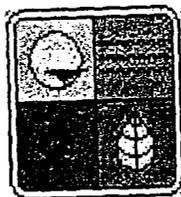


2002 Kansas City Maintenance Plan for Control of Ozone

**Missouri Air Conservation Commission
Adopted July 25, 2002**

Revised December 5, 2002



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2002 Kansas City Ozone Maintenance Plan

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Submitted to the U.S. Environmental Protection Agency
By the Missouri Department of Natural Resources'
Air Pollution Control Program**

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**Kansas Department of Health and Environment
The United States Environmental Protection Agency (Region VII)
Mid-America Regional Council**

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1.0 EXECUTIVE SUMMARY

1.1 TIME LINE HISTORY OF MAINTENANCE PLAN

1.1.1 MAINTENANCE PLAN ISSUES AND ACTIONS FROM 1970 THROUGH 1994

The Clean Air Act (CAA) established National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants. The CAA requires any area that fails to attain the standard for any criteria pollutant to develop and implement a plan. In the 1970s, the Kansas City Metropolitan Area (KCMA) was determined to be in violation of the ozone NAAQS. The state of Missouri developed and implemented the first Kansas City Ozone Implementation Plan in 1979.

The U.S. Environmental Protection Agency (EPA) fully approved the 1979 Kansas City Ozone Implementation Plan and the KCMA was projected to meet the ozone NAAQS by December 31, 1982. The area appeared to meet the standard at that time. However, violations in 1983 and 1984 required the state to revise the 1979 ozone implementation plan.

These required revisions to the 1979 Plan were included in the 1987 ozone implementation plan. The 1987 ozone implementation plan projected attainment of the ozone NAAQS by December 31, 1987. The EPA fully approved the 1987 ozone implementation plan on November 2, 1989. However, three violations in the monitoring period from 1986 through 1988 halted the re-designation effort.

Ozone monitoring data from 1987 through 1991 demonstrated that the area had attained the standard. In accordance with the Clean Air Act Amendments of 1990 (CAAA), the Missouri Department of Natural Resources' Air Pollution Control Program revised the Missouri Ozone Plan for the KCMA to recognize that the area had achieved the ozone NAAQS. The EPA published final approval of the maintenance plan on June 23, 1992. The maintenance plan became effective on July 23, 1992. This action officially re-designated the KCMA to attainment.

1.1.2 MAINTENANCE PLAN ISSUES AND ACTIONS FROM 1995 THROUGH 1997

The KCMA experienced a violation of the ozone standard in the summer of 1995. This violation mandated the implementation of the contingency control measures listed in the maintenance plan adopted in 1992. These control measures included:

- 1) Emissions offsets of 1:1 for all major sources;
- 2) Stage II Vapor Recovery or Enhanced Inspection and Maintenance (I/M);
- 3) Transportation Control Measures (TCM) achieving a 0.5% reduction in area Volatile Organic Compounds (VOC) emissions; and
- 4) A comprehensive emission inventory.

The states of Missouri and Kansas, along with the Mid-America Regional Council (MARC), expressed to the EPA that they wished to amend the control measures listed in the

contingency section of the 1992 implementation plan. The EPA agreed that the measures could be changed as long as the revised plan achieved the same level of control.

The states asked the MARC Air Quality Forum to aid in the review of the control measures available to the KCMA. The Air Quality Forum convened the Ozone Subcommittee to conduct a technical analysis of the control measures. The Ozone Subcommittee evaluated the following major control measures: federal reformulated gasoline (RFG), low Reid Vapor Pressure (RVP) gasoline, Stage II Vapor Recovery, and I/M (14 different programs). The Ozone Subcommittee also evaluated transportation control measures including:

- 1) Free transit for high ozone season;
- 2) Free transit on red skycast days;
- 3) Commuter rail in Interstate 35 corridor;
- 4) Increased bus service for high ozone season;
- 5) Light rail transit, clean fuel fleets;
- 6) Lanes for high occupancy vehicles;
- 7) Enhanced traffic signalization on arterial routes;
- 8) Nontraditional work scheduling and commuting;
- 9) Telecommuting;
- 10) Parking surcharges; and
- 11) Taxes on vehicles miles traveled and gasoline.

