

March 17, 2016

TO: Members of the MAG Air Quality Technical Advisory Committee

FROM: Tim Conner, Scottsdale, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Thursday, March 24, 2016 - 1:30 p.m.  
MAG Office, Suite 200 - Saguaro Room  
302 North 1<sup>st</sup> Avenue, Phoenix

A meeting of the MAG Air Quality Technical Advisory Committee has been scheduled for the time and place noted above. Members of the Air Quality Technical Advisory Committee may attend the meeting either in person, by videoconference or by telephone conference call. Those attending by videoconference must notify the MAG site three business days prior to the meeting. If you have any questions regarding the meeting, please contact Chair Conner or Lindy Bauer at 602-254-6300.

Please park in the garage underneath the building, bring your ticket, and parking will be validated. For those using transit, Valley Metro/Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the MAG Air Quality Technical Advisory Committee does not meet the quorum requirement, members who arrived at the meeting will be instructed a legal meeting cannot occur and subsequently be dismissed. Your attendance at the meeting is strongly encouraged. If you are unable to attend the meeting, please make arrangements for a proxy from your entity to represent you.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Leila Gamiz at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

TENTATIVE AGENDA

COMMITTEE ACTION REQUESTED

1. Call to Order

2. Call to the Audience

An opportunity will be provided to members of the public to address the Air Quality Technical Advisory Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Air Quality Technical Advisory Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard.

3. Approval of the January 28, 2016 Meeting Minutes

4. Update on the Moderate Area Ozone Plan

On August 27, 2015, EPA published a notice proposing to take actions for the 36 Marginal nonattainment areas. In the notice, EPA proposed that the Maricopa Eight-Hour Ozone Nonattainment Area did not attain the standard and would be reclassified from Marginal to Moderate. The attainment date for Moderate Areas is July 20, 2018. A new plan will be due by January 1, 2017. The plan is required to include reasonable further progress; reasonably available control technology; reasonably available control measures; new source review; emissions inventories; modeling attainment demonstration for 2017 (ozone season prior to the attainment date); contingency measures; and motor vehicle emissions budgets for conformity. To date, there are approximately

2. For information.

3. Review and approve the January 28, 2016 meeting minutes.

4. For information and discussion.

93 existing control measures in the Maricopa Eight-Hour Ozone Nonattainment Area. An update on the plan will be provided.

5. Ozone Boundary Designations

On October 26, 2015, the Environmental Protection Agency (EPA) published a final rule to strengthen the federal eight-hour ozone standard from 0.075 to 0.070 parts per million. By October 1, 2016, states are required to submit designation recommendations for nonattainment/attainment to EPA. In order to meet this deadline, the Arizona Department of Environmental Quality (ADEQ) will have draft recommendations for public review between May and June 2016. On February 23, 2016, the Arizona Department of Environmental Quality conducted two stakeholder meetings on the Ozone Boundary Designations and the preliminary data collected to date. Based upon the 2013-2015 air quality monitoring data, it appears that there are exceedances of the new standard in the counties of Maricopa, Pinal, Gila, and Yuma. On April 14, 2016, ADEQ will conduct another stakeholder meeting to discuss in detail the boundary recommendations. By October 1, 2017, EPA anticipates finalizing the designations, classifications, and attainment dates based upon the ozone levels in the area (Marginal-Extreme).

6. Update on the Maricopa County Winter No Burn Campaign

The Arizona Department of Environmental Quality and Maricopa County Air Quality Department conducted a Winter Holiday No Burn Campaign designed to reduce concentrations of PM-2.5 during the winter holiday season. When a High Pollution Advisory is issued by the Arizona Department of Environmental Quality, wood burning in fireplaces, stoves, chimineas and outdoor fire pits is restricted. Maricopa County will

5. For information and discussion.

6. For information and discussion.

provide an update on the results of the 2015 No Burn Campaign and also discuss the Fireplace Retrofit Program.

7. Maricopa County Ozone Campaign

The Maricopa County Air Quality Department will be conducting an Ozone Campaign this summer to encourage daily actions to reduce ozone pollution. A presentation will be provided.

8. Update on the PM-10 Lawsuit

On July 29, 2014, the Arizona for Law in the Public Interest filed a lawsuit against the Environmental Protection Agency to challenge the approval of the MAG 2012 Five Percent Plan for PM-10 in the U.S. Ninth Circuit Court of Appeals. On February 29, the MAG special Washington, D.C. legal counsel indicated that the U.S. Ninth Circuit Court of Appeals is considering this case for oral argument for the week of June 13-17, 2016.

9. Call for Future Agenda Items

The next meeting of the Committee has been tentatively scheduled for **Thursday, April 21, 2016 at 1:30 p.m.** The Chair will invite the Committee members to suggest future agenda items.

7. For information and discussion.

8. For information and discussion.

9. For information and discussion.

MINUTES OF THE  
MARICOPA ASSOCIATION OF GOVERNMENTS  
AIR QUALITY TECHNICAL ADVISORY COMMITTEE MEETING

Thursday, January 28, 2016  
MAG Office  
Phoenix, Arizona

MEMBERS ATTENDING

	Tim Conner, Scottsdale, Chairman		Liz Foster for Jeanette Fish, Maricopa County Farm Bureau
*	Jamie McCullough, El Mirage, Vice Chair		Steve Trussell, Arizona Rock Products Association
	Drew Bryck, Avondale		
	Robert van den Akker, Buckeye		
#	Jon Sherrill for Jim Weiss, Chandler	*	Claudia Whitehead, Greater Phoenix Chamber of Commerce
*	Jessica Koberna, Gilbert		Amanda McGennis, Associated General Contractors
	Megan Sheldon, Glendale	*	Spencer Kamps, Homebuilders Association of Central Arizona
*	Cato Esquivel, Goodyear		Mannie Carpenter, Valley Forward
*	Kazi Haque, Maricopa	#	Kai Umeda, University of Arizona Cooperative Extension
#	Greg Edwards, Mesa		Beverly Chenausky, Arizona Department of Transportation
	William Mattingly, Peoria	#	Marina Mejia for Arizona Department of Environmental Quality
	Joe Giudice, Phoenix	*	Environmental Protection Agency
#	Antonio DeLaCruz, Surprise		Hether Krause, Maricopa County Air Quality Department
*	Oddvar Tveit, Tempe		Scott DiBiase, Pinal County
	Youngtown	#	Michelle Wilson, Arizona Department of Weights and Measures
#	Ramona Simpson, Queen Creek	@	Ed Stillings, Federal Highway Administration
#	Walter Bouchard, American Lung Association of Arizona	*	Judi Nelson, Arizona State University
	Kristin Watt, Salt River Project		Stan Belone, Salt River Pima-Maricopa Indian Community
*	Rebecca Hudson-Nunez, Southwest Gas Corporation		
	Michael Denby, Arizona Public Service Company		
*	Gina Grey, Western States Petroleum Association		
	Robert Forrest, Valley Metro/RPTA		
*	Dave Berry, Arizona Motor Transport Association		

\*Members neither present nor represented by proxy.

#Participated via telephone conference call.

+Participated via video conference call.

@ Ex-Officio member, non-voting member.

OTHERS PRESENT

Lindy Bauer, Maricopa Association of Governments  
Julie Hoffman, Maricopa Association of Governments  
Matt Poppen, Maricopa Association of Governments  
Kara Johnson, Maricopa Association of Governments  
Dean Giles, Maricopa Association of Governments  
Taejoo Shin, Maricopa Association of Governments  
Randy Sedlacek, Maricopa Association of Governments  
Patrick Shaw, Maricopa Association of Governments

Todd Williams, Michael Baker International  
Joonwon Joo, Arizona Department of Transportation  
Sam Brown, City of Scottsdale  
Dianne Barker, Citizenry  
Joe Gibbs, City of Phoenix

1. Call to Order

A meeting of the Maricopa Association of Governments (MAG) Air Quality Technical Advisory Committee (AQTAC) was conducted on January 28, 2016. Tim Conner, City of Scottsdale, Chair, called the meeting to order at approximately 1:30 p.m. Marina Mejia, Arizona Department of Environmental Quality; Greg Edwards, City of Mesa; Antonio DeLaCruz, City of Surprise; Ramona Simpson, Town of Queen Creek; Jon Sherrill, City of Chandler; Kai Umeda, University of Arizona Cooperative Extension; Walter Bouchard, American Lung Association; and Michelle Wilson, Arizona Department of Weights and Measures, attended the meeting via telephone conference call.

Chair Conner indicated that copies of the handouts for the meeting are available. He noted for members attending through audio conference, the presentations for the meeting will be posted on the MAG website under Resources for the Committee agenda, whenever possible. If it is not possible to post them before the meeting, they will be posted after the meeting.

Chair Conner announced that William Mattingly, City of Peoria, will be retiring from the City of Peoria. He stated that Mr. Mattingly has served on the Committee for seven years and has also served as Vice Chair and Chair. Chair Conner thanked Mr. Mattingly for his efforts and service to the Committee.

Lindy Bauer, Maricopa Association of Governments, stated that Mr. Mattingly has been a great contributor to the Committee and that it has been wonderful working with him.

2. Call to the Audience

Chair Conner stated that the Call to the Audience provides an opportunity for members of the public to address the Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Comment cards for those wishing to speak are available on the tables adjacent to the doorways inside the meeting room. Members of the public will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Committee requests an exception to this limit. Please note that those wishing to comment on action agenda items will be given an opportunity at the time the item is heard. Chair Conner noted that no public comment cards had been received.

3. Approval of the October 22, 2015 Meeting Minutes

The Committee reviewed the minutes from the October 22, 2015 meeting. Joe Giudice, City of Phoenix, moved and Mr. Mattingly seconded, and the motion to approve the October 22, 2015 meeting minutes carried unanimously.

4. EPA Proposed Revisions to the Exceptional Events Rule

Matt Poppen, Maricopa Association of Governments, provided an update on the Environmental Protection Agency (EPA) proposed revisions to the Exceptional Events Rule. He stated that on November 20, 2015, EPA proposed revisions to the 2007 Exceptional Events Rule along with draft guidance on preparing exceptional events for ozone exceedances caused by wildfires. A

copy of the fact sheet on the proposed revisions and the Federal Register publication of the proposed revisions are included in the agenda materials.

Mr. Poppen discussed that EPA published the revisions and guidance to address issues raised by stakeholders since promulgation of the rule. The EPA revisions intend to provide clarity and increase the administrative efficiency of the exceptional event review and approval process. Mr. Poppen stated that EPA is expected to finalize the rule revisions before October 1, 2016, which is the date by which states are required to submit the initial designation recommendations for the 2015 ozone standard. A public hearing on the proposed revisions was held at the Arizona Department of Environmental Quality (ADEQ) on December 8, 2015.

Mr. Poppen stated that MAG is reviewing the proposed revisions and draft guidance in coordination with ADEQ and MAG special Washington, D.C. legal counsel. MAG will submit a joint comment letter with ADEQ, Maricopa County, Pinal County, and Pima County on the proposed revisions and draft guidance. Mr. Poppen indicated that MAG intends to also submit an individual comment letter. Comments are due to EPA by February 3, 2016. Mr. Poppen noted that the MAG comments reflect that the proposed revisions contain improvements to the current Exceptional Events Rule that are achieved by simplifying portions of the current exceptional events review and approval process. However, areas of concern where the rule has not been streamlined and continues to be unnecessarily burdensome are also addressed in the MAG comments.

Amanda McGennis, Associated General Contractors, noted that the deadline for comment submittal is incorrect on the EPA fact sheet. She noted that the correct date for comment submittal is February 3, 2016. Mr. Poppen indicated that the fact sheet was published prior to an extension of the date. The date for comment submittal is February 3, 2016. Ms. Bauer indicated that the fact sheet was provided by EPA prior to the request for extension that was granted.

##### 5. Draft MAG 2014 Inventory of Unpaved Roads

Randy Sedlacek, Maricopa Association of Governments, presented an update on the 2014 Unpaved Roads Inventory for the Maricopa County PM-10 Nonattainment Area. He stated that on May 23, 2007, the MAG Regional Council directed the development of an unpaved roads inventory for the PM-10 nonattainment area. The primary use of the inventory is to track the progress in eliminating unpaved roads. Mr. Sedlacek indicated that the initial inventory was completed in November 2009.

