

**COMMENTS AND RESPONSES ON
PROPOSED REVISION TO
MISSOURI STATE IMPLEMENTATION PLAN –
SUPPLEMENT/REVISION TO THE
REDESIGNATION DEMONSTRATION AND MAINTENANCE PLAN
FOR THE MISSOURI PORTION OF THE ST. LOUIS NONATTAINMENT AREA FOR
THE 1997 8-HOUR GROUND-LEVEL OZONE
NATIONAL AMBIENT AIR QUALITY STANDARD**

The public comment period for the proposed revision to the Missouri State Implementation Plan (SIP) for the *Supplement/Revision to the Redesignation Demonstration and Maintenance Plan for the Missouri Portion of the St. Louis Nonattainment Area for the 1997 8-Hour Ground Level Ozone National Ambient Air Quality Standard* (NAAQS) opened on February 24, 2014 and closed on April 3, 2014. Revisions to the proposed plan were made as a result of comments.

The following is a summary of comments received and the Missouri Department of Natural Resources' Air Pollution Control Program's (Air Program's) corresponding responses. Any changes to the proposed plan are included in the response to comments.

SUMMARY OF COMMENTS: During the public comment period for the proposed plan, the Air Program received six (6) comments from the Sierra Club and two (2) comments from the U.S. Environmental Protection Agency (EPA).

COMMENT #1: Sierra Club commented on the health effects of high ozone concentrations. They pointed out several facts regarding the amount of asthma cases in the St. Louis area and how these figures compare with the rest of the state and country.

RESPONSE AND EXPLANATION OF CHANGE: The Air Program acknowledges the effects of ozone on certain health and respiratory conditions, and it is the Air Program's mission to protect air quality in the state to ensure the safety of public health. This redesignation demonstration and maintenance plan will add an extra layer of protection for public health in the St. Louis area against elevated ozone concentrations, if it is adopted by the commission. The maintenance plan establishes a contingency plan that commits the state to implement additional control measures designed to address high ozone concentrations and safeguard against potential future elevated ozone concentrations. Additionally, this plan maintains control requirements currently in place in the St. Louis area.

As a result of this comment, additional language has been added to the executive summary and Chapter 1 (Introduction/Purpose) of the plan to more clearly explain the extra layer of environmental and public health protection for the St. Louis area through the potential implementation of contingency measures if triggered in the future.

COMMENT #2: Sierra Club commented that there are five separate criteria that must be met in order for a nonattainment area to be redesignated to attainment. They specified that the

improvement in air quality must be due to permanent and enforceable control measures and not the result of favorable meteorology or economic downturn.

RESPONSE: This plan addresses each of the five criteria including the requirement that the improvement in air quality results from permanent and enforceable emission reductions. The redesignation demonstration portion of the plan compares the level of oxides of nitrogen (NO_x) and volatile organic compounds (VOC) emissions from 2002, when the area was in nonattainment, to emissions from the attainment year of 2008. This demonstration shows that total NO_x emissions in the Missouri portion of the St. Louis (MO-St. Louis) nonattainment area from all sources have decreased a substantial 33% between 2002 and 2008. This NO_x emissions reduction occurs despite the fact that both electricity production and vehicle miles travel increased within the MO-St. Louis area during this same timeframe: Power demand from electric generating units (EGUs) in the area increased by approximately 12% while vehicle miles traveled (VMT) increased by approximately 6%. During this period, NO_x emissions from EGUs in the MO-St. Louis nonattainment area reduced by approximately 5,000 tons per ozone season (~33 tons/day), and NO_x emissions from on-road mobile sources decreased by over 62 tons/day. Since electricity production and VMT grew between these two years, the emission reductions cannot be attributed to economic factors such as a downturn, but rather are the result of the implementation of enforceable emission control measures that have substantially reduced the rate at which NO_x emissions are emitted from both the stationary and mobile source categories.

