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**RESOURCE DOCUMENT FOR 1997 OZONE NAAQS AREAS:
SUPPORTING INFORMATION FOR STATES DEVELOPING MAINTENANCE PLANS**

PURPOSE

The purpose of this resource document is to provide technical information that may be helpful for a state wishing to develop and submit a revision of its state implementation plan (SIP) to ensure maintenance of the 1997 ozone National Ambient Air Quality Standards (NAAQS). This document includes information addressing ambient air quality monitoring data, air quality modeling, and emissions inventory data. Note that this resource document also provides information that may be useful for states wishing to pursue the limited maintenance plan (LMP) option.

BACKGROUND

- The EPA revoked the 1997 ozone NAAQS effective April 5, 2015. Under the EPA’s regulations implementing the ozone NAAQS,¹ states were no longer responsible, under certain conditions, for developing and submitting maintenance plans for former 1997 ozone NAAQS nonattainment areas. See 40 Code of Federal Register (CFR) 51.1105(d). Environmental groups filed a petition for judicial review of the EPA’s regulation, challenging certain aspects of the decision. Among other things, the groups challenged the Agency’s rule that excused “orphan maintenance areas,” i.e., areas that had been redesignated to attainment for the 1997 ozone NAAQS and were initially designated attainment for the 2008 ozone NAAQS, from submitting a second maintenance plan for the 1997 ozone NAAQS.
- On February 16, 2018, the D.C. Circuit Court issued a decision in [South Coast Air Quality Management District v. EPA](#) (*South Coast II*) that, among other things, granted the petition on this point. 882 F.3d 1138. The Court held that “orphan maintenance areas” are required to submit second maintenance plans under Clean Air Act (CAA) section 175A(b). These areas, therefore, must submit a second maintenance SIP revision to ensure maintenance through the full 20-year period following the effective date of redesignation. (Note that depending on when an area received its redesignation, the area may only need to submit a second maintenance plan that covers the remainder of the second 10-year maintenance period.) The Court’s decision also addressed the EPA’s longstanding interpretation that, once a NAAQS was revoked, the EPA does not have authority to issue new designations or redesignations for that standard. The Court vacated the “redesignation substitute,” one of the Agency’s procedural mechanisms for removing antibacksliding requirements for the revoked 1997 NAAQS. In so doing, the *South Coast II* court decision held that the EPA could only lift those antibacksliding requirements with a full statutory redesignation under CAA

¹ 80 Federal Register (FR) 12264 (March 6, 2015).

section 107(d)(3)(E), suggesting that the Agency's prior interpretation of its lack of authority to redesignate areas under a revoked NAAQS was incorrect. Therefore, under the Court's decision, areas that were designated nonattainment for the 1997 ozone NAAQS at the time of revocation may request full redesignation under CAA section 107(d)(3) in order to remove antibacksliding requirements for the revoked 1997 standard, such as nonattainment new source review (NNSR).

- The EPA also notes that this resource document does not cover requirements for other CAA programs that apply in nonattainment and maintenance areas following the *South Coast II* decision. For example, guidance implementing transportation conformity requirements following the *South Coast II* decision is being developed by the EPA's Office of Transportation and Air Quality and will be available at: <https://www.epa.gov/state-and-local-transportation/policy-and-technical-guidance-state-and-local-transportation>.
- At the time the 1997 ozone NAAQS were revoked in 2015, 35 areas remained designated as nonattainment for that NAAQS, and 80 former nonattainment areas had been redesignated to attainment and were also initially designated attainment for the newer 2008 ozone NAAQS. (See table 1 for a list of these areas.)

LIMITED MAINTENANCE PLAN

- CAA section 175A(a) requires that areas seeking redesignation to attainment submit "a revision of the applicable state implementation plan to provide for the maintenance of the [NAAQS] for such air pollutant in the area concerned for at least 10 years after the redesignation." Section 175A(b) requires the state to submit a second plan for maintaining the NAAQS for another 10 years (i.e., 20 years after redesignation). In most cases, the EPA guidance instructs states to "provide for the maintenance of the [NAAQS]" using projected emissions inventories or air quality modeling showing continued maintenance until the end of the relevant maintenance period.²
- In three past guidance documents describing "limited maintenance plans," the EPA has interpreted section 175A to indicate that an area can "provide for maintenance of the NAAQS" if it meets certain air quality-related criteria. Specifically, the key criteria outlined in these documents are that the current air quality levels for ambient monitoring sites in the area should be substantially below the level of the standard (e.g., below 85% of the level of the standard), and that air quality levels had not been highly variable during preceding years.
- The three previously-issued limited maintenance plan memoranda are the following:

² See memorandum dated September 4, 1992, from John Calcagni, Director of OAQPS Air Quality Management Division, to the EPA Regional Office Air Division Directors, "Procedures for Processing Requests to Redesignate Areas to Attainment," pages 9-11.