Mr. Sedlacek discussed that the unpaved roads inventory was updated for year 2014. The update for year 2014 utilized unpaved roads data from the following: MAG member agencies; MAG Congestion Mitigation and Air Quality Improvement Program and Transportation Improvement Program paving data; and aerial image analysis and Geographic Information System (GIS) analysis from MAG staff. The following unpaved roads were not included in the inventory: alleys; agricultural roads; canal roads; closed unpaved roads; easements; restricted access roads; and utility roads. Mr. Sedlacek indicated that these roads were not included in the inventory due to little traffic or inaccessibility by the public.

Mr. Sedlacek displayed the year 2014 unpaved roads summary. He stated that in 2014 it is estimated that there were approximately 383 miles of public unpaved roads and 994 miles of private unpaved roads for a total of 1,377 total unpaved roads. The total miles of public unpaved roads decreased approximately 230 miles when compared to the November 2009 inventory. The total miles of private unpaved roads decreased approximately 277 miles when compared to the November 2009 inventory.

Mr. Sedlacek presented a regional map showing public unpaved roads and PM-10 monitors in the PM-10 nonattainment area. Public unpaved roads are denoted as red lines.

Mr. Sedlacek displayed a regional map showing private unpaved roads and PM-10 monitors in the PM-10 nonattainment area. Private unpaved roads are denoted as blue lines.

Michael Denby, Arizona Public Service, inquired about what caused the reduction in private unpaved roads. Mr. Sedlacek responded that in 2011 a MAG on-call consultant, Technical and Business Systems, conducted an extensive on-road survey in which they drove a majority of the private unpaved roads. The consultant found that some roads had been misclassified; some of the classified unpaved roads were driveways or trails instead of private roads. Mr. Sedlacek indicated that the original inventory was based on GIS analysis of aerial images rather than actual field data.

#### 6. Update on the New Strengthened Ozone Standard

Ms. Bauer presented an update on the new strengthened 2015 ozone standard. She noted that a presentation on the strengthened ozone standard was provided at the October 22, 2015 Committee meeting. On October 26, 2015, EPA published the final notice to strengthen the eight-hour ozone standard from 0.075 to 0.070 parts per million (ppm). Under the Clean Air Act, EPA is required to review the ozone standard every five years. Ms. Bauer indicated that the Clean Air Act Scientific Advisory Committee advises and makes recommendations on the standards to EPA.

Ms. Bauer stated that on October 1, 2016 states are required to submit designation recommendations for attainment or nonattainment to EPA. She indicated that ADEQ will conduct stakeholder meetings on the designation recommendation. On October 1, 2017, EPA will finalize the designations, classifications, and attainment dates based upon 2014 to 2016 ozone monitoring data. Ms. Bauer added that the cleaner the region is with regard to ozone, the better off the region will be. Attainments date will range from the year 2020 to late 2037 depending upon ozone levels in the area (Marginal to Extreme).

Ms. Bauer displayed trend data of the highest three-year average of the fourth high eight-hour ozone concentrations. She noted the one-hour ozone standard and the 1997 eight-hour ozone standard have been met. The 2008 eight-hour ozone standard of 0.075 ppm has not yet been met. Ms. Bauer added the 2015 eight-hour ozone standard of 0.070 ppm, as depicted on the table, has not yet been met. She discussed that the highest concentration for the three year period 2013, 2014, and 2015 was 0.078 ppm. If the June 20, 2015 wildfire exceptional event was excluded, the highest value would be 0.077 ppm. Ms. Bauer noted that the region is not in attainment for the 2008 eight-hour ozone standard and the 2015 eight-hour ozone standard.

Ms. Bauer discussed the existing and proposed federal rules that will assist in attaining the ozone standard. The existing and proposed federal rules include: Requirements to Reduce Interstate Transport of Air Pollution; Regional Haze Regulations; Mercury and Air Toxics Standards; Clean Power Plan; Tier 3 Vehicle Emissions and Fuel Standards; Light-Duty Vehicle Tier 2 Rule; Mobile Source Air Toxics Rule; Light-Duty Greenhouse Gas/Corporate Average Fuel Efficiency Standards; Heavy-Duty/Vehicle Greenhouse Gas Rule; Reciprocating Internal Combustion Engines NESHAP; and Industrial/Commercial/Institutional Boilers and Process Heaters Maximum Available Control Technology and Amendments. Ms. Bauer stated that EPA analysis indicates that these rules will help the vast majority of counties in the U.S. meet the standard by 2025 without additional actions. She added that currently it is unknown how much time the region will have to attain the standard. Ms. Bauer noted that ADEQ will be recommending designations to EPA.

Ms. Bauer presented a map of the Maricopa Eight-Hour Ozone Nonattainment Area Boundary. The current boundary is over 5,000 square miles. Ms. Bauer noted that hopefully the nonattainment area boundary will not be expanded. Additional requirements would be required for business and industry located within the boundary.

Ms. Bauer displayed a graphic on the Clean Air Act ozone nonattainment area requirements by classification. She stated that if the region is in nonattainment, the hope is to be classified as a Marginal Area. Marginal Areas have the least amount of requirements. Ms. Bauer noted that new businesses and industries locating in the area or expanding would have requirements to meet. She commented that the strengthened standard comes at an inopportune time. She stated that the region is working to encourage economic development due to the recession. Ms. Bauer indicated that MAG will update the Committee throughout the process. She noted that the first step is to discuss what the State will submit for a designation recommendation. Ms. Bauer stated that ADEQ will be holding stakeholder meetings in February. She added that MAG will then report back to the Committee.

Ms. McGennis inquired if MAG has received information on a boundary expansion. Ms. Bauer replied that no information has been given on a boundary expansion, however MAG has heard the ADEQ Queen Valley Monitor, located outside the boundary in Pinal County downwind from the region, has a three-year average of 0.071 ppm. This is just over the new standard. Ms. Bauer stated that the concentrations continue to decline and the hope is that the monitor will be in compliance when the official designations are released. She commented that it is not required to expand a nonattainment area boundary to include a downwind monitor. It appears that the boundary does not need to be expanded.

Mannie Carpenter, Valley Forward, asked about the significant sources that contribute to ozone concentrations. Ms. Bauer responded that there are four violating monitors in the region: Mesa, North Phoenix, Phoenix Supersite, and Pinnacle Peak. She noted that the winds generally originate in the southwest and travel to the northeast. Regarding the sources, both volatile organic compounds (VOC) and nitrogen oxide (NO<sub>x</sub>) are important.

Ms. Bauer discussed that biogenics, natural vegetation such as trees and plants, is the largest category of VOC emissions at 58.5 percent. Area sources make up 19 percent of the VOC emissions include the following: solvents and coatings use; fuel storage and transport; waste

treatment and disposal; industrial and chemical processes; residential and industrial fuel combustion; and wildfires. Ms. Bauer reported that onroad sources, including car and truck exhaust, are 12.3 percent of the emissions. Nonroad sources make up 9.8 percent, which include: commercial; industrial; construction; mining; lawn and garden; farm and recreational equipment; aircraft; and locomotives. The remaining 0.5 percent are point sources, which are industrial, manufacturing and electrical power generating facilities.

Ms. Bauer stated that the largest source of NO<sub>x</sub> is mobile sources, which includes cars and trucks. She indicated that many of the existing and proposed federal rules that she discussed previously target these mobile sources. The region has not experienced the full benefit of the Tier 2 standards and the recently approved Tier 3 standards will begin with model year 2017. Ms. Bauer noted that the Tier 2 and Tier 3 standards are substantial measures to reduce ozone. She explained that ozone is not directly emitted into the atmosphere, rather it is formed through a chemical reaction between VOC and NO<sub>x</sub> in the presence of sunlight and high temperatures. Ms. Bauer indicated that the next presentation on the Moderate Area Ozone Plan reviews the variety of measures already in place to reduce ozone concentrations.

Mr. Carpenter inquired about the inventory year. Ms. Bauer replied that the information is from the Draft 2011 Ozone Season-Day Inventory.

Ed Stillings, Federal Highway Administration, asked about the risk of not being designated as a Marginal Area. Ms. Bauer responded that there is always a risk, the 2016 and 2017 ozone seasons have not yet taken place. Also, one year is dropped when a new year is added. Ms. Bauer stated that EPA has informally indicated that the Marginal Area threshold may be 0.08 ppm or below. She indicated that the current annual three-year average of the fourth high concentration in this region is 0.078 ppm or 0.077 ppm with the exceptional event excluded. Therefore there is hope that the region will be designated as a Marginal Area.

Mr. Carpenter inquired if offset ratios would apply to both VOC and NO<sub>x</sub> sources. Ms. Bauer replied that it appears that way since the region will not have a NO<sub>x</sub> waiver. However, she stated that more information will be forthcoming.

Mr. Giudice commented that he had recently read that EPA was not as confident with the predicted emission standard impacts due to low gas prices that are projected to stay low. He mentioned that it may be a topic to look into since the region would be utilizing those benefits to aid in the attainment of the standard. Ms. Bauer thanked Mr. Giudice for the information. She indicated that the tailpipe standards have always been a large measure for the region. She noted that MAG will monitor it. If the benefits do not materialize as EPA predicts, this would have an impact.

## 7. Update on the Moderate Area Ozone Plan

Mr. Poppen presented an update on the MAG Eight-Hour Ozone Moderate Area Plan for the Maricopa Nonattainment Area. On August 27, 2015, EPA proposed that the Maricopa eight-hour ozone nonattainment area did not attain the 2008 ozone standard of 0.075 ppm by July 20, 2015 and would be reclassified from a Marginal Area to a Moderate Area. The proposal established a January 1, 2017 due date for a Moderate Area Plan. Mr. Poppen noted that the proposed rule has not been finalized by EPA, however no changes are expected.

Mr. Poppen provided an update on the Clean Air Act requirements for a Moderate Area. The first requirement is the modeling attainment demonstration. This is a demonstration that the monitor concentrations will attain the standard by 2017. Mr. Poppen noted the July 20, 2018 attainment date for the region. He stated that the Plan is required to demonstrate attainment in the prior 2017 ozone season since the attainment date is in the middle of the 2018 summer ozone season. MAG modeling staff has begun work on the modeling attainment demonstration. Mr. Poppen indicated that the modeling protocol has been completed that includes developing emission inventories and other modeling inputs to demonstrate attainment utilizing the control measures currently in place.

Mr. Poppen discussed the Moderate Area requirement of reasonable further progress (RFP). He stated that to demonstrate reasonable further progress, a Rate of Progress Plan is required that provides a 15 percent reduction in VOC emissions over a six-year period, 2012 to 2017, from the baseline anthropogenic emissions. The baseline year is 2011. Mr. Poppen reported that EPA provides two options for calculating and demonstrating the 15 percent rate of progress reduction requirement for the Maricopa nonattainment area.

Mr. Poppen presented a map of the eight-hour ozone nonattainment area to demonstrate the two options for the RFP demonstration. Option one is to demonstrate a 15 percent reduction across the entire eight-hour ozone nonattainment area. Preliminary modeling results demonstrate that a 15 percent reduction can be shown in the nonattainment area with existing control measures. Mr. Poppen discussed that option two allows for a 15 percent reduction in NO<sub>x</sub> and/or VOC in the one-hour ozone maintenance area. EPA allows this since this area has already demonstrated a 15 percent reduction in VOCs in a prior plan. However, under option two the area outside the one-hour maintenance area, but inside the eight-hour nonattainment area (called the donut area) would still be required to demonstrate a 15 percent reduction in VOC emissions only.

Mr. Poppen stated that reasonably available control technology (RACT) is also a Moderate Area requirement. Maricopa County Air Quality Department is in the process of updating their rules to meet RACT for VOC and NO<sub>x</sub> sources.

Mr. Poppen continued with the Moderate Area requirements, by discussing reasonably available control measures (RACM). To demonstrate that the area meets this requirement a region must demonstrate that all reasonable available control measures have been adopted to meet RFP requirements and demonstrate attainment as expeditiously as possible. Mr. Poppen reviewed that there are 93 local, state, and federal ozone control measures already in place in the Maricopa nonattainment area. He explained that measures are in place from prior air quality plans and continue to have future benefits. Mr. Poppen noted that these measures will continue in the Moderate Area Plan.

Mr. Poppen stated that as part of RACM analysis, the EPA implementation rule recommends the state consider all available VOC and NO<sub>x</sub> measures including those implemented in other nonattainment areas. Mr. Poppen stated that the 93 measures currently in place are being compared to the EPA menu of control measures. The EPA menu of control measures is a table of VOC and NO<sub>x</sub> measures compiled from around the country. Many of the measures on the EPA table already are in place in the region. Mr. Poppen noted that any new RACM measure that the region may adopt has to be economically and technologically feasible and would have to advance the attainment date by one year or be necessary for demonstrating RFP or attainment.