The 33% reduction in total NO_x emissions in the MO-St. Louis nonattainment area also supports the conclusion that improvement in air quality was not based on favorable meteorology, but rather emission reductions. Figure 1 below displays the maximum 3-year design values for 8-hour ozone concentrations from 2000–2013 for all of the MO-St. Louis nonattainment area ozone monitors (dashed line). Based on EPA's Guideline on Air Quality Models found in 40 CFR 51 Appendix W, a stable distribution of meteorological conditions occurs over a period in excess of 10 years. With data spanning more than 10 years, the figure does not skew the results towards favorable or unfavorable meteorological conditions. The horizontal line indicates the level of violation of the 1997 8-hour ozone standard. The bold represents the best-fit trend-line for the maximum design value concentrations of all operating monitors each year. The chart shows spikes and valleys for each ozone monitor, which is most likely the result of varying (favorable and unfavorable) meteorology during these years, but the trend-line shows that maximum recorded ozone concentrations in the MO-St. Louis area have been declining over the past 13 years despite the fluctuations in yearly meteorology. This demonstrates that favorable meteorology is not responsible for the declining trend in ozone concentrations experienced in the St. Louis area over the last 13 years. The plan asserts that the decrease in ozone concentrations is in fact due to permanent and enforceable emission reductions, both regional and local. No changes to the plan were made as a result of this comment.