- A. ["Limited Maintenance Plan Option for Nonclassifiable Ozone Nonattainment Areas." November 16, 1994.](#) This document addressed the LMP option available for the 1979 1-hour ozone NAAQS.
 - B. ["Limited Maintenance Plan Option for Nonclassifiable Carbon Monoxide Nonattainment Areas." October 6, 1995.](#) This document addressed the LMP option available for the 1971 carbon monoxide NAAQS.
 - C. ["Limited Maintenance Plan Option for Moderate PM₁₀ Nonattainment Areas." August 9, 2001.](#) This document addressed the LMP option for the 1987 PM₁₀ NAAQS.
- These memoranda cite specific NAAQS, but states have also developed – and the EPA has also approved – LMPs for other specific NAAQS when those NAAQS were under active implementation planning.³ Accordingly, the EPA believes that in appropriate cases states can apply the principles outlined in these existing guidance documents in developing LMPs for certain 1997 ozone NAAQS maintenance areas, and 1997 ozone NAAQS nonattainment areas that are eligible for redesignation to attainment.
 - As compared to developing a regular maintenance plan, development of an approvable LMP generally should be less resource intensive for local, state, and federal air quality and transportation agencies. A LMP submission may primarily rely on air quality data to demonstrate that the area is not expected to experience a future NAAQS violation, and it does not need to include projected future year emissions inventories or air quality modeling to make that demonstration, though including such information could further support the maintenance demonstration.

STATUTORY REQUIREMENTS FOR AREA REDESIGNATIONS AND MAINTENANCE PLANS

- A nonattainment area can be redesignated to attainment only if it satisfies the requirements of CAA section 107(d)(3)(E) of the CAA. The EPA's general guidelines for redesignation requests and maintenance plan SIP revisions are found in the 1992 the EPA guidance "Procedures for Processing Requests to Redesignate Areas to Attainment," Memorandum from John Calcagni, USEPA Office of Air Quality Planning and Standards, Director, Air Quality Management Division, September 4, 1992.
 1. The EPA has determined that the NAAQS for the applicable pollutant has been attained.
 - a. An area that is designated nonattainment for the 1997 ozone NAAQS would be eligible to be redesignated to attainment for that NAAQS if its most recent ozone design value is less than 0.085 parts per million (ppm). Areas with

³ See, e.g., 79 FR 41900 (July 18, 2014). Approval and Promulgation of Air Quality Implementation Plans; New Mexico; Grant County Sulfur Dioxide Limited Maintenance Plan.

design values of 0.085 ppm or greater are not eligible to redesignate to attainment for the 1997 ozone NAAQS.

2. The EPA has fully approved the applicable implementation plan under CAA section 110(k).
 3. The EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
 4. The state has met all applicable requirements for the area under CAA section 110 and the part D nonattainment area requirement (CAA sections 171-193).
 5. The EPA has fully approved a maintenance plan, including a contingency plan, for the area under CAA section 175A.
- A maintenance plan must satisfy the requirements of CAA section 175A, including:
 1. A SIP revision providing for the maintenance of the NAAQS in the area.
 - a. The initial maintenance plan must provide for maintenance of the NAAQS in the area for 10 years after redesignation.
 - b. Eight (8) years after redesignation, the state must submit a second SIP revision for maintaining the NAAQS through the end of the second 10-year period beyond redesignation.
 2. Additional measures as necessary to ensure maintenance of the NAAQS in the area during this period.
 3. A contingency plan assuring that the state will promptly correct any violation of the standard which occurs after the redesignation of the area to attainment.
 4. The contingency plan shall include a requirement that the state will continue to implement all measures with respect to the control of the pollutant for the area that were contained in the SIP prior to the redesignation.
 - Each limited maintenance plan submission will be evaluated by the EPA on a case-by-case basis, taking into consideration the weight of evidence of the information presented in the SIP submission.

SUPPORTING INFORMATION

The information described below may be helpful for a state interested in developing a regular maintenance plan or a limited maintenance plan SIP submission for a 1997 ozone NAAQS nonattainment or maintenance area.

1. AMBIENT AIR QUALITY DATA

The spreadsheet provided on the EPA website includes ozone ambient air quality monitoring data for the 115 areas that were initially designated as nonattainment for the 1997 ozone NAAQS beginning in 2004. The spreadsheet includes the following information for each 1997 ozone NAAQS area:

- Current designation status as of July 2018 (nonattainment or maintenance)
- Current area classification as of July 2018 (e.g., Marginal, Moderate, Serious)
- Three (3) year design values for 15 design value periods, from the 2001-2003 period to the 2015-2017 period.