He indicated that it is not practical for the region to implement new measures to advance the attainment date since the measure would have to already be in place. Mr. Poppen indicated that MAG is also analyzing California VOC and NO<sub>x</sub> measures. For measures that are not in place or that are more strict, preliminary modeling indicates that, the measures would not advance the attainment date or be necessary for demonstrating RFP or attainment.

Mr. Poppen indicated that New Source Review is also a Moderate Area requirement. He stated that New Source Review is the permitting rules for major and minor point and area sources. The Arizona Department of Environmental Quality, Maricopa County Air Quality Department, and Pinal County Air Pollution Control District are in the process of updating their new source review rules to meet federal requirements.

Mr. Poppen discussed emissions inventories. He stated that ozone inventories are being developed for the base year of 2011 and the attainment year of 2017 for use in the attainment modeling and the RFP demonstration. Additionally, the 2014 periodic emissions inventory produced by Maricopa County will also be available for inclusion in the Plan.

Mr. Poppen stated that contingency measures are a Moderate Area requirement. Contingency measures should represent one years worth of progress, amounting to a three percent reduction in baseline VOC and/or NO<sub>x</sub> emissions.

Mr. Poppen presented additional Moderate Area Requirements. Mr. Poppen added that Motor Vehicle Emissions Budgets are required for conformity. The Motor Vehicle Emissions Budgets will be developed from the attainment demonstration for both NO<sub>x</sub> and VOC. Mr. Poppen indicated that a Moderate Area is also required to maintain a motor vehicle inspection and maintenance program. ADEQ operates the program for the Maricopa nonattainment area. Mr. Poppen added that there is an emissions offset requirement, of 1.15 to 1, for major industries. He stated that three years of clean data is required at the monitors for years 2015, 2016, and 2017 to demonstrate that the region has met the standard. Mr. Poppen commented that perhaps the region may demonstrate attainment with years 2014, 2015, and 2016 data, however the 2016 ozone season has not yet occurred. Exceptional event demonstrations will be prepared as needed for ozone exceedances caused by wildfires or stratospheric intrusions.

Mr. Carpenter inquired if it is expected that the 93 measures in place will also attain the 0.070 ppm standard. Mr. Poppen replied that the measures will aid in attaining the 0.075 ppm and the 0.070 ppm standard. The federal tailpipe standards and existing measures have continuing benefit into the future. Mr. Poppen added that the region has an older vehicle fleet and as the fleet gets newer, the benefits of the tailpipe standards continue.

Mr. Carpenter asked if the 15 percent reduction is based on the 2011 baseline year. Mr. Poppen responded that the 15 percent reduction is taken from the 2011 baseline year minus biogenic emissions, the reduction only applies to anthropogenic sources.

Mr. Giudice inquired if EPA has responded to the wildfire ozone exceptional event submittal. Mr. Poppen replied that the exceptional event documentation has not yet been submitted, MAG is working with ADEQ on the ozone exceptional event documentation. He stated that this will be the first ozone exceptional event submittal. Mr. Poppen noted that new techniques are being developed that EPA will review in an initial consultation before the documentation is submitted. He commented that MAG staff are ensuring that the documentation will satisfy the EPA

requirements before submittal and that the ozone exceptional event documentation appears promising. In addition, there is also a grey area between existing exceptional event requirements in place and the proposed revisions to the Exceptional Events Rule. Mr. Poppen indicated that it is the hope that EPA will respond quickly to the ozone exceptional events documentation to exclude the event from the 0.070 ppm standard designations. He indicated that the ozone exceptional event would impact the design value.

Chair Conner asked if there has been discussion on transport from outside areas impacting ozone concentrations in the region. Mr. Poppen responded that transport is an issue that is usually factored into background ozone. He indicated that EPA will be hosting a workshop in February on background ozone and implementation issues in which transport would be included in the discussion. Discussion with EPA on options to not have transport related concentrations count against regions are expected. Mr. Poppen noted that this issue is especially common in the western states who generally have high background ozone that can be related to transport. He added that concerns on international transport have been included in MAG comments on the proposed exceptional event rule.

Hether Krause, Maricopa County Air Quality Department, commented that the New Source Review is being brought to the Maricopa County Board of Supervisors on February 3, 2016. Mr. Poppen thanked Ms. Krause for the update.

8. EPA Final Rule to Approve the Removal of Stage II Vapor at Gasoline Stations

Ms. Bauer discussed the EPA final rule to approve the removal of Stage II Vapor Recovery at gasoline stations. On November 16, 2015, EPA published a final rule to approve the MAG 2014 State Implementation Plan Revision for the Removal of Stage II Vapor Recovery in the Maricopa Eight-Hour Ozone Nonattainment Area. It was anticipated for EPA to issue a direct final rule, however due to comments received, it was withdrawn. Ms. Bauer indicated that EPA has addressed the comments and now published the final rule. She noted that it reduces the economic burden of keeping the Stage II vapor nozzles at gasoline stations that would result in a disbenefit in 2018. Ms. Bauer stated that not only are the devices installed in vehicles superior to Stage II, but they are also in widespread use.

9. Call for Future Agenda Items

Chair Conner indicated that the next meeting of the Committee has been scheduled for Thursday, February 25, 2016 at 1:30 p.m. He requested suggestions for future agenda items. With no further comments, the meeting was adjourned at approximately 2:15 p.m.



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

FEB 25 2016

OFFICE OF  
AIR AND RADIATION

**MEMORANDUM**

**SUBJECT:** Area Designations for the 2015 Ozone National Ambient Air Quality Standards

**FROM:** Janet G. McCabe   
Acting Assistant Administrator

**TO:** Regional Administrators  
Regions 1-10

The purpose of this guidance is to provide information on the schedule and process for initially designating areas for the purpose of implementing the 2015 primary and secondary ozone national ambient air quality standards (NAAQS). In addition, this memorandum identifies important factors that the Environmental Protection Agency intends to evaluate in making final nonattainment area boundary decisions for these standards. The EPA recommends that states and tribes also consider these factors in making their recommendations for area designations and nonattainment area boundaries. As for designations for prior ozone NAAQS, the EPA will also consider any other relevant information in making designation determinations. Please share this memorandum with state and tribal air agencies in your region.

On October 1, 2015, the EPA promulgated revised primary and secondary ozone NAAQS (80 FR 65292, October 26, 2015). In that action, the EPA strengthened both standards to a level of 0.070 parts per million, while retaining their indicators, averaging times, and forms. The EPA revised the ozone standards based on an integrated assessment of an extensive body of new scientific evidence, which substantially strengthens our knowledge regarding ozone-related health and welfare effects, the results of exposure and risk analyses, the advice of the Clean Air Scientific Advisory Committee, and consideration of public comments.

The revised primary standard provides increased protection for children, older adults, and people with asthma or other lung diseases, and other at-risk populations against an array of adverse health effects including reduced lung function, increased respiratory symptoms and pulmonary inflammation and asthma exacerbations; effects that contribute to emergency department visits or hospital admissions; and mortality. The revised secondary standard provides protection of natural forests from adverse growth-related effects and is expected to provide increased protection from other effects of potential public welfare significance, including crop yield loss and visible foliar injury.

## Clean Air Act Designation Requirements

Section 107(d) of the Clean Air Act (CAA) governs the process for initial area designations after the EPA establishes a new or revised NAAQS. Under section 107(d) of the CAA, states are required to submit area designation recommendations to the EPA. This submission must happen by a date specified by the EPA, which cannot be sooner than 120 days, or later than 1 year, after promulgation of the new or revised NAAQS. If, after careful consideration of these recommendations, the EPA intends to promulgate a designation different from a state's recommendation, then the EPA must notify the state at least 120 days prior to promulgating the final designation and must provide the state an opportunity to comment on the intended modification. The EPA may choose to modify a state's recommended designation as it relates to the status of an area or as it relates to the boundaries of an area. The CAA requires the EPA to complete the initial designation process within 2 years of promulgation of a new or revised NAAQS, unless the Administrator has insufficient information to make initial designation decisions in the 2-year time frame. In such circumstances, the EPA may take up to 1 additional year to make initial area designation decisions (i.e., no later than 3 years after promulgation of the standard). While section 107(d) of the CAA specifically addresses the designations process between the EPA and states, the EPA intends to follow the same process to the extent practicable for tribes that choose to make initial designation recommendations pursuant to section 301(d) of the CAA regarding tribal authority and the Tribal Authority Rule (TAR) (63 FR 7254, February 12, 1998). To provide clarity and consistency in doing so, in December 2011, the EPA issued a guidance memorandum concerning the involvement of tribes in the designations process.<sup>1</sup> In accordance with the TAR and the December 2011 tribal designations guidance, and in consultation with the tribes, the EPA intends to designate tribal areas on the same schedule as designations for states. If a state or tribe does not submit designation recommendations, then the EPA will promulgate the initial designations that the agency deems appropriate.

## Schedule for Initial Ozone Area Designations

State governors should submit, and tribes can choose to submit, their initial designation recommendations for the 2015 ozone NAAQS to the EPA no later than 1 year following promulgation of the revised NAAQS, i.e., by October 1, 2016. Because the form of the 2015 ozone NAAQS relies on a 3-year average, we recommend that states and tribes base their recommendations on air quality data from the 3 most recent years of quality assured monitoring data available at that time, i.e., 2013 to 2015. However, states and tribes may also have preliminary information about 2016 monitoring data that could help inform their recommendations. Based upon these monitoring data and any other available information, states and tribes should identify areas as attainment, nonattainment, or unclassifiable.<sup>2</sup> If

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<sup>1</sup> Guidance to Regions for Working with Tribes during the National Ambient Air Quality Standards (NAAQS) Designations Process. Memorandum from Stephen D. Page, Director, EPA OAQPS to Regional Administrators, Regions I-X. December 20, 2011. Available at <http://www.epa.gov/ttn/oarpg/t1/memoranda/20120117naaqsguidance.pdf>.

<sup>2</sup> For the initial area designations for the 1997 ozone NAAQS and the 2008 ozone NAAQS, the EPA used a designation category of "unclassifiable/attainment" for areas that were monitoring attainment and for areas that did not have monitors but for which the EPA had reason to believe were likely attainment and were not contributing to nearby violations. The EPA reserved the category "unclassifiable" for areas where the EPA could not determine based on available information whether the area was meeting or not meeting the NAAQS and the EPA had not determined that the area contributed to a nearby violation. While states can submit recommendations identifying areas as "attainment," the EPA expects to continue to use the "unclassifiable/attainment" category for designations for the 2015 ozone NAAQS.

the EPA believes it is necessary to make any modifications to a state's or tribe's initial recommendations, including area boundaries, then the EPA will notify the state or tribe by letter of the intended modification no later than 120 days prior to finalizing the designation. These notifications are commonly known as the "120-day letters." Consistent with the statutory requirement that the EPA designate areas no later than 2 years following promulgation of a revised NAAQS, the EPA expects to complete the initial area designations by October 1, 2017. Thus, the EPA intends to issue the 120-letters no later than June 2, 2017. If a state or tribe has additional information that it wants the EPA to consider with respect to a designation recommendation that the EPA plans to modify, then the EPA requests that such information be submitted no later than 60 days from the date of the 120-day letter. This schedule will ensure that the EPA can fully consider any such additional information prior to issuing final designations. Also, although section 107(d) of the CAA explicitly exempts the designation process from the public notice and comment rulemaking process, the EPA intends to consider public input in the designation process. Accordingly, we plan to provide a 30-day public comment period immediately following issuance of the 120-day letters responding to the designation recommendations from states and tribes.<sup>3</sup> Attachment 1 summarizes this anticipated schedule.

