPA prepared draft and final Integrated Science Assessments, Risk and Exposure Assessments, and Policy Assessments. Multiple drafts of all of these documents were subject to review by the public and were peer reviewed by the EPA's Clean Air Scientific Advisory Committee (CASAC).

All NAAQS are set to protect public health and the environment for all populations nationwide. The 2012 $PM_{2.5}$ standard was adopted in response to a court ruling that remanded the primary annual $PM_{2.5}$ standard to the EPA finding the Agency had failed to explain adequately why the standard provided the requisite protection from both short- and long-term exposures to fine particles, including protection for at-risk populations such as children. The resulting 2012 $PM_{2.5}$ annual NAAQS provides increased protection for children, older adults, persons with pre-existing heart and lung disease, and other at-risk populations against an array of $PM_{2.5}$ related adverse health effects that include premature mortality, increased hospital admissions and emergency department visits, and development of chronic respiratory disease.

All of the information generated from this process for the particulate matter standards is publicly available at http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_index.html.

Comment: The Idaho Department of Lands (IDL) concurs with many statements made by the EPA in the proposal, including with respect to topographical influences on $PM_{2.5}$ concentrations in and around the Pinehurst area. However, IDL believes any increase in

the non-attainment boundary from the existing PM_{10} boundary should be supported by technical data from multiple monitors exceeding the NAAQS.

The commenter prefers a boundary for the 2012 annual $PM_{2.5}$ nonattainment area that is coterminous with the existing PM_{10} boundary, and that thus would include a smaller portion of Shoshone County. The commenter questions the appropriateness of the proposed WSV boundary, specifically to the North of Interstate 90, and believes that the proposed boundary lacked sufficient supporting technical information:

"Pinehurst is in the center of a convergence zone of multiple large mountain drainages. The typical diurnal flow of air referenced in the EPA and DEQ studies do exist. One issue that Pinehurst has is a small pinch point on the North side of town where Interstate 90 passes over Pine Creek. This point hence the city of Pinehurst, commonly becomes a stagnant air mass because of the larger influential drainage of the South Fork of the Coeur d'Alene which is the Interstate 90 corridor to the East. This stagnancy in combination with local valley inversions creates a bottle neck for air flow.

"The times of high accumulation of particulates fall within the months of December, January and February. These are the months which cause the area to exceed the annual $PM_{2.5}$ standards. Focused community outreach during these periods of air stagnation would help to improve community education, support and reduce air quality degradation. There is insufficient technical data which supports the influence of $PM_{2.5}$ contributors outside of the Pine Creek drainage.

"The IDL believes it is reasonable to delay the implementation of the proposed boundary and increase monitoring for two years. This data would be able to provide the technical reference on making a more reliable decision on boundary placement. The standard changed in 2012, not the topography."

This commenter included data with their submission, including Wind Ninja modeling runs for diurnal flow, and wind roses for Pinehurst. The commenter concluded with a suggestion for:

"…the addition of three temporary smoke particulate monitors, one in the South Fork of the Coeur d'Alene River drainage in Smelterville, one in Kingston to the West of Pinehurst and one at the confluence of the West/ East Fork of Pine Creek, South of Pinehurst. Data from these three additional locations would be able to clearly define what the main influences are, where they come from and what the focus should be for increasing the health standards for Pinehurst Idaho."

EPA Response:
The EPA believes that the proposed nonattainment area boundary is appropriate based on a weight of evidence analysis that included multiple sophisticated modeling tools. The Wind Ninja modeling results submitted with this comment complement the suite of modeling results in this proposal, but do not contradict those results. It is important to point out that the area is in violation of an annual standard, so analyses are needed to address potential sources impacting the monitor throughout the full year rather than

focusing only on sources during the most impactful months for $PM_{2.5}$. Regardless of the PM_{10} boundary, modeling results leading to the proposed (now finalized) nonattainment boundary showed that prescribed fires and slash fires were potential contributers to $PM_{2.5}$ at the violating monitor during the fall and spring seasons. These fires were within the current proposed nonattainment boundaries but beyond the more limited boundaries suggested in this comment.

As identified in the WSV TSD, the area has been analyzed using a five factor analysis. This includes review of air quality data from the Pinehurst monitor as well as data from monitors in surrounding areas. The decision was also supported by emissions inventory information along with modeling across a multi-county domain in Northern Idaho. The weight of evidence from the various analyses identified that the majority of emissions affecting the area were generated within close proximity of the monitor during the wintertime. It also identified that during the shoulder seasons, fall and spring, there are emissions from prescribed and slash burning affecting the monitor. There is sufficient weight of evidence based on current monitoring data to support the nonattainment area at issue here, and to ensure that all emissions contributing to the monitor are within the nonattainment area.