2. AIR QUALITY MODELING DATA

The spreadsheet provided on the EPA website contains projected 2023 design values (based on projected emissions inventory data and air quality modeling performed by EPA in support of interstate ozone transport actions by the EPA and/or states for the 2008 and/or 2015 ozone NAAQS). Projected air quality values below the level of the standard for the area for one or more years during the maintenance plan period can be useful supporting information in a demonstration to show that the area is expected to continue to attain the standard during the maintenance period.

- More information on the EPA 2023 air quality modeling is available at:

<https://www.epa.gov/airmarkets/october-2017-memo-and-supplemental-information-interstate-transport-sips-2008-ozone-naaqs>

https://www.epa.gov/sites/production/files/2018-06/documents/air_quality_modeling_updated_2023_modeling_o3_dvs.pdf

3. EMISSIONS INVENTORY DATA

Consistent with the EPA guidance, maintenance plans often use a projection of the attainment year emissions inventory to demonstrate that an area will maintain the NAAQS for 10 years. That is, state submissions provide a showing that nonattainment area emissions of nitrogen oxides (NO_x) and volatile organic compounds (VOC) are projected to remain at or below a level that is consistent with demonstrated attainment throughout the maintenance plan period. While past guidance documents have indicated that areas eligible for a limited maintenance plan need not demonstrate maintenance using emission inventory projections, we include this information to the extent it is helpful.

The spreadsheet provided on the the EPA website contains NO_x and VOC emissions data for two years for the 115 areas that were initially designated as nonattainment for the 1997 ozone NAAQS in 2004. The spreadsheet includes the following information for each area:

- Emissions Inventory data for 2014: Summer season NOx and VOC emissions (tons/season). These data are from the the EPA 2014 modeling platform and are based on the most recently available National Emissions Inventory (2014 NEI version 2).
 - The 2014 emissions inventory information is from the the EPA 2014 version 7.0 modeling platform. The inventory documentation for this platform can be found here: <https://www.epa.gov/air-emissions-modeling/2014-version-70-platform>.
- Projected emissions inventory for 2028: Summer season NOx and VOC emissions (tons/season), which may help support a conclusion that emissions will not increase in the future and the improvement in air quality is due to permanent and enforceable reductions in emissions.
- The 2028 emissions inventory is projected from the EPA 2011 version 6.3 modeling platform. The inventory documentation for this platform can be found here: <https://www.epa.gov/air-emissions-modeling/2011-version-63-platform>.

The relevant inventory scenario names are “2014fd” and “2028el.” The 2028 scenario was used to support past air quality modeling to support the regional haze program.

Due to the limited availability of emissions modeling information, the EPA is not able to provide a completely consistent set of emissions estimates for multiple projection years. In general, the emissions of NOx and VOC are going down over time in most areas. But there may be some methodological inconsistencies between the emissions scenarios noted above, which could lead to unexpected projected emissions increases. Therefore, emissions trends should be carefully examined for each area, especially where an emissions increase is projected.

PAST CRITERIA SUPPORTING LIMITED MAINTENANCE PLANS

As noted, the EPA’s prior guidance describes that states may satisfy the section 175A requirement to “provide for maintenance of the NAAQS” with a LMP according to the following criteria:

- Current air quality levels significantly below the level of the standard: As indicated in prior memoranda, the EPA believes that an air quality design value below 85% of the level of the standard (i.e., a design value of 0.071 ppm as compared to a level of 0.084 ppm, which is considered to be in compliance with the 1997 ozone standard to three digits) could be considered significantly below the standard and may be a good indicator that air quality is not likely to deteriorate to a level that would violate the NAAQS over the next 10 year period.
- Stable or improving air quality trend: Several kinds of analyses can be performed to assess whether an area has had relatively stable or consistently improving air quality

levels over the long term such that the probability of the area violating the standard in the future would be considered low. One basic approach would be to take the most recent design value for the area and add the maximum design value increase (over one or more consecutive years) that has been observed in the area over the past several years. A sum that does not exceed the level of the 1997 ozone standard may be a good indicator of expected continued attainment. This type of metric should be considered on a case-by-case basis.