### **Identifying Nonattainment Areas**

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. Thus, the first step in the designation process is to identify air quality monitoring sites with data that show a violation of the 2015 ozone NAAQS. Violations are identified using data from Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors that are sited and operated in accordance with 40 CFR part 58. Procedures for using the air quality data to determine whether a violation has occurred are given in 40 CFR part 50 Appendix U, as revised in conjunction with the final rule for the 2015 ozone NAAQS (80 FR 65292, October 26, 2015). For designations for the 2015 ozone NAAQS, the EPA intends to evaluate areas using the most recent complete three consecutive calendar years of quality-assured, certified air quality data in the EPA Air Quality System (AQS).<sup>4</sup> In accordance with 40 CFR 58.15, states are required to certify their air monitoring data for the previous year by May 1 of each year. Although generally the EPA will use such data only if they have been certified by the reporting organization, data not certified by the reporting organization can nevertheless be used if the deadline for certification has passed and the EPA judges the data to be complete and accurate. We expect that in providing designation recommendations to the EPA by October 1, 2016, states and tribes will review and rely on air quality data from 2013 to 2015. States and tribes may also review and consider preliminary 2016 data, although those data cannot be relied on until they are either certified in accordance with 40 CFR 58.15 or the date for certification has passed. Air quality monitoring data from 2016 are required to be certified and quality assured by May 1, 2017. Because the certification date will have passed and the data will be available, the EPA expects to base final designation decisions by October 1, 2017, on data

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<sup>3</sup> Section 107(d)(2) explicitly provides that designations are exempt from the notice and comment provisions of the Administrative Procedure Act (APA). Likewise, designations under section 107(d) of the CAA are not among the list of actions that are subject to the notice and comment procedures of CAA section 307(d). Thus, neither the CAA nor the APA require notice and comment rulemaking for promulgation of the designations for these or any other NAAQS. However, the EPA intends to solicit direct public comment on its preliminary responses to the initial area designation recommendations of the states and tribes because we believe this process will be useful to gather additional information and to assure that the agency is more directly aware of issues raised by initial area designations.

<sup>4</sup> This information is available on the EPA's website at <http://www2.epa.gov/aqs>.

from 2014 to 2016.<sup>5</sup> For this reason, the EPA encourages states and tribes to review and consider preliminary 2016 air quality data in their designation recommendations. States and tribes may also update their designation recommendations based on 2016 data once the data have met the certification requirements.

The EPA notes that in past designations, some states have chosen to certify air quality data prior to the certification deadline (i.e., “early certify”) so that the EPA could rely on the newer data for designations. For multistate nonattainment areas, there have been situations where some, but not all, of the states with portions in the area have chosen to early certify their data. In such cases, the “most recent air quality data” for the area is a mix of two different 3-year periods – an earlier time period for those states that did not early certify data and a later time period for those states that chose to early certify. The most common situation is where one state that is part of the multistate area early certifies data that show attainment of the NAAQS. The other is where one state early certifies data that show a violation. The EPA’s position is that the agency cannot review mixed years of data to conclude that an area is attaining the standard; the decision must be based on the same 3-year period for all portions of the area. In contrast, if the early certified data for one state’s portion of a multistate area indicate a violation of the NAAQS, the EPA’s position is that the agency must consider the violating monitor and assess what nearby areas contribute to the violation.<sup>6</sup>

The process for evaluating the appropriate designation for areas that are not violating the NAAQS, but may be contributing to the violations of the NAAQS in a violating area, is discussed below in connection with the process for determining appropriate nonattainment area boundaries.

### **Exceptional Events and Designations**

When certain criteria are met, the CAA and the EPA’s implementing regulations specified in the Final Rule on the Treatment of Data Influenced by Exceptional Events (72 FR 13560, March 22, 2007)<sup>7</sup> allow for the exclusion of air quality monitoring data from design value calculations when there are exceedances caused by exceptional events. A design value describes the air quality status of a given location relative to the level of the NAAQS. A design value calculated using a data set from which exceptional event-influenced data have been excluded has the potential to affect initial area designations and nonattainment area classifications for the 2015 ozone NAAQS.

In the 2015 ozone NAAQS final rule, the EPA established schedules for air agencies to flag data influenced by exceptional events and submit related documentation for data that will be used in the initial designations process for the 2015 ozone NAAQS (*see* Attachment 2). Although some of these deadlines are accelerated compared to the general schedule timelines in the 2007 Exceptional Events

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<sup>5</sup> In the final rule for the 2015 ozone NAAQS, the EPA also finalized changes to the ambient air monitoring requirements applicable to the ozone NAAQS. In 32 states and the District of Columbia, the final rule extends the ozone season. The new ozone season requirements do not take effect until January 1, 2017.

<sup>6</sup> The Court of Appeals for the D.C. Circuit upheld this approach as reasonable. *Miss. Comm’n on Env’tl. Quality v. EPA*, 790 F.3d 138, 160 (D.C. Cir. 2015).

<sup>7</sup> On November 10, 2015, the EPA proposed revisions to the 2007 Exceptional Events Rule and announced the availability for public comment of a draft guidance document, which applies the proposed rule revisions to wildfire events that could influence monitored ozone concentrations. *See* 80 FR 72840, November 20, 2015. The EPA intends to finalize these rule revisions and the wildfire guidance by the October 1, 2016, date by which states, and any tribes that wish to do so, are required to submit their initial designation recommendations for the 2015 ozone NAAQS.

Rule, they were promulgated to align closely with the timing of the initial designations recommendations from states and tribes in October 2016 and/or the EPA's expected issuance of 120-day letters pertaining to designations by June 2017. These schedules reflect the EPA's interest in ensuring that we can fully consider exceptional events claims that could influence the final designations decisions.

The EPA regional offices are encouraged to work with states and tribes with exceptional events claims to prioritize and expedite the demonstration development and review process for those claims that have the potential to influence regulatory decisions, such as the initial designations process. Similarly, the EPA encourages states and tribes to contact and collaborate with the appropriate EPA regional office after identifying any exceptional events that influence ambient air quality concentrations in a way that could potentially affect designations for the 2015 ozone NAAQS. The EPA has developed interim exceptional events implementation guidance documents that air agencies can use when reviewing potential exceptional events and developing appropriate exceptional event demonstrations. Additional information and examples of exceptional event submissions and best practice components can be found at the EPA's exceptional events website located at <http://www2.epa.gov/air-quality-analysis/treatment-data-influenced-exceptional-events>.

### **Nonattainment Area Analyses and Boundary Determination**

The EPA believes that the boundaries for each nonattainment area should be evaluated and determined on a case-by-case basis considering the specific facts and circumstances unique to the area. Section 107(d) explicitly requires that the EPA designate as nonattainment not only the area that is violating the pertinent standard, but also those nearby areas that contribute to the violation in the violating area. After identifying each monitor that indicates a violation of the 2015 ozone NAAQS in an area, the EPA will determine which nearby areas contribute to the violation(s).

Ground-level ozone is not emitted directly into the air, but is formed by chemical reactions primarily between oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC) that are attributable to a variety of emission sources commonly found throughout urbanized areas. Because ozone and its precursor emissions are pervasive and readily transported, the EPA believes it is important to examine ozone-contributing emissions across a relatively broad geographic area associated with a monitored violation. Thus, for analyzing whether nearby areas contribute to a violating area, the EPA intends to consider information relevant to designations associated with the counties in the Combined Statistical Area (CSA) or, where appropriate, the Core Based Statistical Area (CBSA) in which the violating monitor(s) are located. The CSAs and CBSAs are delineated by the Office of Management and Budget (OMB) as part of their Metropolitan and Micropolitan Statistical Area program.<sup>8</sup> The CBSA is a collective term that refers to both Metropolitan Statistical Areas (MSAs) and Micropolitan Statistical Areas (Micropolitan Areas), which are distinguished by size. An MSA has at least one urban area with a population of at least 50,000. A Micropolitan Area has at least one urban area with a population of at

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<sup>8</sup> OMB adopted revised standards for defining Metropolitan and Micropolitan Statistical Areas on December 27, 2000 (65 FR 82229). These standards established the terms CSA and CBSA. In 2010, OMB further revised the standards for delineating Metropolitan and Micropolitan Statistical Areas (75 FR 37246, June 28, 2010). The statistical areas are delineated based on U.S. Census Bureau information. The EPA intends to use the 2010 standards and the associated lists of CSAs and CBSAs issued in February 2013. These lists and their geographic components are provided at <http://www.census.gov/population/metro/>.

least 10,000, but less than 50,000. Each CBSA consists of a county or counties associated with at least one urban core, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core.<sup>9</sup> A CSA includes two or more adjacent CBSAs.

The EPA previously reviewed relevant information associated with OMB statistical area boundaries when analyzing nonattainment areas for the 1997 and 2008 ozone standards. We believe this is a reasonable approach to ensure that the nearby areas most likely to contribute to a violating area are evaluated.<sup>10</sup> The EPA emphasizes it does not intend the statistical area boundary to be a presumed nonattainment area boundary. The area-specific analyses may support nonattainment boundaries that are smaller or larger than the CSA or CBSA.<sup>11</sup> Where a violating monitor is not located in a CSA or CBSA, the EPA intends to review relevant information associated with the county containing the monitor and, if appropriate, other adjacent nearby counties. The EPA will determine the nonattainment area boundaries through a weight-of-evidence analysis for the area based on synthesizing the assessments of the five factors identified below. In relatively urbanized areas, the nonattainment area boundary may include an entire metropolitan area. In rural locations, the nonattainment area boundary may include one or more small population centers, each with sources that contribute to a violating monitor. In some cases, the boundary for a nonattainment area may include portions of two or more states, thus resulting in a multistate area. This approach to designations has been upheld by numerous courts under a variety of challenges.

Consistent with past designations for ozone NAAQS, for area-specific analyses through which the EPA intends to determine area boundaries, the EPA will evaluate information relevant to five factors: air quality data, emissions and emissions-related data, meteorology, geography/topography, and jurisdictional boundaries. The EPA also recommends that states and tribes base their boundary recommendations on an evaluation of information relevant to these five factors. Attachment 3 describes these factors in general and provides guidance regarding analyses relevant to each of these factors.<sup>12</sup> Additionally, the EPA, states and tribes may identify and evaluate other relevant information or circumstances specific to a particular area to support nonattainment area boundary recommendations.

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<sup>9</sup> The geographic components of CBSAs are counties and equivalent entities (boroughs and census areas in Alaska, parishes in Louisiana, independent cities in Maryland, Missouri, Nevada, and Virginia, and municipios in Puerto Rico).

<sup>10</sup> The EPA notes that for the purpose of the designations for the 1-hour ozone standards at the time the CAA was amended in 1990, CAA section 107(d)(4)(A)(iv) and (v) specified the use of the OMB statistical areas as the boundaries that applied by operation of law for the then-existing nonattainment areas classified as Serious, Severe, and Extreme, unless a governor made a demonstration to the satisfaction of the EPA Administrator that a portion did not contribute.

<sup>11</sup> The Court of Appeals for the D.C. Circuit upheld the EPA's interpretation of the term "nearby" as being reasonable and consistent with the statute. *Miss. Comm'n on Env'tl. Quality v. EPA*, 790 F.3d 138, 160 (D.C. Cir. 2015).

<sup>12</sup> In the designation guidance for the 2012 PM<sub>2.5</sub> NAAQS, the EPA used these same five factors. In prior designation guidance for the ozone and PM<sub>2.5</sub> standards, the EPA identified nine factors to consider in making designation recommendations: emissions data, air quality data, population density and degree of urbanization, traffic and commuting patterns, growth rates and patterns, meteorology, geography/topography, jurisdictional boundaries, and level of control of emission source. In the area analyses to support the designations for the 2008 ozone standards, the EPA grouped the emissions-related factors together in the emissions and emissions-related data factor, resulting in five overall factors. The Court has upheld the EPA's use of a multi-factor test for designations multiple times. See *Mississippi Commission on Env. Quality v. EPA* 709 F.3d 138 (D.C. Cir. 2015); *ATK Launch Sys., Inc. v. EPA*, 669 F.3d 330 (D.C. Cir. 2012); *Catawba Cnty., v. EPA*, 571 F.3d 20 (D.C. Cir. 2009).

While the EPA generally believes it is appropriate to include the entire violating or contributing county in an ozone nonattainment area, we recognize that, in some cases, an assessment of relevant information may support inclusion of only part of a county. For example, as has been the case in past designations, there may be low elevation areas (e.g., valleys) with poor air quality in violation of the NAAQS due to restricted atmospheric dispersion where higher elevations (e.g., mountainous areas) in the same county can be shown not to have sources of emissions that contribute to the violation. Alternatively, partial county boundaries may be appropriate in situations where the sources located in a contributing county are located only in a portion of a large county that is otherwise not contributing to the nearby violations. Particularly in the western United States where counties are large, including only partial counties in a designated nonattainment area may be appropriate. For defining partial county boundaries, the EPA recommends the use of well-defined legal jurisdictional boundaries such as townships, census blocks, immovable landmarks (e.g., major roadways), or other permanent and readily identifiable boundaries.

In addition, as provided for in the December 20, 2011, guidance titled, “Policy for Establishing Separate Air Quality Designations for Areas of Indian Country,” tribes may recommend that the EPA designate areas of Indian country separately from the adjacent state areas.<sup>13</sup> This guidance provides for a nationally consistent approach for evaluating such designation recommendations from tribes. The policy was designed to recognize tribal sovereignty in air quality management matters affecting Indian country.