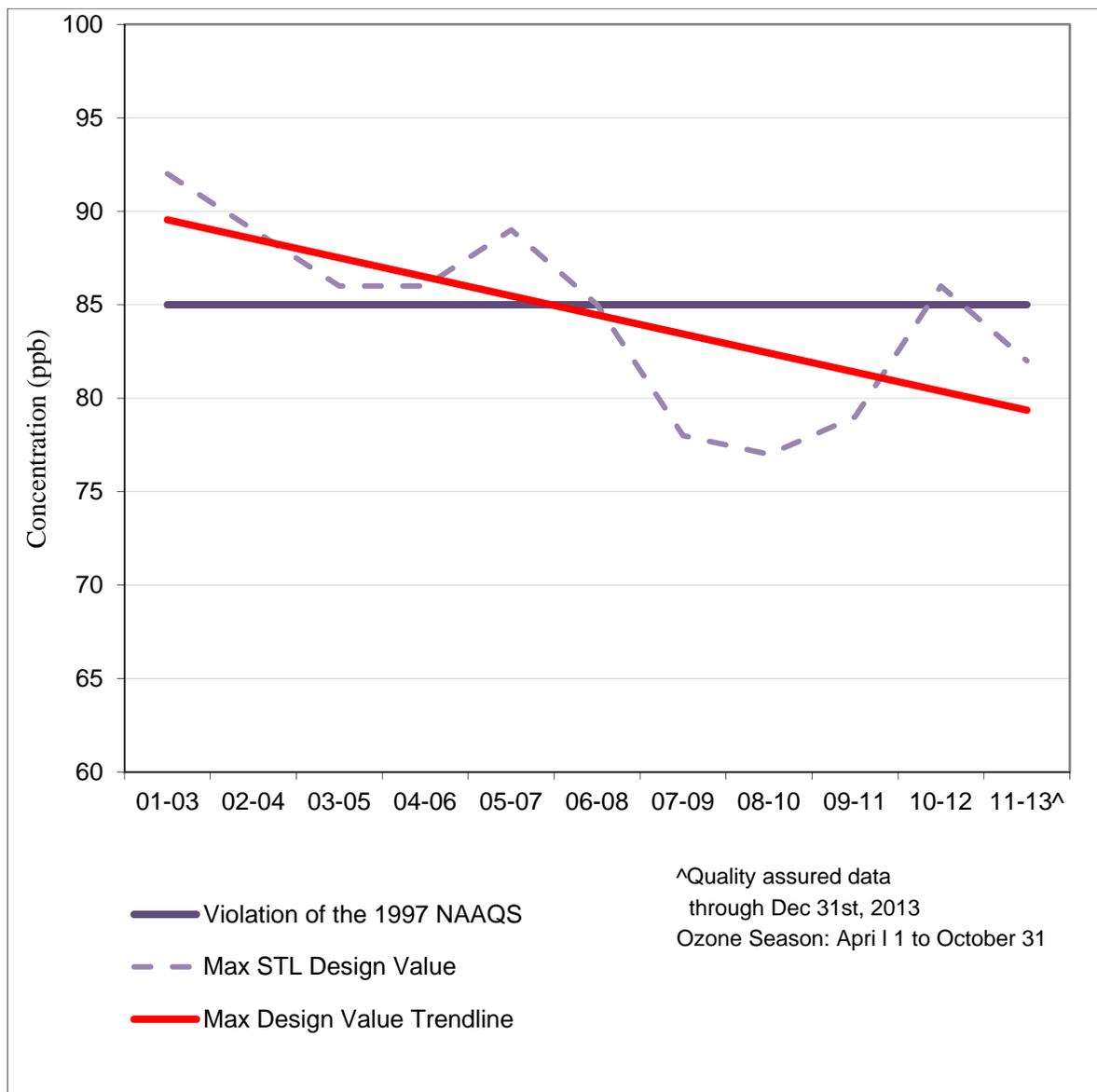


Figure 1: Evaluation of Maximum Ozone Design Values from 2001-2013

COMMENT #3: Sierra Club commented that emission reductions resulting from the NO_x Budget Program and the Clean Air Interstate Rule (CAIR) cannot be relied upon as permanent and enforceable because they allow for the trading/purchasing of emission credits across the entire eastern third of the country, and it is possible that the trading program could cease in the future.

RESPONSE: The Air Program considered the effects of federal trading programs on EGU emissions inside the nonattainment area. The EGU emissions in the MO-St. Louis nonattainment area that are subject to CAIR were evaluated from 2009–2013. Since the CAIR NO_x Ozone Season trading program began in 2009, the EGUs subject to CAIR inside the MO-St. Louis nonattainment area have not once exceeded their ozone season NO_x CAIR allotments in aggregate during any control period from 2009–2013. All of the EGUs subject to CAIR in the MO-St. Louis

nonattainment area are owned by Ameren. Ameren has participated in emission credits trading in the past, as is allowed under CAIR. The unit level CAIR allotments are occasionally exceeded from year to year. However, since CAIR began, any MO-St. Louis area EGU units that have exceeded their CAIR allotments have been offset by other units within the nonattainment area that held emissions below their CAIR allotments. Therefore, since 2009, total ozone season NO_x emissions from EGUs in the MO-St. Louis nonattainment area have been below the level of their total CAIR allotments each year. Ameren has complied with the NO_x Ozone Season CAIR Program without purchasing or trading allowances from outside the nonattainment area. Instead, Ameren has relied on integral low NO_x burners and over-fire air to control NO_x emissions from these EGUs. Because these devices are built-in or inherent to the combustion process and work by increasing combustion efficiency, Ameren is not expected to uninstall this inherent control technology to purchase allowances. Additionally, if Ameren did elect to uninstall the current control technology on any of these units, and the change triggered a major modification, then Ameren would be subject to New Source Review (NSR) permitting requirements. In a nonattainment area (based on a new standard) these provisions would require NAAQS impact modeling and implementation of control devices at the lowest achievable emission rates (LAER).

The maintenance demonstration included with this proposed SIP revision projects future EGU emissions in the MO-St. Louis nonattainment area. As mentioned in Chapter 5 of the plan, although NO_x Ozone Season CAIR allotments decrease 17% by 2015 when compared to allotments granted in 2009–2014, the Air Program did not project future year EGU emissions based on the 2015 allotments. Instead, the plan projects EGU emissions in the area to remain constant from the average levels from 2008–2011. This a very conservative estimate, especially considering the fact that NO_x ozone season emissions from EGUs in the MO-St. Louis nonattainment area have continued to decrease in the last two years and have actually been below the 2015 allotments in aggregate for the last two years.

In addition, EPA has maintained that emission reductions from trading programs are permanent and enforceable. EPA has noted this during several recent SIP approvals, including the Cincinnati-Hamilton Fine Particulate Matter (PM_{2.5}) area redesignation:

Further, EPA disagrees with the Commenter's conclusion that emission reductions associated with trading programs such as the NO_x SIP Call, CAIR, and CSAPR are not permanent and enforceable simply because the underlying program is an emissions trading program... EPA disagrees with the Commenter's conclusion that reductions from trading programs can't be considered permanent and enforceable because these programs allow individual sources to choose between purchasing emission credits and reducing emissions. [76 FR 80255]