The Air Quality Forum reviewed the Ozone Subcommittee report and recommended the following control measures:

- 1) Expanded public education;
- 2) Low RVP gasoline;
- 3) Motor vehicle I/M;
- 4) Seasonal no-fare transit; and
- 5) Clean fuel fleets.

The Air Quality Forum also recommended enhanced traffic signalization, expanded transit, expanded Heartland Sky program, land use planning, air quality data collection, expanded public education, and a stationary source study as supplementary measures.

The department's Air Pollution Control Program prepared a revised maintenance plan, which was presented at public hearing on April 24, 1997. The plan was then presented to the Missouri Air Conservation Commission (MACC) for adoption at the June 28, 1997, meeting. The commission recommended that the department's Air Pollution Control Program revise the plan to include Stage II Vapor Recovery in the place of an I/M Program. The decision to relinquish the I/M Program was made partially due to the difficulty in implementing such a program considering the extended length of time necessary to develop it and put it into action. At the July 24, 1997, MACC meeting, the commission members agreed to allow the department's Air Pollution Control Program some time to reconsider the control strategies for the Kansas City area with the MARC Air Quality Forum and the local agencies. The commission directed the department's Air Pollution Control Program to bring the plan back for public hearing no later than December of 1997.

The Air Quality Forum held a meeting on September 3, 1997, to discuss the control options. The discussions at this meeting also addressed a second violation of the ozone standard, which occurred on August 28, 1997. The Air Quality Forum convened again on

October 7, 1997, to recommend the control strategies for the KCMA. The forum recommended the implementation of expanded public education and Heartland Sky programs, RFG, stationary source reductions, air quality data collection, and supplementary control measures including:

- 1) Seasonal reduced-fare and transit;
- 2) Clean cities programs;
- 3) Enhanced traffic signalization;
- 4) Expanded transit program; and
- 5) Land use planning.

The Air Quality Forum recommended the inclusion of Stage II Vapor Recovery as a contingency in the event the implementation of the RFG program was unsuccessful.

The department's Air Pollution Control Program amended the revised maintenance plan to reflect the latest MARC recommendations. One important element of the maintenance plan was left to the MACC to determine. This element was the implementation year for RFG. The department's Air Pollution Control Program drafted the plan with language requesting comments on an implementation date. As recommended, the department's Air Pollution Control Program also included a Stage II Vapor Recovery regulation to be promulgated if the RFG program could not be implemented.

1.1.3 MAINTENANCE PLAN ISSUES AND ACTIONS IN 1998

On February 3, 1998, the MACC adopted the revised Kansas City Ozone Maintenance Plan. The commission also set the recommended implementation date for the RFG program as April 15, 2000. The department's Air Pollution Control Program committed to request the Governor of Missouri to opt the Missouri counties of the KCMA into the federal RFG program.

The department's Air Pollution Control Program sent the revised maintenance plan to the EPA, Region VII on March 25, 1998. The EPA found the revised maintenance plan complete on May 26, 1998.

As was required in the maintenance plan, the department's Air Pollution Control Program updated the MACC on the status of the Federal RFG amendment at the August 1998 meeting. The department's Air Pollution Control Program recommended that the commission delay any action until the September 24, 1998, MACC meeting. The EPA finalized the Federal opt-in rule amendment to allow Kansas City as a former non-attainment area to opt-in the Federal RFG program on September 29, 1998.