### **Nonattainment Area Classifications**

As provided in CAA section 181(a)(1), at the time of initial designations, the EPA will classify all nonattainment areas according to the severity of the ozone air quality problem. The classification categories are Marginal, Moderate, Serious, Severe-15, Severe-17 and Extreme. The EPA previously interpreted the air quality thresholds associated with each classification through rulemaking for both the 1997 and 2008 ozone NAAQS. We intend to take a similar approach for the 2015 ozone NAAQS and will finalize the rulemaking no later than the promulgation of the final designations.

Under CAA section 181(a)(4), the EPA has the discretion to reclassify a nonattainment area to a higher or lower classification (also known as a bump up or a bump down) within 90 days of the effective date of the initial designation and classification if the area would have been classified in another category had the area’s design value been 5 percent greater or 5 percent less than the level on which the initial classification was based. The EPA does not intend to exercise its authority independently to initiate a reclassification of an area to a higher or lower classification. Rather, the EPA intends to rely on a state or tribe to submit a request for such a reclassification. As part of the action to designate and classify areas in 1991 for the 1-hour NAAQS, the EPA developed criteria for evaluating a state’s request to reclassify a particular area to a lower classification. *See* 56 FR 56698, November 6, 1991. The EPA intends to continue to use the same approach for purposes of evaluating a request to reclassify an area to a lower classification for the 2015 ozone NAAQS. In the *Federal Register* action to designate areas for the 2015 ozone NAAQS, the EPA will provide the schedule for submitting a reclassification request under section 181(a)(4) that would allow sufficient time for the EPA to make a determination within the 90-day period allowed under the CAA.

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<sup>13</sup> Memorandum from Stephen D. Page, Director, EPA OAQPS to Regional Administrators, Regions I-X. December 20, 2011. Available at <http://www.epa.gov/ozone-designations>.

Section 181(b)(3) of the CAA allows a state to voluntarily request that the EPA reclassify a nonattainment area in that state to a higher classification. The EPA must grant the request. Multistate nonattainment areas present a special case because the area is not wholly in one state and classifications apply areawide. For multistate nonattainment areas, the EPA strongly encourages all of the states with a portion included in the nonattainment area to consult and agree prior to submission of a reclassification request. Section 181(b)(3) does not place a time limit on the opportunity for a state to request a voluntary reclassification of a nonattainment area to a higher classification. These voluntary reclassifications can be done at any time.

### **Rural Transport Areas**

The EPA recognizes that violations of the ozone standards in some rural areas may be almost entirely attributable to emissions from upwind areas and/or sources of background ozone. Section 182(h) provides the EPA with the discretion to treat an ozone nonattainment area as a “rural transport area” (RTA), provided the area meets certain criteria. Regardless of the area’s classification under section 181(a), an RTA is deemed to have fulfilled all ozone-related planning and control requirements if it meets the CAA’s planning requirements for areas classified as Marginal.<sup>14</sup> To qualify as an RTA, the EPA must determine that the nonattainment area boundary does not include and is not adjacent to any part of an MSA<sup>15</sup>, and that the area does not contain VOC and NO<sub>x</sub> emissions sources that make a significant contribution to monitored ozone concentrations in the area or in other areas. A nonattainment area that includes, or is adjacent to, any part of a Micropolitan Statistical Area or that is too sparsely populated to be included in a statistical area, may be able to qualify as an RTA.

States and tribes that believe a potential nonattainment area qualifies for treatment as an RTA are encouraged to request, as part of their recommendations, that the EPA use the section 182(h) authority and to work with the EPA to develop and review information that would satisfy the CAA’s RTA criteria. In general, the EPA expects a rural nonattainment area that has few or insignificant sources of ozone precursors to encompass a relatively small geographic area due to the lack of emission sources. Therefore, partial county boundaries may be appropriate. The EPA expects this to be especially relevant in the western United States, where many of the counties are large. A partial county nonattainment area located in a county that is adjacent to an MSA may still be able to qualify as an RTA provided that the nonattainment area boundary is not adjacent to the MSA boundary. The EPA intends to respond to any RTA request submitted during the designation process at the time the EPA promulgates the initial area designations. However, the EPA notes that a state or tribe may also request RTA treatment for a nonattainment area after the initial designations are completed. Attachment 3 provides information on conducting an analysis to support an RTA request.

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<sup>14</sup> The requirements applicable to ozone transport regions supersede the Marginal requirements for RTAs.

<sup>15</sup> The rural transport area criteria in section 182(h) restrict rural transport areas to those nonattainment areas that do not include and are not adjacent to any part of a “MSA” or “CMSA” as defined at the time of the 1990 CAA amendments. The OMB issued revised statistical area standards in 2000 that replaced the pre-existing MSA and CMSA definitions and established the terms “CBSAs” and “CSA.” In 2010, OMB further revised the standards. The CBSA is a collective term that includes MSAs and Micropolitan Statistical Areas. The EPA interprets the references to both MSA and CMSA in CAA section 182(h) to refer to OMB’s current definition of MSA. *See* 80 FR 12264, March 6, 2015. The EPA believes this interpretation of CAA section 182(h) is consistent with the original scope of CAA section 182(h) as promulgated in 1990.

## **Unclassifiable Areas**

In certain cases, there may be insufficient information to support a designation of nonattainment or attainment for an area. For example, there may be monitors that indicate an exceedance of the NAAQS, but the monitoring data may be incomplete or the monitors may not be sited and operated in accordance with the regulatory requirements of 40 CFR part 58. In recommending boundaries for an unclassifiable area, states should consider which nearby areas contribute to ambient air quality within the impacted area. The EPA notes that if sufficient information later becomes available indicating a monitor in the unclassifiable area is violating the NAAQS and the EPA redesignates the area to nonattainment, the EPA likely would conduct a weight-of-evidence analysis as described in Attachment 3 of this guidance to determine the appropriate area boundaries.

## **Attainment Areas**

Once the EPA has determined the boundaries for nonattainment areas (areas that are violating the NAAQS or contributing to a nearby violation) and any unclassifiable areas, the EPA intends to designate the remainder of the state as unclassifiable/attainment.<sup>16</sup> The EPA requests that states and tribes recommend how they would like the boundaries drawn for their unclassifiable/attainment areas. For designations for the 1-hour and two previous 8-hour ozone NAAQS, states have elected to draw boundaries for the unclassifiable/attainment areas in a variety of ways, including as “rest of state” or “entire state,” by Air Quality Control Regions, by county, by previous nonattainment area boundaries, or by a combination of methods. The EPA recommends that the boundaries of unclassifiable/attainment areas generally not be smaller than a county.

## **Summary**

This memorandum provides the EPA’s preliminary views on the process for determining initial area designations and boundaries for the 2015 ozone NAAQS. Any guidance contained herein is not binding on states, tribes, the public or the EPA. The EPA will make the designations determinations and nonattainment area boundary decisions in the final action that designates all areas for the 2015 ozone standards. When the EPA promulgates the initial area designations, those decisions will be binding on states, tribes, the public and the EPA as a matter of law.

Three attachments provide additional information relevant to the initial ozone area designations process. Attachment 1 is an anticipated timeline of important milestones in the initial area designations process for the 2015 ozone NAAQS. Attachment 2 identifies the promulgated exceptional event schedule for initial data flagging and submission of exceptional event demonstrations. Attachment 3 provides information on the five factors that the EPA intends to consider in evaluating and making decisions on nonattainment area boundaries and provides guidance regarding analyses relevant to support each of the factors. Attachment 3 also provides information on conducting an analysis to support an RTA request.

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<sup>16</sup> As indicated in footnote 2, in the initial designations for previous ozone NAAQS, the EPA used a designation category of “unclassifiable/attainment” for areas that were monitoring attainment and for areas that did not have monitors but for which the EPA had reason to believe were likely attainment and were not contributing to nearby violations. The EPA expects to continue this approach for designations for the 2015 ozone NAAQS.

Staff in the EPA's Office of Air Quality Planning and Standards are available for assistance and consultation throughout the initial area designation process. Questions on this guidance may be directed to Carla Oldham at (919) 541-3347 or Denise Scott at (919) 541-4280.

Attachments (3)

1. Anticipated Timeline For 2015 Ozone NAAQS Designation Process
2. Revised Schedule For Exceptional Event Flagging And Documentation Submission For Data To Be Used In Initial Area Designations For The 2015 Ozone NAAQS
3. Factors the EPA Plans to Consider in Determining Nonattainment Area Boundaries in Designations for the 2015 Ozone NAAQS, and Guidance on Analyses to Support these Factors

ATTACHMENT 1

ANTICIPATED TIMELINE FOR 2015 OZONE NAAQS DESIGNATION PROCESS	
Milestone	Date
The EPA promulgates 2015 Ozone NAAQS rule	October 1, 2015
States and tribes submit recommendations for ozone designations to the EPA	No later than October 1, 2016
The EPA notifies states and tribes concerning any intended modifications to their recommendations (120-day letters)	No later than June 2, 2017 (120 days prior to final ozone area designations)
The EPA publishes public notice of state and tribal recommendations and the EPA's intended modifications, if any, and initiates 30-day public comment period	On or about June 9, 2017
End of 30-day public comment period	On or about July 10, 2017
States and tribes submit additional information, if any, to respond to the EPA's modification of a recommended designation	No later than August 7, 2017
The EPA promulgates final ozone area designations	No later than October 1, 2017

ATTACHMENT 2

Revised Schedule for Exceptional Event Flagging and Documentation Submission for Data to be Used in Initial Area Designations for the 2015 Ozone NAAQS

<b>NAAQS Pollutant/ Standard/(Level)/ Promulgation Date</b>	<b>Air Quality Data Collected for Calendar Year</b>	<b>Event Flagging &amp; Initial Description Deadline</b>	<b>Detailed Documentation Submission Deadline</b>
<b>Ozone/ Primary and Secondary 8-hour Standards (0.070 parts per million) Promulgated October 1, 2015</b>	2013, 2014, 2015	July 1, 2016	October 1, 2016
	2016	May 31, 2017	May 31, 2017

## ATTACHMENT 3

### **Factors the EPA Plans to Consider in Determining Nonattainment Area Boundaries in Designations for the 2015 Ozone NAAQS, and Guidance on Analyses to Support these Factors**

For initial area designations for the 2015 ozone national ambient air quality standards (NAAQS), the Environmental Protection Agency will rely on monitoring data to identify areas to be designated nonattainment due to monitored violations of the standard. Consistent with the directives of the Clean Air Act (CAA) and with previous area designation processes, the EPA will then determine the appropriate nearby<sup>1</sup> areas to include within the nonattainment area boundary for the violating area, based on emissions that contribute to these violations. For each monitor or group of monitors indicating a violation of the NAAQS, the EPA intends to assess information related to five factors for the purpose of establishing the appropriate geographic boundaries for designated ozone nonattainment areas. The EPA will evaluate relevant information from the entire area (i.e., Combined Statistical Area / Core Based Statistical Area) containing the violating monitor(s) and any adjacent counties or nearby areas that have the potential to contribute. For those portions of the area where an evaluation of the available information clearly establishes that emissions sources do not contribute to exceedances at the violating monitor(s), the EPA believes it would be appropriate to exclude that portion of the area from the nonattainment area. This weight-of-evidence approach to determining area boundaries could result in nonattainment areas consisting of an entire metropolitan area, single counties, or, in cases supported by relevant evidence, partial counties, including partial counties within larger urban areas or in relatively isolated locations. While technical assessments can help to define the magnitude or relative magnitude of contribution from nearby areas, the EPA is not setting a threshold contribution level or “bright line” test for determining whether a contributing area should be included within the boundaries of a given nonattainment area. Section 107(d) of the CAA does not require the EPA to set a threshold contribution. As was done in prior NAAQS designations, the EPA believes that the contribution determination should be made through a case-by-case evaluation of the relevant facts and circumstances in each nonattainment area.

As a framework for area-specific analyses to support nonattainment area boundary recommendations and final boundary determinations, the EPA believes it is appropriate to evaluate the following five factors:

1. air quality data,
2. emissions and emissions-related data,
3. meteorological data,
4. geography/topography, and
5. jurisdictional boundaries.

The EPA notes that these five factors are comparable to the factors that states and tribes and the EPA have used successfully for analytical purposes in prior designations. The recommendation of these factors is not intended to indicate that other relevant information should not be considered in the initial area designations process, as appropriate. Where a state or tribe includes additional information or analysis as part of its recommendation, the EPA will evaluate that information as part of its review in determining the appropriate nonattainment area designation.