TABLE 1
1997 OZONE NAAQS AREAS WITH MAINTENANCE AND NONATTAINMENT STATUS
AT THE TIME THE NAAQS WERE REVOKED IN 2015
AND THAT WERE ALSO DESIGNATED ATTAINMENT FOR THE 2008 OZONE NAAQS

State	1997 Ozone NAAQS Area Name	1997 Ozone NAAQS Status
AL	Birmingham Area	Maintenance
GA	Atlanta	Maintenance*
GA	Macon Area	Maintenance
GA	Murray County (Chattahoochee Nat Forest) Area	Maintenance
IN	Evansville Area	Maintenance
IN	Fort Wayne Area	Maintenance
IN	Greene County Area (IN)	Maintenance
IN	Indianapolis Area	Maintenance
IN	Jackson County Area	Maintenance
IN	La Porte County Area	Maintenance
IN	Muncie Area	Maintenance
IN	South Bend-Elkhart Area	Maintenance
IN	Terre Haute Area	Maintenance
KY-IN	Louisville Area	Maintenance
MA-NH	Boston-Manchester-Portsmouth (SE) Area	Maintenance
MD	Kent and Queen Anne's Counties Area	Maintenance
ME	Hancock, Knox, Lincoln and Waldo Counties (Central Maine Coast) Area	Maintenance
ME	Portland Area	Maintenance
MI	Allegan County Area	Maintenance
MI	Benton Harbor Area	Maintenance
MI	Benzie County Area	Maintenance
MI	Cass County Area	Maintenance
MI	Detroit-Ann Arbor Area	Maintenance
MI	Flint Area	Maintenance
MI	Grand Rapids Area	Maintenance
MI	Huron County Area	Maintenance
MI	Kalamazoo-Battle Creek Area	Maintenance
MI	Lansing-East Lansing Area	Maintenance
MI	Mason County Area	Maintenance
MI	Muskegon Area	Maintenance
MO-IL	St. Louis Area	Maintenance*
NC-SC	Charlotte-Gastonia-Rock Hill Area	Maintenance*
NC	Haywood and Swain Counties (Great Smoky NP) Area	Maintenance
NC	Raleigh-Durham-Chapel Hill Area	Maintenance
NC	Rocky Mount Area	Maintenance

State	1997 Ozone NAAQS Area Name	1997 Ozone NAAQS Status
NV	Las Vegas	Maintenance
OH	Canton-Massillon Area	Maintenance
OH	Cincinnati-Hamilton Area	Maintenance*
OH	Dayton-Springfield Area	Maintenance
OH	Lima Area	Maintenance
OH	Toledo Area	Maintenance
OH-PA	Youngstown-Warren-Sharon Area	Maintenance
OH-WV	Steubenville-Weirton Area	Maintenance
PA	Altoona Area	Maintenance
PA	Clearfield and Indiana Counties Area	Maintenance
PA	Erie Area	Maintenance
PA	Franklin County Area	Maintenance
PA	Greene County Area (PA)	Maintenance
PA	Harrisburg-Lebanon-Carlisle Area	Maintenance
PA	Johnstown Area	Maintenance
PA	Scranton-Wilkes-Barre Area	Maintenance
PA	State College Area	Maintenance
PA	Tioga County Area	Maintenance
PA	York Area	Maintenance
TN-KY	Clarksville-Hopkinsville Area	Maintenance
TN	Knoxville Area	Maintenance*
TX	Beaumont-Port Arthur Area	Maintenance
VA	Fredericksburg Area	Maintenance
VA	Madison and Page Counties (Shenandoah NP) Area	Maintenance
VA	Norfolk-Virginia Beach-Newport News (Hampton Roads) Area	Maintenance
VA	Richmond-Petersburg Area	Maintenance
WI	Door County Area	Maintenance
WI	Kewaunee County Area	Maintenance
WI	Manitowoc County Area	Maintenance
WI	Milwaukee-Racine Area	Maintenance
WV	Charleston Area	Maintenance
WV-KY- OH	Huntington-Ashland Area	Maintenance
WV-OH	Parkersburg-Marietta Area	Maintenance
WV-OH	Wheeling Area	Maintenance
CA	Sutter County (part) (Sutter Buttes)	Nonattainment
MA	Springfield (W. Mass) Area	Nonattainment
NY	Albany-Schenectady-Troy	Nonattainment
NY	Buffalo-Niagara Falls	Nonattainment
NY	Essex County (Whiteface Mtn.)	Nonattainment

State	1997 Ozone NAAQS Area Name	1997 Ozone NAAQS Status
NY	Jefferson County Area	Nonattainment
NY	Poughkeepsie Area	Nonattainment
NY	Rochester	Nonattainment
RI	Providence (all of RI) Area	Nonattainment

* The 2008 ozone NAAQS nonattainment area did not include all portions of the 1997 ozone NAAQS area. Thus, the remaining portion of the 1997 ozone NAAQS area should be addressed in a second maintenance plan.