At the September 24, 1998, MACC meeting, the Department's Air pollution Control Program requested direction from the commission on moving forward with the maintenance plan as adopted. The department's Air Pollution Control Program informed the commission that the EPA had passed the needed regulation allowing Missouri and Kansas to request RFG for Kansas City. The commission agreed that the department's Air Pollution Control Program should move forward with the maintenance plan as adopted.

1.1.4 MAINTENANCE PLAN ISSUES AND ACTIONS IN 1999

On May 27, 1999, the EPA published a conditional approval of the maintenance plan. The conditions of this approval were that the governor of Missouri opt-in to the federal RFG program and the state implement a regulation for a state fuel, or implement Stage II Vapor Recovery by April 15, 2000.

On April 6, 1999, the EPA disapproved the Long Range Transportation Plan (LRTP) for the KCMA. The Federal Highway Administration stopped approving new roadway projects on May 7, 1999. July 28, 1999 was set as the date that highway funding would begin to be withheld.

On June 2 and 3, 1999, the Kansas Department of Health and Environment (KDHE), in conjunction with the department's Air Pollution Control Program, held a Kansas City Fuels Summit to discuss the implementation of the ozone maintenance plan options. While the fuels summit did not clearly result in the recommendation of the federal RFG program, the summit did illustrate the difficulties of not pursuing federal RFG.

On July 27 and 28, 1999, Governor Graves of Kansas and Missouri Governor Carnahan respectively, signed letters (See Appendix E) requesting that the KCMA be included in the federal RFG program. Submitting the opt-in letters to the EPA brought the LRTP into conformity, thereby making the plan approvable and allowing federal highway funding distribution again.

However, on November 9, 1999, the United States Court of Appeals for the District of Columbia Circuit issued an order to stay the effectiveness of the EPA amendments to 40 CFR part 80 Subpart 70(k). This stay prevented former nonattainment areas to opt-in to the federal RFG program.

1.1.5 MAINTENANCE PLAN ISSUES AND ACTIONS IN 2000

On January 4, 2000, the same court revoked the EPA's rulemaking. The action of the court eliminated the availability of RFG for the KCMA at this time. The department's Air Pollution Control Program met with petroleum interests serving KCMA on March 3, March 20, and April 11 to discuss the availability of an RFG-like fuel for KCMA. The petroleum industry committed to providing a 7.0 RVP gasoline in the KCMA. This gasoline alone would not meet the emission reduction needed for the maintenance plan. The states would have to make up the difference in emission reductions through stationary source controls.

The EPA sent Governor Carnahan a letter dated April 11, 2000, which started a 90-day clock. Within this 90 days, the state was required to develop and submit a revised control strategy for the KCMA to replace the RFG strategy that was no longer a viable option.

On June 13, 2000, the Air Quality Forum voted to reaffirm their recommendation that Stage II Vapor Recovery be implemented if a state RFG-like fuel was not available to the KCMA. On June 29, 2000, the MARC Board of Directors also voted to reaffirm their commitment to implement Stage II Vapor Recovery if a state RFG-like fuel is not available for the KCMA.

The state of Kansas sent a letter (see Appendix E) to the EPA committing to a 7.0 RVP gasoline and a cold solvent cleaning rule on July 7, 2000.

In addition, the state of Missouri sent a letter (see Appendix E), on August 22, 2000, committing to implement a 7.0 RVP regulation and a cold solvent cleaning regulation. In addition, department's Air Pollution Control Program committed to amend the Stage I Vapor Recovery Program in KCMA to include enhanced reporting and record keeping, increased inspection frequency, and installation of pressure vacuum relief valves. In addition, the department's Air Pollution Control Program proposed rule 10 CSR 10-2.205 Control of Emissions from Aerospace Manufacturing and Rework Facilities. This rule was identified in the Kansas City Ozone Maintenance Plan adopted in 1992 as a possible stationary source control, which the department's Air Pollution Control Program committed to pursue. This rule was presented at a public hearing on October 26, 2000. The rule was adopted by the MACC on December 7, 2000, and became effective on March 30, 2001.