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<sup>1</sup> The Court of Appeals for the D.C. Circuit upheld the EPA’s interpretation of the term “nearby” as being reasonable and consistent with the statute. *Miss. Comm’n on Env’tl. Quality v. EPA*, 790 F.3d 138, 160 (D.C. Cir. 2015).

This attachment is intended to provide guidance regarding available data that states and tribes may wish to assess when evaluating these five factors. This guidance also provides insight into the EPA’s subsequent review and evaluation of the state and tribal nonattainment area boundary recommendations. The guidance offers suggestions about techniques and approaches; it does not contain requirements to be strictly followed and should not be read as prescriptive with respect to the specific techniques recommended.

The EPA recognizes that some of the recommended assessments can be resource intensive. To help mitigate this potential concern, the EPA intends to provide an Ozone Designations Mapping Tool to assist air agencies in developing their area designation and nonattainment boundary recommendations and to provide the relevant data to facilitate the analyses. The EPA will make the Ozone Designations Mapping Tool available on the ozone designations website.<sup>2</sup> The table below outlines the datasets that the EPA expects to make available to the public on the ozone designations website and the expected date of availability. Design values for the 3-year period 2012 – 2014 are currently available<sup>3</sup> and will also be posted on the ozone designations website. The EPA will update this website during the initial area designations process as other relevant datasets are identified.

**Datasets the EPA will Provide via the EPA Ozone Designations Website**

<b>Dataset</b>	<b>Expected Availability Date</b>
2013 – 2015 Ozone Design Values	Summer 2016
2014 – 2016 Ozone Design Values	Summer 2017
Nitrogen Oxide (NO <sub>x</sub> )/VOC Point sources and county level emissions and Vehicle Miles Traveled (VMT) from 2011 National Emissions Inventory (NEI) <sup>4</sup> version 2	March 2016
County and Census Tract Population	March 2016
HYSPLIT Trajectory data *	March 2016
Geography/Topography *	March 2016
Jurisdictional Boundaries *	March 2016

\* Separate datasets will not be provided. The information will be part of the web-based Ozone Designations Mapping Tool.

This guidance also offers recommendations concerning how states and tribes may wish to describe the basis for their initial designations recommendations. The EPA recommends that states and tribes articulate those recommendations in a narrative format. Thus, this guidance provides some direction regarding the content and structure of a narrative that describes the problem in a potential nonattainment area with monitors violating the NAAQS. A comprehensive narrative would articulate a conceptual model of the area that explains the nature and causes of the ozone air quality problem in the specific area, identifies the scope and scale of the air quality problem in that area, and describes all nearby emission sources that contribute to the problem.<sup>5</sup> For multistate or multi-jurisdictional areas, the EPA

<sup>2</sup> <http://www.epa.gov/ozone-designations/>

<sup>3</sup> <http://www3.epa.gov/airtrends/values.html>

<sup>4</sup> The 2014 NEI may not be available for initial designation recommendations. If it becomes available, then it will be considered in lieu of the 2011 NEI.

<sup>5</sup> Chapter 2.1 of the EPA’s Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze has a detailed description of how to develop a sound conceptual description of an air quality problem. The document is located at: [http://www3.epa.gov/ttn/scram/guidance/guide/Draft\\_O3-PM-RH\\_Modeling\\_Guidance-2014.pdf](http://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf).

encourages states and tribes to work collaboratively to develop a single narrative. However, states or tribes with areas contributing to potential multistate or multi-jurisdictional nonattainment areas could also develop a conceptual model that describes only the contribution from the areas within their jurisdiction to the larger nonattainment area, rather than attempting to describe the scope and scale of the air quality problem throughout the entire area. Where a single area-wide narrative on the causes of the ozone air quality problem is not developed, the EPA will collectively use the information in all relevant submittals, along with other relevant data, to make its decision on the extent and designation of the multi-state area.

The underlying analytical framework of the recommended narrative can be summarized as follows:

- Determine violating monitors with design values greater than the NAAQS and gather data that enables an assessment of potential nearby contributing areas and the emissions sources (NO<sub>x</sub> and VOC) in those areas.
- Assess and characterize the spatial and temporal differences in ozone concentrations within the area using data from Federal Reference Method (FRM)/Federal Equivalent Method (FEM) ozone monitors, as well as data from other FRM/FEM ozone monitors in nearby areas, if available.
- Areas may find it useful to assess and characterize the area-specific sensitivity of ozone formation to NO<sub>x</sub> and VOC emissions. The amount of ozone formed in any given area depends on the amount of NO<sub>x</sub>, VOC, and sunlight available to interact in a set of complex chemical reactions to form ozone. Depending on the local situation, peak ozone concentrations may be NO<sub>x</sub>-sensitive, VOC-sensitive, or a mix of the two depending upon other conditions. Understanding the relative role of local NO<sub>x</sub> and VOC emissions sources to ozone formation in the area violating the NAAQS helps identify which nearby emissions sources may be contributing to the monitored violations. Ambient data analyses and/or photochemical modeling simulations can be used to assess and characterize local ozone sensitivities.
- The information identified in the previous bullets can be evaluated in conjunction with emissions data and emissions-related data (e.g., vehicle miles traveled and population) to determine which source categories and source regions are contributing to the monitored violations.
- Once the emissions and air quality assessments have been evaluated, it is valuable to then assess the meteorology during the ozone season in the violating area. Weather patterns will have a large impact on the determination of contributing source regions. This analysis may further help to identify the relative magnitude of contributions from emission sources in nearby areas.
- Additionally, it may be useful to assess any geographic/topographic information, which could have consequences for transport, meteorology, and ozone formation in the area.
- Finally, all of the above assessments would be aggregated or synthesized into a consistent narrative that describes the relationship between sources in the analysis area and the measured exceedances. It will also be useful to assess jurisdictional considerations that could be relevant in identifying a nonattainment area boundary. This synthesis should represent a collective “weight-of-evidence” regarding the most appropriate boundaries for the nonattainment area.

While the general 5-factor framework is expected to be comprehensive and provide the foundation for each assessment of area boundaries, the extent of the analyses may vary on an area-by-area basis based on the nature, cause, and extent of the ozone air quality problem. This guidance suggests analyses of certain data sets that can be useful to assess which nearby areas contribute to nonattainment in a given area. In cases where more highly-resolved or newer data sets are available that are not explicitly mentioned in this guidance, states and tribes should consider their use. If these data are used, the EPA recommends that the states or tribes fully describe the data and their derivation in their supporting documentation for the designation recommendation.

The following sections provide more detail on the five factors and the weight-of-evidence approach that the EPA plans to consider when evaluating state and tribal recommendations and determining nonattainment area boundaries for the 2015 ozone NAAQS.

## 1. Air Quality Data

Ozone in the troposphere is a secondary pollutant formed by photochemical reactions of precursor gases and is not directly emitted from specific sources. Ozone is formed by atmospheric reactions involving two main classes of precursor pollutants: VOCs and  $\text{NO}_x$ . The formation of ozone is a complex, nonlinear function of many factors, including the intensity of sunlight, atmospheric mixing, the concentration of ozone precursors in the air, and the rates of chemical reactions of these precursors. Ozone is largely regional in nature with some higher values occurring in locations with ozone-conducive emissions, meteorological conditions, or transport patterns.

The first step in identifying an area to be designated nonattainment and to determine an appropriate nonattainment area boundary is to identify all monitored violations of the NAAQS using the most recently available design values. The EPA determines NAAQS compliance by considering the design value for each air quality monitoring site. The design value for the 2015 ozone NAAQS is the 3-year average of the annual 4<sup>th</sup> highest daily maximum 8-hour average concentrations.<sup>6</sup> Only ozone measurement data collected in accordance with the quality assurance (QA) requirements<sup>7</sup> using approved FRM/FEM monitors can be used for NAAQS compliance determinations. The EPA uses FRM/FEM measurement data residing in the EPA's Air Quality System (AQS) to calculate the ozone design values. Individual measurements that the EPA determines to be "exceptional" in accordance with the Exceptional Events Rule<sup>8</sup> (such as days with poor air quality caused by wildland fire) are not included in these calculations. State and tribal monitoring agencies are required to annually certify data submitted to AQS by May 1st of the subsequent year.<sup>9</sup> A tribal monitoring agency must certify its data if the tribe is monitoring for regulatory purposes. A tribe may also be specifically required to certify its data under terms of a grant from EPA. Tribes should consult with the appropriate Regional office on questions regarding regulatory monitoring and the certification process. The EPA typically extracts ambient data from AQS and calculates official design values for regulatory purposes shortly after the

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<sup>6</sup> The specific methodology for calculating the ozone design values, including computational formulas and data completeness requirements, is described in 40 CFR part 50, Appendix U.

<sup>7</sup> The QA requirements for ozone monitoring data are specified in 40 CFR part 58, Appendix A.

<sup>8</sup> Final Rule on the Treatment of Data Influenced by Exceptional Events (72 FR 13560, March 22, 2007). Note, on November 10, 2015, the EPA proposed revisions to the 2007 Exceptional Events Rule and issued a draft guidance document for wildfire ozone events. The EPA intends to finalize the rule revisions and guidance before the October 1, 2016, deadline for state and tribal designations recommendations.

<sup>9</sup> Data certification requirements can be found in 40 CFR, part 58.15. The EPA has developed guidance related to the data certification process that can be found at: <http://www3.epa.gov/ttn/amtic/qacert.html>.

certification due date. The design values calculated using this data undergo review by the EPA regional offices, and the final design values are then posted on a public website.<sup>10</sup> Initial state and tribal designation recommendations due October 1, 2016, should focus on design values based on air quality data from 2013 to 2015; however, the EPA intends to make final designation decisions using design values based on the 2014 to 2016 certified air quality data.

In addition to identifying monitors where the most recent design values violate the NAAQS, examining historical ozone air quality measurement data (including previous design values) can improve our understanding of the nature of the ozone ambient air quality problem in an area and thereby, inform decisions regarding the nonattainment area boundary. Since ozone concentrations are substantially impacted by meteorological conditions, including local wind patterns and synoptic weather patterns, the frequency and spatial distribution of exceedances of the standards can vary from year-to-year. This can be revealed by examining how frequently exceedances of the standard have occurred at the monitor with the highest design value for the area and at other monitor locations in the area under consideration, and how the spatial pattern in ozone concentrations across the area varies over time. This information can help to identify spatial and temporal patterns in the air quality of a given area and, when combined with other information from the 5-factor review, can help identify nearby areas with emissions sources contributing to an area with a monitored violation.

## **2. Emissions and Emissions-Related Data**

The sources and levels of emissions of ozone-precursor pollutants are important factors in the initial area designations process. As noted above, ambient ozone is formed through complex atmospheric processes. Air quality in a nonattainment area is also typically the result of a combination of regional and local emissions. In the designations process, for each area with a violating monitor, the EPA evaluates the current emissions data from nearby counties to assess each county's potential contribution to ozone concentrations at the violating monitor(s) in the area under evaluation. It should be noted that while ozone can be transported many hundreds of miles and sources of emissions that are very distant from the potential nonattainment area may also contribute to monitored ozone levels, these far upwind emissions are not considered in the designation determination to be "nearby" sources.<sup>11</sup> Therefore, the evaluation of the area is also a means to differentiate between the impact of emissions from more distant sources and from sources in nearby areas that should be included as part of the designated nonattainment area. For initial area designations, we intend to examine current emissions of identified sources of NO<sub>x</sub> and VOC, as guided by the local conceptual description of NO<sub>x</sub>- and VOC-limited areas. The EPA expects that some local NO<sub>x</sub> and VOC emissions contributions from mobile and stationary sources and transport from nearby areas can contribute to higher ozone levels at the violating monitors. Analyses should include reviewing data from the latest NEI and other relevant sources, as available. The analysis should also include examining the magnitude of county-level emissions and the geographic locations of NO<sub>x</sub> and VOC sources.

Analyzing the magnitude and spatial extent of emissions provides information about potential spatial gradients in ozone precursor emissions. Combining these analyses (e.g., magnitude of emissions and point of release) with meteorological information can inform the evaluation of the degree of contribution from nearby areas. In addition, if the most recent emission inventories do not reflect conditions for the

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<sup>10</sup> Design values for ozone can be found at: <http://www3.epa.gov/airtrends/values.html>.