3.2.7. Multi-Region Areas

3.2.7.1. Louisville, KY-IN

Comment: The Kentucky Energy and Environment Cabinet (KEEC) comments that the EPA is inconsistent in applying and evaluating $PM_{2.5}$ air quality in the Louisville, KY-IN Area. KEEC states that the EPA intends to use 2011-2013 data from a monitoring site in Indiana with a violating design value as the basis for a nonattainment designation for the 2012 annual $PM_{2.5}$ NAAQS, but has not acted on a pending redesignation request for the 1997 annual $PM_{2.5}$ NAAQS due to data quality issues with air quality monitors in Jefferson County, Kentucky. KEEC believes that if the EPA is willing to use the ambient air monitoring data from the Clark County, Indiana, monitor for the $PM_{2.5}$ nonattainment designation for the 2012 standard, then the EPA should also use the data to finalize the attainment designation for the 1997 standard, particularly since the Clark County, Indiana, monitor has been the design value monitor for the Louisville KY-IN Area since 2007.

EPA Response: The EPA must consider the monitoring data from all monitors in an area in making a designation decision. While it only takes one monitor in an area to indicate that an area is violating a standard, it takes all of the monitors in an area to provide assurance that an area is in compliance with that standard. The only complete, quality-assured data from the Louisville, KY-IN Area is from the Clark County, Indiana, monitor which shows a violation of the standard based on 2011-2013 data. Because data are not available for the monitors in Jefferson County, Kentucky, it is not apparent to the EPA that the Clark County, Indiana, monitor is the design value monitor for the Area or what the monitors in Jefferson County, Kentucky, would indicate if these monitors had complete, quality-assured data. The EPA notes that the highest reading monitor in the Area when the EPA finalized the Louisville, KY-IN Area designation for the 1997 $PM_{2.5}$

NAAQS in 2005 was in Jefferson County, Kentucky. For all of these reasons, the EPA is designating the Area as nonattainment. However, as the EPA has previously indicated, areas may opt to early certify monitoring data for the EPA's consideration. In its response letter to the EPA, Indiana stated that the Clark County, Indiana, monitor is expected to show attainment at that monitor based on 2012-2014 data and that Indiana intends to early certify this data for the EPA's consideration. The EPA agrees with Indiana. that in the event that the Clark County, Indiana, monitor has complete, quality-assured data that shows attainment for 2012-2014 at that monitor, it is appropriate for the EPA to designate the Louisville, KY-IN Area as unclassifiable because of the incomplete data in Jefferson County, Kentucky, for 2011, 2012, and 2013. Additionally, it is not anticipated that the monitors in Jefferson County, Kentucky will have complete data for the 2012-2014 time period.

While the EPA's evaluation of the redesignation request for the Louisville KY-IN Area for the 1997 $PM_{2.5}$ standard is outside of the scope of the designation process for the 2012 $PM_{2.5}$ standards, the EPA notes that complete, quality-assured data for the entire area (i.e., monitors in Indiana and Kentucky) are required to support the redesignation.

Comment: The Kentucky Energy and Environment Cabinet (KEEC) notes that the preliminary Technical Support Document for the Louisville, KY-IN Area that the EPA developed and included in its 120-day letter to Kentucky Governor Steven Beshear on August 19, 2014, relied upon emissions data from 2011 and 2012. KEEC notes that additional reductions in $PM_{2.5}$, SO_2, and NOx will occur in the Louisville KY-IN Area as a result of two emission reduction projects at the Louisville Gas & Electric's (LG&E) Mill Creek and Cane Run facilities that are scheduled for completion by the end of 2016. KEEC asks that the EPA designate the Louisville KY-IN Area as unclassifiable/attainment based on the anticipated emissions reductions from these projects and on Indiana's expected early certification of 2014 data.

EPA Response: The EPA appreciates the information regarding the upcoming emissions reductions in $PM_{2.5}$, SO_2, and NOx at the LG&E's Mill Creek and Cane Run facilities and is aware of Indiana's belief that the Clark County, Indiana, monitor will show attainment of the $PM_{2.5}$ NAAQS from 2012-2014 at that monitor once 2014 data is certified. For designations, the EPA must base its determination on the air quality data and emissions for the area at the time of the final designations. As discussed above, the EPA will consider the 2012-2014 data from this monitor if Indiana early certifies complete, quality-assured data for 2014. The Agency agrees with Indiana that in the event that the Clark County, Indiana, monitor has complete, quality-assured data showing attainment for 2012-2014 at that monitor, it is appropriate for the EPA to designate the Louisville, KY-IN Area as unclassifiable because of the incomplete data in Jefferson County, Kentucky for the time period of designations.