The department's Air Pollution Control Program filed a new rule 10 CSR 10-2.215 Control of Emissions from Solvent Cleanup Operations on August 30, 2000. This rulemaking was identified in the Kansas City Ozone Maintenance Plan adopted in 1992 as a possible stationary source control, which the department's Air Pollution Control Program committed to pursue.

The department's Air Pollution Control Program filed an amendment to rule 10 CSR 10-2.330 Control of Gasoline Reid Vapor Pressure on September 26, 2000. This rule was part of the Governor's commitment letter that replaced the RFG commitment in the Kansas City Ozone Maintenance Plan.

The department's Air Pollution Control Program filed an amendment to rule 10 CSR 10-2.260 Control of Petroleum Liquid Storage, Loading, and Transfer on December 1, 2000. This rule was part of the Governor's commitment letter that replaced the RFG commitment in the Kansas City Ozone Maintenance Plan.

1.1.6 MAINTENANCE PLAN ISSUES AND ACTIONS IN 2001

Rule 10 CSR 10-2.215 was adopted by the MACC on February 6, 2001, and became effective on May 30, 2001. The 10 CSR 10-2.330 rule amendment was adopted by the MACC on February 6, 2001, and became effective on May 30, 2001. The 10 CSR 10-2.260 rule amendment was adopted by the MACC on March 29, 2001, and became effective on July 30, 2001.

The department's Air Pollution Control Program filed an amendment to rule 10 CSR 10-2.210 Control of Emissions from Solvent Metal Cleaning on January 29, 2001. This rule was part of the Governor's commitment letter that replaced the RFG commitment in the Kansas City Ozone Maintenance Plan. The amendment requires low vapor solvents to be used for cold cleaning. This rule amendment was adopted by the MACC on May 24, 2001, and became effective on October 30, 2001.

The department's Air Pollution Control Program worked with the State of Kansas and MARC to develop the 1999 emission inventory for Kansas City Maintenance Area. The inventory has been completed.

1.1.7 MAINTENANCE PLAN ISSUES AND ACTIONS IN 2002

In late January 2002, MOBILE 6 was issued by the EPA for use in calculating on-road mobile emissions. The department's Air Pollution Control Program through the interagency consultation group process and with the assistance of MARC elected to use MOBILE6 in calculating on-road mobile emissions and to develop area, point and off-road emissions inventory numbers for 1999.

On June 11, 2002, MARC Board approved the Mobile Budgets. On June 28th the 2002 Maintenance Plan for Control of Ozone with the Mobile Budgets included was submitted to Public Hearing. On July 25, 2002 the 2002 Maintenance Plan for Control of Ozone plan was adopted by the MACC. The department's Air Pollution Control Program notified the MACC that a set of new population and employment forecasts was being received by MARC when available. Upon receipt of the forecast data necessary to calculate the impact of the employment and forecast changes, new mobile budgets may have to be developed. On September 24, 2002 MARC approved new employment and population forecasts. The forecasts impact to the projected area sources and projected mobile budgets was closely examined by interagency consultation group process and with the assistance of MARC. A new area inventory was developed for Kansas and Missouri and a new mobile emission budget was developed. MARC approved the New Mobile Emission Budget on October 29, 2002. The new Mobile Budget was submitted for Public Hearing at the MACC meeting on October 24, 2002. The Mobile Budgets was approved by MACC on December 05, 2002

1.2 KANSAS CITY OZONE MAINTENANCE PLAN COMPONENTS

1.2.1 ADMINISTRATIVE REQUIREMENTS

This section provides the legal authority statement, the public hearing notice along with the certification of public notice, the comments with the responses from Public Notice, and provides for the MACC Adoption Certification.