<sup>11</sup> The Court of Appeals for the D.C. Circuit upheld the EPA's interpretation of the term "nearby" as being reasonable and consistent with the statute. *Miss. Comm'n on Envtl. Quality v. EPA*, 790 F.3d 138, 160 (D.C. Cir. 2015).

same time period as the air quality data being used to determine the nonattainment designation, then information provided on changes in emissions will be considered. These changes may include emissions reductions due to permanent and enforceable emissions controls and may include emissions increases from new sources or at existing sources.

The EPA believes that it will be appropriate to use 2011 NEI version 2 data because that will be the most recent national emissions inventory information available at the beginning of the designations process.<sup>12</sup> The NEI includes data, generally on an annual basis at the county level. Emissions from large stationary sources at a specific location are also available. More detailed inventories (higher resolution than county estimates) may also be available for some areas, although not in the NEI.<sup>13</sup> To supplement the NEI county-level data, the EPA will provide information that could be used to understand spatial allocation within a county including the location and magnitude of large point sources. Additionally, states and tribes may wish to review gridded emissions data, which are generally available at 12 km grid resolution. These data, which can be provided by the EPA, have been created to cover emissions levels in the contiguous 48 states for 2011. These gridded emissions data can be provided by the EPA on an annual basis or for shorter time periods such as the ozone season.

Additionally, states or their regional organizations may submit their own emissions information or versions of gridded emissions for more recent years.

#### *Population and degree of urbanization*

The EPA has consolidated population and degree of urbanization within the emissions and emissions-related data factor as these elements supplement and help to inform the analysis of emissions data. The EPA intends to provide data such as population by county and census tract. An analysis of population and degree of urbanization may provide indicators of the location of emissions-related activities within the county.

The EPA expects that states and tribes may have independently developed datasets to better inform these elements. The EPA believes that population information such as the location and recent trends in population growth and the patterns of residential and commercial development can serve as potential indicators of the probable location and magnitude of emissions sources that may contribute to ozone concentrations in a given nonattainment area.

#### *Traffic and commuting patterns*

The EPA recommends examining the location of major transportation arteries and information on traffic volume and commuting patterns in and around the area containing a violating monitor. This may include examining the number of commuters in each nearby county who drive to a county within the area that has a violating monitor, the percent of total commuters in each county who commute to other counties

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<sup>12</sup> The 2014 NEI may not be available for initial designation recommendations. If it becomes available, then it will be considered in lieu of the 2011 NEI.

<sup>13</sup> The EPA develops gridded emissions by applying temporal (e.g., seasonal variations in emissions as reported to the NEI) and spatial (e.g., incorporates latitude and longitude location information as reported to the NEI) adjustments to the county-based NEI estimates to produce the more finely resolved gridded emissions. These emissions are generally available at a 12 km resolution, but may be available at finer resolutions for certain localities that have been the focus of special modeling studies.

with violating monitors within the metropolitan area, and the total VMT for each county. Areas with higher VMT and commuting activity can be an indicator of the location of mobile source emissions that may contribute to ozone concentrations at the violating monitor.

The NEI is one source of the county-wide VMT data and facilitates relative comparisons of traffic and commuting patterns between counties in a larger area.<sup>14</sup> However, more detailed assessments provided by states or tribes could help to highlight the magnitude and location of emissions activity. The EPA will provide gridded VMT data; however, these estimates may not correspond directly with VMT data developed by state or local agencies.

### 3. Meteorology

Evaluation of meteorological data helps to assess the fate and transport of emissions contributing to ozone concentrations and to identify areas potentially contributing to the monitored violations. Results of meteorological data analysis may support determination of nonattainment area boundaries.

One basic type of meteorological analysis involves assessing potential source-receptor relationships in the area on days with high ozone concentrations using wind speed and wind direction data. A more sophisticated and accurate assessment involves modeling air parcel trajectories to help understand complex transport situations. The HYSPLIT (HYbrid Single-Particle Lagrangian Integrated Trajectory) modeling system may be useful for some areas to produce trajectories that illustrate the 3-dimensional paths traveled by air parcels to a violating monitor. The EPA will provide back trajectories for violating monitors, for each day of high ozone concentration (i.e., daily maximum 8 hour values that exceed the NAAQS) at those monitors. States or tribes can choose to do additional HYSPLIT modeling and guidance is provided below. If a trajectory model other than HYSPLIT is used, states or tribes should provide detailed information about the technique, how it is used, and why it is preferred over HYSPLIT.

*Preparing and running a HYSPLIT modeling analysis*

Atmospheric trajectory models use meteorological data and mathematical equations to simulate 3-dimensional transport in the atmosphere. Generally, the position of particles or parcels of air with time are calculated based on meteorological data such as wind speed and direction, temperature, humidity, and pressure. Model results depend on the spatial and temporal resolution of the atmospheric data used, and also on the complexity of the model itself. The HYSPLIT model<sup>15</sup> is frequently used to produce trajectories for assessments associated with determining nonattainment area boundaries. HYSPLIT contains models for trajectory, dispersion, and deposition; however, analyses recommended here only use the trajectory component. The trajectory model, which uses existing meteorological forecast fields from regional or global models to compute advection (i.e., the rate of change of an atmospheric property caused by the horizontal movement of air) and stability, is designed to support a wide range of simulations related to the atmospheric transport of pollutants.

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<sup>14</sup> NEI county-level VMT estimates are developed in a top-down approach from Federal Highway Administration estimates of statewide VMT by road class that are allocated to counties based on surrogates. Accordingly, the NEI estimates do not always compare well to detailed area-specific studies that are developed in a more robust way (e.g., travel demand model data).

<sup>15</sup> <http://ready.arl.noaa.gov/HYSPLIT.php>

HYSPLIT trajectories may be produced for various combinations of time and locations. When HYSPLIT trajectories are produced for specific monitor locations for days of high ozone concentrations (e.g., daily maximum 8-hour values that exceed the NAAQS), the results illustrate the potential source region for the air parcel that affected the monitor on the day of the high concentration.

While HYSPLIT is a useful tool for identifying meteorological patterns associated with exceedance events, HYSPLIT trajectories alone do not conclusively indicate contribution to measured high concentrations of ozone. Therefore, they cannot be used in isolation to determine inclusion or exclusion of an area within a nonattainment boundary. While a HYSPLIT trajectory analysis alone cannot yield a conclusion that a particular region contributes to ozone concentrations, a set of HYSPLIT trajectories that show no wind flow from a particular region on any day with high ozone concentration measurements might provide support for discounting that region as contributing to ozone concentrations. HYSPLIT trajectories are very useful in combination with information on the location and magnitude of ozone precursor emissions sources.

A HYSPLIT backward trajectory, the most common trajectory used in assessments associated with determining nonattainment area boundaries, is usually depicted on a standard map as a single line extending in two dimensional (x,y) space from a starting point, regressing backward in time as the line extends from the starting point. An individual trajectory can have only one starting height; HYSPLIT can plot trajectories of different starting heights at the same latitude/longitude starting point on the same map, automatically using different colors for the different starting heights. HYSPLIT will also include a vertical plot of the trajectories in time, with colors corresponding to the same trajectory in the (x,y) plot. This display can be easily misinterpreted as having finer accuracy than the underlying model and data.

It is important to observe the overall size of the plot, its width and length in kilometers, and consider the size of an individual grid cell in the input meteorological data set. These input grid cells are usually 40 km in width and length, so the total area of a trajectory plot may be limited. It is also important to understand the trajectory line itself. The line thickness is predetermined as a user option, so its thickness does not imply coverage other than to represent the centerline of an air parcel's motion calculated to arrive at the starting location at the starting time. Uncertainties are clearly present in these results, and these uncertainties change with trajectory time and distance traveled. One should avoid concluding a region is not along a trajectory's path if the center line of that trajectory missed the region by a relatively small distance.

Detailed information for downloading, installing, and operating HYSPLIT can be found at these websites:

<http://ready.arl.noaa.gov/HYSPLIT.php>

[http://www.arl.noaa.gov/documents/reports/hysplit\\_user\\_guide.pdf](http://www.arl.noaa.gov/documents/reports/hysplit_user_guide.pdf)

<http://www.arl.noaa.gov/documents/reports/arl-224.pdf>

HYSPLIT's many setup options allow great flexibility and versatility. However, careful selection and recording of these options is necessary to provide reviewers the ability to reproduce the model results. The following paragraphs describe the options that should be recorded, at a minimum, to enable another party to reproduce a HYSPLIT model run.

Model Version. If the HYSPLIT trajectory is produced via the NOAA Air Resources Laboratory (ARL) website ([http://ready.arl.noaa.gov/HYSPLIT\\_traj.php](http://ready.arl.noaa.gov/HYSPLIT_traj.php)), note the "Modified:" date in the lower-left corner of the webpage, as well as the date the trajectory was produced. If the trajectory is produced using a stand-alone version of HYSPLIT, note *the release date*, which will be displayed after exiting the main graphical user interface (GUI) screen.

Basic Trajectory Information. Note the *starting time* (YY MM DD HR), the *duration of the trajectory* in hours, and whether the trajectory is *backward or forward*. Note the *latitude and longitude*, as well as the *starting height*, for each *starting location*. Starting height is given by default in meters above ground level (AGL) unless another option is selected. Starting heights are typically no less than 100 meters AGL to avoid direct interference of terrain, and are typically no greater than 1500 meters AGL to confine the air parcel within the mixed layer. Some trajectories can escape the mixed layer, and this result would be considered in the interpretation.

Starting height and starting location will identify the 3-dimensional location of the trajectory's latest endpoint in time if a backward trajectory is selected (i.e., the start of a trajectory going backward in time). Backward trajectories used in analyses associated with designations typically have a trajectory duration of 24 hours. Considering the geographic proximity of areas under consideration in ozone designations, air parcel locations within this proximity are almost always within the last 24 hours of travel to the trajectory endpoint. Air parcel locations more than 24 hours prior to trajectory end time are rarely found within this proximity.

Input Meteorological Data Set. Note the *input meteorological data set* used in the HYSPLIT model run. The *original file name* provides sufficient information to identify the data set.

Meteorological data fields to run the model are already available for access through the HYSPLIT menu system, or by direct FTP from ARL. The ARL web server contains several meteorological model data sets already converted into a HYSPLIT compatible format in the public directories. Direct access via FTP to these data files is built into HYSPLIT's graphical user interface. The data files are automatically updated on the server with each new forecast cycle. Only an email address is required for the password to access the server. The ARL analysis data archive consists of output from the Global Data Analysis System (GDAS) and the NAM Data Analysis System (NDAS - previously called EDAS) covering much of North America. Both data archives are available from 1997 in semi-monthly files (SM). The EDAS was saved at 80 km resolution every 3-hours through 2003, and then at 40 km resolution starting in 2004. Detailed information on all meteorological data available for use in HYSPLIT can be found in the HYSPLIT4 Users Guide.<sup>16</sup>

It is possible to run the stand-alone HYSPLIT program on user-supplied meteorological data. This could be advantageous when the horizontal resolution or model physics used by ARL is inferior to other existing datasets. If a state or tribe chooses to use meteorological data not already on the ARL web server, the state or tribe should document the reason for this choice and should provide detailed information about the substituted meteorological dataset.

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<sup>16</sup> [http://www.arl.noaa.gov/documents/reports/hysplit\\_user\\_guide.pdf](http://www.arl.noaa.gov/documents/reports/hysplit_user_guide.pdf)

Vertical Motion Options. HYSPLIT can employ one of five different *methods for computing vertical motion*. A sixth method is to accept the vertical motion values contained within the input meteorological data set, effectively using the vertical motion method used by the meteorological model that created the data set. In a typical HYSPLIT application, EPA selects the option to accept the vertical motion values contained within the input meteorological data set. The user should note which method was selected as well as the value chosen for *the top of the model*, in meters AGL.

Trajectory Display Options. The HYSPLIT trajectory model generates a text output file of end-point positions. The end-point position file is processed by another HYSPLIT module to produce a Postscript display file or output files in other display formats. Some parameters, such as map projection and size, can be automatically computed based on the location and length of the trajectory, or they can be manually set by the user. While these display options do not directly affect the trajectory information itself, noting these options will eliminate possible misinterpretation of identical trajectories because of differing display options. An important display option is the choice of *vertical coordinate*, usually set to meters AGL for these assessments.

#### **4. Geography/topography**

Consideration of geography or topography can provide additional information relevant to defining nonattainment area boundaries. Analyses should examine the physical features of the land that might define the airshed. Mountains or other physical features may influence the fate and transport of emissions as well as the formation and distribution of ozone concentrations. For example, valley-type topographical features can cause local stagnation episodes where vertical temperature inversions effectively “trap” air pollution. Under these conditions, emissions can accumulate leading to periods of elevated ozone concentrations. These inversions may be limited in extent and, therefore, the areas with inversions may need to be separated from areas at altitudes above the top of the inversion layer in locations where exceedances are associated with this type of event. Conversely, higher altitude mountaintop sites might experience a greater influence from long range transport and associated transport episodes in comparison to nearby areas at a lower altitude. Similarly, the absence of any such geographic or topographic features may also be a relevant consideration in selecting boundaries for a given violating area.