3.2.7.2. Cincinnati-Hamilton, OH-KY

Comment: Ohio EPA (OEPA) commented that the intended boundary for the Cincinnati-Hamilton area should not include the intended partial Warren County. OEPA notes that the EPA's analysis included demonstrating the percent of total pollutants that Warren county contributes compared to other counties in the intended nonattainment area, including VMT, but due to the fact that the wind direction is predominantly from the south/southwest, while Warren County is east/northeast of the violating monitors, the area is not contributing to the violation, or is a "weak contributor" and therefore should be designated attainment, rather than nonattainment based on contribution to the violating monitors.

EPA Response: In fact, the wind roses shown in Figure 8 of the TSD indicate winds blowing from the northeast direction during a moderate fraction of the 2010-2012 3-year period. Additionally, the EPA's KDE plots included in the TSD (Figure 9) show a high frequency (greater than 50% of the maximum frequency) of trajectories passing over grid cells that include the portions of Warren County that were included as the intended boundary. The EPA also notes that for the 2012 annual NAAQS, the monitor data for the entire calendar year (including on days that are below the level of the NAAQS) are part of the mathematical calculation of whether a monitor is nonattainment or not. Thus, contribution is still relevant even during a single season, during days that wind directions are coming from the east/northeast, or during periods that do not have high ambient levels. Accordingly, this was one of the factors used when including Warren County in the nonattainment area.

The EPA also notes that during the multifactor analysis the EPA also considered Warren County's contribution to direct PM from mobile sources moving into Hamilton County (the area with the violating monitors), and furthermore assessed contribution from the population and urban area of Warren County that is part of the continuous Cincinnati-metro area. The mobile sources in particular move into the area where the violations are being monitored, leading to direct contribution regardless of wind direction. While the commenter notes that only 5.2% of the area's commuters are from Warren County, the number of VMT for 2011 in Warren County is over 2 billion miles, and it had the third highest VMT for the intended nonattainment area, as noted in the TSD sent to the state and posted as part of the FR notice.

The commenter also notes that the area is a "weak contributor" as far as precursors due to wind direction and the lack of major point sources in the county; however, the statute is clear in providing for inclusion in nonattainment areas of areas that "contribute" to the violations. The EPA interprets the term "contributes" to mean contributes sufficiently to justify inclusion in the nonattainment area, and the EPA's multifactor test with the various analytical tools is intended to assure an objective evaluation of the appropriate facts on a case by case basis in each area. The EPA has considered multiple factors of analysis, and has applied the same analysis to all counties considered in the area of analysis as outline in the TSD. The EPA's decision is not contingent on only one part of the analysis, but the analysis as a whole especially given that PM is a complex pollutant

with contribution from multiple source categories as well as multiple pollutants. Hence, the EPA's use of the weight of evidence approach evaluating the facts and circumstances in each area on a case by case basis, and was done consistently with decision principles to assure comparable treatment in all the designations.

Comment: The Kentucky Energy and Environment Cabinet (KEEC) provided comments regarding the Kentucky portion of the intended Cincinnati-Hamilton nonattainment area, the partial counties of Boone, Kenton, and Campbell. KEEC comments that they believe the monitored violations are due to local sources only, and that monitors measuring attainment both upwind and downwind of the violating monitor's shows that the violations are from local sources only. The comments point to local rail yards, rail lines, and highways as the sources that are causing the violation given their location to the violating monitors. The comments also cite the EPA's TSD enclosed with the 120-day letters, noting that the Kentucky counties each account for less than 10% of the emissions for each pollutant or precursor within the area of analysis.