1.2.2 DEMONSTRATION OF CONTINUED ATTAINMENT

This section of the Kansas City Maintenance Plan for Control of Ozone reveals by comparing updated emission inventory data, the Volatile Organic Compounds (VOC) and Nitrogen Oxides (NOx) emissions from 1999, and projections of the VOC and NOx emissions for the year 2012, that it is reasonable to conclude that the emission levels experienced in 1999 will not be exceeded in 2012. The analysis shows no increase in VOC and NOx emissions through the life of the maintenance plan. In 1991, the EPA approved the Kansas City Maintenance Plan by demonstrating the Ozone action levels in 1989 that attained the NAAQS will remain below the action level through 2002. In a similar manner, the 2002 plan demonstrates the VOC and NOx levels in 1999 when projected to 2012 reveals no increase in VOC and NOx emissions. The 2002 Kansas City Maintenance Plan for Control of Ozone will allow the area to remain in compliance with NAAQS for the next ten years or the life of this plan.

The Plan shows that, without adding any new control measures to the KCMA, ozone precursor emissions will be reduced between 2000 and 2012. These reductions will be realized through a combination of already adopted State and Federal control measures and future federal programs affecting mobile sources, stationary sources, and transportation systems. The KCMA will meet the one-hour ozone standard through 2012 with the control measures listed in the Demonstration of Continued Attainment section.

1.2.3 TRACKING PLAN'S PROGRESS & INVENTORY PROVISION

This section of the Kansas City Maintenance Plan for Control of Ozone is divided into sections that describe the ozone-monitoring network and provides for the required emission inventory update provisions.

The primary tracking plan for the KCMA consists of continuous ozone monitoring. The ongoing regional transportation planning process carried out by the MARC, in coordination with the KDHE, the department's Air Pollution Control Program, and the EPA, will serve as a secondary means of tracking mobile source VOC and NOx precursor ozone emissions into the future. The region's transportation improvement programs are prepared every two years, and must go through a transportation conformity finding. This process will be used to periodically review progress toward meeting the vehicle miles traveled (VMT) and mobile source emissions projections in this maintenance plan.

The locations of the six KCMA monitors are provided and the agency responsible for the individual monitors is disclosed. Table 1 is provided which reveals the number of exceedances during the ozone seasons from 1991 through 2001. Table 2 presents the ozone exceedances by monitor in the KCMA for the years 1982 through 2001. Table 3 is a list of design values for the maintenance area. Design values are used as indicators of air quality. This section discusses the exact ozone monitor value that would be interpreted as an exceedance. In addition, this section discusses the history of missing monitor data, how missing monitor data is handled, and reveals sources of monitor down time. All recent missing monitor data occurrences qualified to be treated as discounted data or not counted as exceedances.

An emission inventory is an itemized list of emission estimates for sources of air pollution in a given area, for a specified time period. The inventory is divided into stationary sources (point, area and biogenic) and mobile sources. The department's Air Pollution Control Program realizes the importance of a quality up-to-date emissions inventory in planning for air quality. Therefore, the department's Air Pollution Control Program commits to updating the emissions inventory to enable tracking of emission levels for the KCMA every three years for the next ten years or the life of this plan. This emissions inventory update will include point, area, mobile and biogenic emission revisions.

1.2.4 EMISSION INVENTORY AND MOBILE VEHICLE BUDGETS

The base year for the new inventory is 1999. No violations of the one-hour ozone standard occurred during the 1998-1999 period. The region was in compliance with the one-hour ozone standard.

The emission inventory update information is broken out into mobile on-road and off-road, area, point, and biogenic sources in Tables 4, 5, and 6. Table 4 is the total for the actual 1999

and projected 2012 emissions for the Missouri counties of the KCMA while Table 5 is the Total of the Kansas Counties of the KCMA. Table 6 is the combined Missouri and Kansas counties. A discussion of the mobile on-road and off-road emission data and the program used to estimate the emission data is provided. MARC, using the EPA MOBILE6 model for on-road modeling and Draft NONROAD model for off-road, developed the data for the on-road and off-road mobile emissions. The draft NONROAD model that was released in June 2001 in support of the 2007 heavy-duty vehicle rule was used to generate 1999 and 2012 emissions estimates for all off-road mobile source categories covered in the non-road model. A discussion of the biogenic data is provided which includes revealing the model used in the data development. This section contains general information about the emission data. The point and area sources calculation and source information is found in this section.