#### **5. Jurisdictional boundaries**

Once the geographic extent of the violating area and the nearby area contributing to violations is determined, existing jurisdictional boundaries may be considered for the purposes of providing a clearly defined legal boundary and carrying out the air quality planning and enforcement functions for nonattainment areas. Examples of jurisdictional boundaries include, but are not limited to: counties, air districts, areas of Indian country, metropolitan planning organizations, and existing nonattainment areas. If an existing jurisdictional boundary is used to help define the nonattainment area, it must encompass all of the area that has been identified as meeting the nonattainment definition. Where existing jurisdictional boundaries are not adequate to describe the nonattainment area, other clearly defined and permanent landmarks or geographic coordinates should be used.

## Weight-of-Evidence Analysis Based on the Five Factors

In making designations recommendations for violating areas or contributing areas, and the nonattainment area boundaries for such areas, the EPA recommends that states and tribes consider the five recommended factors together and use a weight-of-evidence approach for this analysis. As explained above, the starting point for evaluating the factors is the air quality analysis. Of particular importance are the location(s) of the violating monitor(s) based on 2013-2015 data<sup>17</sup> and the characteristics of those violations. Once the characteristics of the violations are established, one can begin to assess which nearby emissions sources and source regions may have contributed to those violations. This contribution evaluation should generally consider the location and magnitude of emissions, and the potential for these emissions to contribute to the ambient conditions at the violating monitors as informed by the meteorological and geographical/topographical analysis factors. The guiding principle for this evaluation should be to include, within the boundaries of the nonattainment area, nearby areas with emissions of ozone precursors (NO<sub>x</sub> and VOC) that contribute to the violating monitor on days that exceed the NAAQS. The final factor, jurisdictional boundaries, should be considered to refine the nonattainment area boundary to ensure meaningful air quality planning and regulation during the NAAQS implementation phase. As in prior designations for ozone NAAQS, the EPA believes that it is appropriate to use already-established air planning boundaries where possible, to assure continued effective planning and implementation.

The EPA believes that the 5-factor analysis described here is generally comprehensive and intends to use the weight-of-evidence approach based on these five factors in establishing the nonattainment boundaries for the 2015 ozone NAAQS. As noted earlier, the EPA intends to provide an Ozone Designations Mapping Tool to assist air agencies in developing their area designation and nonattainment boundary recommendations and to provide the relevant data to facilitate the analyses. The EPA will make the Ozone Designations Mapping Tool available on the ozone designations website.

The EPA also recognizes the potential value of additional data or methodologies not already specified in this guidance that states or tribes may elect to submit to qualitatively describe or quantify the relative contributions from contributing areas to violating monitors. In some cases, these supplemental methodologies (e.g., source apportionment modeling) may be used to synthesize the various factors, such as air quality, emissions, and meteorological data into quantitative estimates of the contributions from specific areas.

### Source Apportionment Modeling

Source apportionment modeling refers to an augmented instrumentation of traditional regional photochemical Eulerian models which allows the model to track the impacts of NO<sub>x</sub> and VOC emissions from user-defined source regions on predicted ozone concentrations in a particular grid cell. Emissions are tracked with source apportionment through ozone formation, transport, and deposition processes in the host photochemical model.<sup>18,19</sup> Source apportionment modeling combines into a single analysis

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<sup>17</sup> The EPA intends to consider 2014-2016 data as soon as these data are available.

<sup>18</sup> Dunker, A. M., Yarwood, G., Ortman, J. P., and Wilson, G. M. Comparison of source apportionment and source sensitivity of ozone in a three-dimensional air quality model, *Environ. Sci. Technol.*, 36, 2953–2964, 2002.

<sup>19</sup> Kwok, R.H.F, Baker, K.R., Napelenok S.L., Tonnesen, G.S. Photochemical grid model implementation and application of VOC, NO<sub>x</sub>, and O<sub>3</sub> source apportionment, *Geoscientific Model Development*, 8(1), 99-114, 2015.

several of the factors that the EPA believes are important for determining nonattainment area boundaries: air quality data, emissions, meteorology, and geography/topography. Consequently, this modeling may help identify possible areas for inclusion in the nonattainment area because of their contribution to violations in nearby areas with violating monitors.

The EPA does not require states or tribes to conduct source apportionment modeling as part of the initial area designations process for the 2015 ozone NAAQS. However, some states used source apportionment modeling in their boundary determinations for the 2008 ozone NAAQS. The EPA is not producing source apportionment modeling assessments for any areas as part of the initial area designations process for the 2015 NAAQS. Like other aspects of the factor analyses, source apportionment modeling produces information that can help to determine potential boundaries for the area that should be designated nonattainment. Where provided by states or tribes, source apportionment results will be considered as just one part of an overall assessment of the potential nonattainment area boundaries. The EPA recognizes that while there are uncertainties associated with interpreting source apportionment outputs, it can be a useful technique for comparing the relative contribution of individual county emissions of ozone precursor emissions in a more sophisticated manner.

If a state chooses to conduct source apportionment modeling, the EPA recommends that model episodes are of sufficient duration to capture the entire range of meteorological and emissions conditions that can lead to ozone violations in a particular area. Further, we recommend that states and tribes follow the relevant EPA guidance for photochemical modeling attainment demonstrations<sup>20</sup> when establishing their source apportionment modeling platform. In establishing the parameters of a source apportionment modeling exercise, the violating monitor(s) would typically comprise the receptor(s) in the analysis. When summarizing the outputs from the source apportionment modeling, it is suggested that the relative contributions from nearby source regions be compared against one another. It is expected that the focus of the source apportionment modeling would be identifying each source region's contribution to ozone levels near or exceeding the level of the ozone NAAQS. While the EPA does not believe it is appropriate to establish an *a priori* threshold contribution level, a relative comparison of the modeled contribution of each source region should reveal where there are potential contributing sources that should be included within the nonattainment area.

## **Rural Transport Areas**

Section 182(h) of the CAA identifies a category of ozone nonattainment areas referred to as rural transport areas (RTAs). An RTA is treated as a Marginal area for purposes of ozone-related planning and control requirements, regardless of the area's classification. In order for an area to qualify as an RTA, the nonattainment area must meet two criteria. First, the nonattainment area cannot be adjacent to, or include any part of a metropolitan statistical area, as defined by the Office of Management and Budget. Second, the NO<sub>x</sub> and VOC emissions from sources within the area cannot make a significant contribution to ozone concentrations in the area itself, or in other areas. The first criterion was discussed earlier in this guidance memo. This portion of the document provides guidance to states and tribes regarding the information that should be submitted to the EPA as part of a demonstration for the second criterion. The EPA believes that a multi-factor, weight-of-evidence approach is needed to demonstrate

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<sup>20</sup> Draft Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze. December 2014. Located at: [http://www3.epa.gov/ttn/scram/guidance/guide/Draft\\_O3-PM-RH\\_Modeling\\_Guidance-2014.pdf](http://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf).

that emissions within a potential RTA do not contribute significantly to the local ozone nonattainment problem or to ozone nonattainment downwind. The factors are similar in nature to the ones described above to guide development of nonattainment designation boundaries: air quality data, emissions estimates, meteorological transport patterns, and geography/topography.

In most instances, the first step in demonstrating that the NO<sub>x</sub> and VOC emissions in a potential RTA do not significantly contribute to ozone in the area itself is the development of a conceptual description of the nature of ozone exceedances in the area.<sup>21</sup> This conceptual description should summarize the spatial and temporal patterns of ozone exceedances in the area and begin to identify hypotheses as to which processes and sources are likely most responsible for those high ozone values. To the extent that the conceptual description suggests that transport from upwind areas is largely responsible for the local ozone problem, the RTA demonstration should then further analyze existing ambient monitoring data, meteorological transport patterns, and local and regional emissions estimates to construct a weight-of-evidence argument that concludes the upwind contributions dominate any local contributions.

When compiling a weight-of-evidence based RTA demonstration, it may be valuable to consider an analysis of regional surface ozone monitoring data to see if there is a clear signal of an ozone plume being generated over an upwind area and being transported downwind as the day proceeds, reaching the potential RTA area after the time in which local photochemical production of ozone would have ceased. It also may be useful to look at any available ozone precursor data in or near the local area as a way to assess the chemical nature of a particular air mass. One indication of a photochemically-aged ozone plume that was likely formed from upwind emissions and transported away from its source origin, would be situations in which high ambient ozone and total reactive nitrogen (NO<sub>y</sub>) values were observed in locations with relatively low ambient concentrations of NO<sub>x</sub>. In other cases, there may be data available about the 3-dimensional chemical state of the atmosphere (e.g., from aircraft, satellites, or other relevant instrumentation) that can help characterize the role of transported ozone from upwind areas.

In terms of the meteorological factor, using HYSPLIT to estimate the back trajectories of air parcels on high ozone days can provide valuable information about the transport path and potential origin of the ozone pollution. We expect that for most areas that would qualify for treatment as an RTA, most, if not all, back trajectories on high ozone days would suggest long-path trajectories with source origins well away from the local area and with little potential for recirculation of the local emissions.

Finally, for the emissions factor, the relative magnitude of local emissions in any potential RTA is also a key consideration in determining if local sources contribute significantly to the ozone problem in the area. If the NO<sub>x</sub> and VOC inventories for a particular area are appreciably less than those for other areas for which there is evidence demonstrating contribution to the ozone nonattainment problem (i.e., from the ambient and meteorological analyses), this provides support for concluding that the transport component is overwhelming any local ozone production. A simple approach to assessing the potential importance of local emissions is to compile county-level emissions inventory estimates for each county potentially along the trajectories that are expected to contribute to ozone in the potential RTA. If the emissions from upwind contributing counties are substantially larger than what is being emitted locally, then this suggests that the impact of the local emissions may not be significant. The EPA recommends that any comparative assessments of emissions be based on the most current available inventories.

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<sup>21</sup> Chapter 2.1 of EPA's Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze has a detailed description of how to develop a sound conceptual description of an air quality problem. [http://www3.epa.gov/ttn/scram/guidance/guide/Draft\\_O3-PM-RH\\_Modeling\\_Guidance-2014.pdf](http://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3-PM-RH_Modeling_Guidance-2014.pdf).

It is also possible to assess the contribution of local NO<sub>x</sub> and VOC emissions to the ozone in the area using photochemical air quality modeling. “Zero-out” modeling can provide an estimate of the total local impact by calculating the difference between the model estimates from a base case run and the estimates from a simulation in which the man-made emissions of NO<sub>x</sub> and VOC are removed from the potential RTA. If the response of the model is small (i.e., even with zero local emissions, there is still a local ozone problem due to transport), it would support a determination that local emissions sources make a small contribution to ozone concentrations in the area. Additionally, source apportionment modeling can be used to estimate the contributions of user-defined source regions (or source categories) to total modeled ozone in an area. These types of modeling analyses can be resource-intensive and the EPA does not expect areas to rely on these models unless they have already been completed for other purposes. In some cases, there may be existing regional or national modeling simulations that can be leveraged to support an RTA demonstration. States and tribes are encouraged to consult with their EPA regional office on potentially available information.

The analyses described above focus on showing that local emissions do not significantly impact high ozone in the local area. Similar analyses would be appropriate to demonstrate that local emissions do not significantly impact ozone concentrations in other areas. It is unrealistic to expect that a state or tribe could analyze impacts on every possible downwind area. Instead, we recommend that the state or tribe consider the effects of local emissions on the nearest potential nonattainment areas, in a qualitative sense using some of the data analyses described above.

In general, the EPA believes the geographical restrictions of section 182(h)(1) will limit the number of areas eligible for treatment as an RTA. States or tribes requesting that the EPA treat an ozone nonattainment area as an RTA are encouraged to conduct the technical analyses discussed above as part of a multi-factor, weight-of-evidence demonstration. Documentation that describes each analysis performed and the aggregate determination that emissions in the candidate area do not make a significant contribution to ozone concentrations in that area or in other downwind (current or potential) nonattainment areas should be submitted to the appropriate EPA regional office. Any state or tribe seeking an RTA determination for an area is encouraged to work closely with the appropriate EPA regional office to coordinate the analytical plan for such a demonstration.