EPA Response: The commenter has not provided emissions associated with these sources allegedly causing the violations, nor has the commenter provided any additional evidence that emissions from these sources would be the only contributors of PM monitored at the violating monitors. Very localized sources may contribute to the violation, along with other sources in the nonattainment area. As a general matter, single sources cause concentrations that are only a fraction of the standard, even in their immediate vicinity, and violations instead reflect the contributions of numerous sources throughout an urban area (in addition to significant "background concentrations" from more distant sources). To determine the contribution of nearby areas, the EPA provided a multiple factor analysis that looked at the various sources of PM in the area, their total emissions, as well as wind direction impacting the monitors, and the source of the air mass that cover the continuous nonattainment area through back trajectories (noted as KDEs in the TSD). The three counties (Boone, Kenton, and Campbell) in Kentucky were found to be commonly upwind of the violating monitor based on the wind roses and KDEs (see Figures 8 and 9 of the TSD), and to have emissions that the EPA considers contributing to the violation due to both magnitude – as measured in tons per year – as well as composition, with the VMT and population in the Kentucky areas contributing to higher upwind emissions. The EPA's multifactor test with the various analytical tools is intended to assure an objective evaluation of the appropriate facts on a case by case basis in each area, and the EPA has determined through the weight-of- evidence presented in the TSD that the areas in Kentucky contribute to the violations in Hamilton County. Moreover, the fact that there are monitors showing attainment does not prove that there is no contribution from the area, since the nature of $PM_{2.5}$ is that a group of sources that may not be causing a violation in one location may in combination with other nearby sources be contributing to violations elsewhere nearby.

The commenter also notes that emissions from sources in each of the Kentucky areas are 10% or less. The statute does not require the EPA to establish or use a bright line test or threshold (in this case an emissions percentage) to define what constitutes contribution. Indeed, the EPA has said that to do so would potentially result in arbitrary and capricious decisions in areas where such a test would make no sense by including or excluding areas

without regard to other more relevant information. Hence, the EPA's use of the weight of evidence approach evaluating the facts and circumstances in each area on a case by case basis, but done consistently with decision principles to assure comparable treatment in all the designations. In this case the emissions from these counties' sources, plus the meteorology, and the amount of VMT and population were all noted as part of the analysis the EPA conducted in the TSDs that resulted in the determination that these counties contribute to the violations in Hamilton County and should be included in the nonattainment area.

3.2.7.3. St. Louis, MO-IL

Comment: The Missouri Department of Natural Resources (MO DNR) reiterates their recommendation that the EPA designate all portions of Missouri, including those areas in the St. Louis area, as unclassifiable/attainment. MO DNR is concerned that if the EPA designates the City of St. Louis and St. Louis, St. Charles, Franklin, and Jefferson Counties as "unclassifiable" because of uncertainty with the Illinois monitoring data as indicated in the August 19, 2014 letter to Missouri Governor Nixon, then the unclassifiable designation may leave the St. Louis area open to a potential future nonattainment area designation when Illinois resolves its $PM_{2.5}$ monitoring issues. MO DNR further states that an unclassifiable/attainment designation is appropriate regardless of the uncertainty of Illinois data because all monitors in Missouri attain the 2012 annual $PM_{2.5}$ NAAQS and are trending downward.

EPA Response: The EPA must consider the monitoring data from all monitors in an area to inform the appropriate designation decision. While it only takes one monitor in an area to indicate that an area is violating a standard, it takes all of the monitors in an area to provide assurance that an area is in compliance with that standard. In the case of St. Louis MO-IL, the monitoring data on the IL portion of the area is invalid, thus the EPA can't verify if the area would be attaining. The IL monitors have historically been the design value monitors for the area so relying on attaining monitors in Missouri is not appropriate as these Missouri monitors have not historically had the highest design values in the area. The EPA is using "unclassifiable" for those areas where the EPA was not able to determine based on available information whether the area is meeting or not meeting the NAAQS or where the EPA was not able to determine that the area contributes to a nearby violation. In this case the EPA cannot determine if the area meets the NAAQS or determine if the MO area contributes to a nearby violation, thus the EPA is designating all portions of St. Louis Missouri as unclassifiable.

Comment: MO DNR notes that it is inappropriate to include areas in Missouri in an IL-MO unclassifiable area based on the TSD for the 1997 annual $PM_{2.5}$ NAAQS because at the time that TSD was developed, monitors in Missouri were violating the 1997 standard of 15 $\mu g/m^3$ and the TSD analysis was based on assessing contribution to a violating Missouri monitor.

EPA Response: The EPA is including areas in Missouri because of the uncertainty in both monitored values and potential contributions to possible violations of the NAAQS. Because the area has a history of nonattainment the EPA did review past analysis to help inform the unclassifiable boundary determination. The EPA does not believe it is inappropriate to consider past analyses to help inform this decision. The EPA also believes that the current distribution of emissions and wind patterns are similar to the historic distribution of emissions and wind patterns, and other factors (recognizing the limitations in the available air quality data) suggest a similar area to be contributing to potential violations in Illinois as the EPA found in promulgating designations for the 1997 NAAQS. We agree with Missouri that future attainment/nonattainment boundaries may be different than those found in the TSD for the 1997 NAAQS, and inclusion as unclassifiable in this designation does not necessarily indicate this area would contribute to a future violation should one be found to exist.