The Air Program has addressed the commenter's concern, about the possibility that the CAIR program will end, in Chapter 4 of the proposed plan. To summarize, CAIR has been remanded to EPA by the courts, and in 2011, EPA promulgated a replacement rule known as the cross-state air pollution rule (CSAPR). However, the D. C. Circuit court vacated the CSAPR in December 2011 and explicitly directed EPA to continue implementing CAIR until an acceptable rule that addresses the court's concerns is promulgated. Based on anti-backsliding provisions contained in the Clean Air Act, any replacement rule for CAIR must be equivalent or better. Because of this, CAIR is

considered a permanent and enforceable federal control program that meets the requirements of CAA Section 107(d)(3)(E)(iii) for redesignation purposes. EPA has weighed in similarly. During the redesignation of the Indianapolis PM_{2.5} area, EPA states that CAIR reductions are permanent and enforceable even if the rule is due to be replaced:

However, EPA disagrees that the Court's instruction in those two cases forecloses the Agency and states from relying on CAIR for purposes such as redesignating an area from nonattainment to attainment. Subsection (iii) of section 107(d)(3)(E) is a backwards looking requirement; it requires that the attainment air quality in the area is "due to" permanent and enforceable emissions reductions. The purpose of this requirement is to ensure that in redesignating areas from nonattainment to attainment, EPA does not rely on ephemeral, temporarily improved air quality that results from circumstances such as temporary shutdowns of plants or reduced emission rates because of slowed production... The anticipation that CAIR may be replaced during the maintenance period by another rule requiring upwind sources to reduce emissions does not require EPA to disapprove the redesignation request for Indianapolis currently before it. EPA's longstanding interpretation of section 107(d)(3)(E) in the Calcagni Memorandum contemplates that some reductions required by existing control measures may be replaced in the future by other measures... Therefore, the commenter's concern that a future replacement rule might not require the same reductions as CAIR is not a bar to approving Indiana's redesignation request today. [78 FR 41700-41701]

Lastly, states must be able to assume that regulations at the federal level are useable for credit in the SIP. EPA reiterates this in the Indianapolis area redesignation:

The structure of section 107(d)(3)(E)(iii) indicates that the CAA generally considers reductions resulting from SIPs and Federal regulations as permanent and enforceable. It references "other" reductions that are comparable to measures adopted into SIPs or Federally adopted regulations and can therefore also qualify as permanent and enforceable reductions, indicating that, in general, SIP reductions and reductions from Federal regulations are the types of reductions that the CAA views in the first instance as having the requisite permanence and enforceability for purposes of redesignation. [78 FR 41701]

No changes were made to the plan as a result of this comment.

COMMENT #4: Sierra Club commented that NAAQS are not an air quality target to be hit one time. The Sierra Club points out that the area violated the standard based on 2010–2012 air quality data, and asked what is to prevent the area from violating the NAAQS in the future. Sierra Club cites that the Illinois portion of the nonattainment area has already been redesignated to attainment and is also a party to the 2010-2012 ozone air quality violation.

RESPONSE AND EXPLANATION OF CHANGE: The SIP must provide for attainment and maintenance of the NAAQS at all times. However, SIPs cannot foresee every possible situation and provide a guarantee that air quality will never exceed or violate a specific standard, especially for a pollutant such as ozone, where meteorology plays such a significant role in its photochemical

formation. For this reason, the Air Program emphasizes the importance of establishing the contingency measures contained in this maintenance plan, which would be implemented if future violations of the 1997 ozone NAAQS occur due to these unforeseen occurrences.

The summer of 2012 was among the hottest summers on record for the Midwest United States, and devastating droughts limited precipitation across the region to well-below-average levels. Despite this record-setting summer, only one monitor out of twelve operational monitors in the St. Louis area recorded a violation of the 1997 ozone NAAQS with a design value of 86 ppb from 2010–2012 (due to regulatory rounding conventions 85 ppb is considered a violation of the 1997 ozone NAAQS). In other words, violations of the 1997 ozone NAAQS concentrations across the entire St. Louis area as a region are not occurring and have not occurred since the area originally attained back in 2009.

As the country recovers from the recession and VMT, population, and electricity demand grow, emissions levels from the largest source categories continue to decline, and ozone concentrations are trending downwards. All monitors in the 1997 St. Louis ozone nonattainment area are in compliance with the 1997 ozone NAAQS based on 2011 – 2013 air quality data. It is important to note, that the area is attaining even though the unusually high 2012 ozone season is still included in the 2011-2013 design value for the area.

Furthermore, ozone precursor emissions decreased from 2012 to 2013. Regulatory ozone season NO_x emissions from EGUs within the MO-St. Louis nonattainment area declined by 248 tons from 2012 to 2013. In addition, ozone season NO_x and VOC emissions from on-road sources in the MO-St. Louis nonattainment area declined by approximately 265 tons and 407 tons, respectively, as a result of federal motor vehicle emission standards and fleet turnover. Moreover, motor vehicle emission standards are expected to continue to drop as a result of the recently promulgated federal Tier 3 standards to be implemented starting in the 2017 model year.

Since the summer of 2012, the Air program has implemented grant projects through the Diesel Emissions Reduction Act for engine repowers on three (3) tugboats operating exclusively inside the nonattainment area, an engine repower for one (1) switch locomotive operating in the nonattainment area, an early replacement for a long-haul tractor trailer operating inside the nonattainment area, and tailpipe/idle reduction retrofits for 23 school buses operating in Jefferson County. These projects have further reduced NO_x and VOC emissions in the nonattainment area since 2012 and are contributing to the continued declining trend in ozone concentrations.

In regard to the Illinois portion of the nonattainment area, the plan mentions that the four Illinois counties on the Metro-east side of the area have been redesignated to attainment. For the violation of the 1997 ozone NAAQS based on 2010–2012 air quality data, only one out of twelve air quality monitors in the area was out of compliance, and the location of that monitor was on the Missouri side of the nonattainment area. In response, Illinois implemented a contingency measure pursuant to their approved maintenance plan. The Air Program again notes the importance of the contingency plan associated with Missouri's redesignation request and maintenance plan for the area. If another triggering event and/or violation of the NAAQS occurs in the region, the Illinois EPA and the Air Program would work together to determine the cause and implement contingency measures to further limit and reduce emissions in the area.

As a result of this comment, additional language has been added to the plan to provide a discussion of the emissions reductions achieved in the MO-St. Louis area since the summer of 2012 in an effort to demonstrate that emissions of ozone precursors within the nonattainment area continue to decline as a result of both permanent voluntary projects and permanent and enforceable control measures.

COMMENT #5: Sierra Club commented that a newer, more protective 2008 ozone NAAQS has been promulgated and that an even more stringent ozone standard is expected to be proposed by EPA in the near future. They noted that the St. Louis area is currently designated as a marginal nonattainment area for the 2008 ozone NAAQS, and that the area will be reclassified from marginal to moderate classification under the 2008 ozone NAAQS if the area fails to attain by the attainment deadline for marginal areas. The Sierra Club suggests a more proactive approach, stating that the Air Program should use its minimal resources to address these newer, more protective NAAQS, as opposed to addressing the older 1997 ozone standard.

RESPONSE AND EXPLANATION OF CHANGE: The Air Program is currently developing a marginal area SIP submission to address the area's marginal nonattainment designation under the 2008 ozone NAAQS. If the downward trend of ozone precursor emissions described in the plan, and elsewhere here, is not enough to comply with the 2008 ozone NAAQS by the attainment date of December 31, 2015 and the area is reclassified to moderate, the State's obligations become more stringent and the Air Program will be required to address them at that time. This redesignation of the MO-St. Louis area to attainment for the 1997 ozone standard has no effect on the attainment or implementation of the 2008 NAAQS. By redesignating the MO-St. Louis area to attainment under the 1997 standard, the Air Program is putting contingency measures in place and concluding our planning obligations under the 1997 NAAQS.

The Air Program is taking a proactive approach through this redesignation request by reducing uncertainty regarding the State's planning obligations for the old standard. This allows the Air Program to focus its limited resources on the current, more protective 2008 ozone standard, as well as a more stringent ozone standard anticipated in late 2015. The Air Program has already developed an Early Progress Plan for the St. Louis marginal ozone nonattainment area in order to establish motor vehicle emission budgets for the area under the 2008 NAAQS. The Air Program is also nearing completion of a SIP revision under Section 182(a) of the Clean Air Act in order to address the state's planning obligations for the marginal ozone nonattainment area. Furthermore, because of the possibility that St. Louis could be reclassified from marginal to moderate under the 2008 standard and classified moderate or higher under the revised ozone NAAQS expected in late 2015, the Air Program is currently reviewing 2018 emissions inventory projections and modeling input files in an early effort to develop a modeling construct to support any additional planning requirements in the event these scenarios occur. Both of these situations would require the Air Program to develop an attainment demonstration and a reasonable further progress plan under Section 182(b) of the Clean Air Act.

As a result of this comment, additional language has been added to the Executive Summary and Chapter 1 (Introduction/Purpose) of the plan to explain that a newer, more protective ozone NAAQS is in place and that an even more stringent ozone NAAQS is expected to be established in

the near future. The approval of this plan will conclude any obligations under the 1997 standard prior to its revocation, allowing the Air Program to focus its resources on addressing these newer, more protective ozone NAAQS.

COMMENT #6: Sierra Club commented that the Air Program should get out ahead of the issue and require controls on large stationary sources. They state that controlling stationary sources provides a much higher level of emission reduction certainty than relying on motor vehicle fleet turnover.

RESPONSE: Based on the Air Program's 2008 comprehensive baseline emissions inventory for the MO-St. Louis nonattainment area included with this plan, on-road motor vehicle emissions comprise over 50% and 25% of total NO_x and VOC emissions, respectively. Whereas, point sources (i.e., large stationary sources) only comprise 28% and 8% of total NO_x and VOC emissions, respectively. Since on-road motor vehicles contribute such a large percentage to the overall emissions inventory these emissions should be addressed in order to reduce ozone concentrations effectively. Federal motor vehicle engine standards are permanent and enforced by requiring emission reductions at the engine/vehicle manufacturer level. Because of the continued tightening of federal motor vehicle emission standards, each time an older car is retired and replaced by a newer car (referred to as 'fleet turnover'), permanent emission reductions are achieved.

The Air Program develops comprehensive emissions inventories every three years as required by EPA's Air Emissions Reporting Rule. In order to develop on-road motor vehicle emissions, the Air Program queries Missouri Department of Revenue data for every registered vehicle in the state to determine the age distribution of the vehicle fleet in Missouri. Each year this query is performed, there is always a substantial number of the later model year vehicles, meaning that the latest model year cars continue to be purchased both in St. Louis and throughout the state on a regular basis. As demonstrated in the response to comment #2, emission reductions have outpaced VMT growth which can be attributed to regular motor vehicle fleet turnover.

Moreover, these motor vehicle emission reductions are based on conservative assumptions. The maintenance demonstration within this plan employs a 1.5% annual VMT and vehicle source population growth rate for motor vehicles in the MO-St. Louis nonattainment area, even though the East-West Gateway Council of Governments, the region's transportation planning agency, currently estimates that the MO-St. Louis area VMT is only expected to grow at an annual rate of approximately 1%. Additionally, it is noted that the Air Program took no credit in the plan for the Federal Tier III motor vehicle engine standards that EPA recently promulgated. These standards are expected to significantly reduce NO_x and VOC emissions from the mobile source sector and provide additional assurance that ozone precursor emissions will continue to decline in the MO-St. Louis nonattainment area through permanent and enforceable control measures. Even with the conservative assumptions used in the plan, the state still demonstrates that the area will maintain the 1997 ozone NAAQS. No changes to the proposed plan were made as a result of this comment.

COMMENT #7: EPA commented that Missouri should provide additional information to more accurately reflect that recent improvements to air quality are due to permanent and enforceable emission reductions.

RESPONSE AND EXPLANATION OF CHANGE: As this comment reflects some of the same issues addressed by the Sierra Club in their comments, we defer to the responses to those comments in addressing this one as well. Please see the responses to comment #2 and comment #4 above in regard to recent permanent and enforceable emissions reductions. As a result of this comment, additional language has been added to the plan to describe the recent emissions reductions since the summer of 2012 that have been achieved in the St. Louis area as a result of permanent and enforceable controls.

COMMENT #8: EPA commented that the Air Program should remove language in Chapter 7 of the plan in relation to submitting a second 10-year maintenance plan for the 1997 ozone NAAQS. The commitment to submit a second 10-year plan is not necessary for approving this current maintenance plan. In the event that a second 10-year maintenance plan is required, EPA's future rulemakings will specifically clarify those requirements.

RESPONSE AND EXPLANATION OF CHANGE: As a result of this comment, the Air Program removed the commitment to develop the second 10-year maintenance plan for the 1997 ozone NAAQS from Chapter 7 of the plan. If EPA promulgates a future rule requiring the St. Louis area to develop a second 10-year maintenance plan for the 1997 ozone NAAQS, the Air Program would address the obligation at that time.