The existing budgets for 2000 and 2010 were calculated in 1995. In that exercise, the 1990 level of emissions was assumed to keep the region in compliance with the one-hour ozone standard and was used as a cap on overall emissions through 2010. The 2010 level of emissions was less than the emissions in 1990, and the difference was quantified as a margin, which allowed for some growth in emissions from all sectors in 2010. Approximately one-third of the margin, which was the percent of overall emissions contributed by vehicles, was specifically allocated to motor vehicles. The motor vehicle emissions budget was the projected on-road mobile emissions in 2010 (assuming transportation investments through 2010) plus the motor vehicle proportion of the margin (allowing for growth in mobile emissions).

A plan revision submitted by the state in 1995 and approved by EPA (61 FR18251 on April 25, 1996) establishes the current motor vehicle emissions budgets used to ensure that transportation plans conform to the ozone maintenance plan, see 40 CFR 52.1321(e). The budgets are shown in the following table:

| Motor Vehicle Emissions Budget (MVEB) for Conformity Purposes | |
|--|-----------------------------------|
| Compounds | 2000 Attainment MVEB for the KCMA |
| Non-methane hydrocarbons | 87,548 kg/summer day (96.3 tpd) |
| NOx | 119,889 kg/summer day (131.9 tpd) |

The mobile source budgets for 2012 are:

VOC: 54.7 tons /ozone season day

NOx: 97.8 tons /ozone season day

This budget is expected to allow the area to maintain the one-hour ozone standard.

1.2.5 CONTINGENCY MEASURES

Section 175A of the CAAA requires all maintenance plans to include such contingency commitments as needed to keep an area from exceeding the standard once attainment has been reached. The department's Air Pollution Control Program is obligated under the CAAA to set forth a plan to be implemented upon a violation of the ozone standard in the KCMA. The CAAA requires a group of specific control measures to be implemented in case of an ozone violation.

Contingency Measure Trigger for 2003 to 2004

Violation occurs anywhere within the maintenance area.

Statewide NOx rule (MO)

Federal Non-road Engine Standards

One or more of the following will be considered for implementation:

- Industrial emission offsets of 1.15 to 1;
- Stationary source controls for NOx and VOC;
- Stage II Vapor Recovery program at gasoline refueling stations;
- Enhanced vehicle emission reduction programs;
- Alternate fuel programs for fleet vehicle operations;
- Vehicle anti-tampering programs;
- Other transportation control measures;
- Vehicle inspection and maintenance program;
- VOC controls on minor sources; and

The department's Air Pollution Control Program will further review and evaluate the current VOC rules to see if they need to be tightened, changed or modified.

Contingency Measure Trigger for 2005-2012

Level I Trigger

The KCMA NOx or VOC emissions inventories for 1999 increase more than 5% above the levels included in the 3-year emissions inventories updates.

The department's Air Pollution Control Program will work cooperatively with KS to evaluate the exceedances, or determine if adverse emissions trends are likely to continue. If so, the states will determine what and where controls may be required, as well as level of emissions reductions needed, to avoid a violation of the NAAQS. The study shall be completed within 9 months. If necessary, control measures shall be adopted within 18 months of determination.

Level II Trigger

A violation of the Ozone NAAQS at any monitoring station in the KCMA.

The department's Air Pollution Control Program will work cooperatively with KS to conduct a thorough analysis to determine appropriate measures to address the cause of the violation. Analysis shall be completed within 6 months. Selected measures shall be adopted within 18 months and implemented as expeditiously as practicable, taking into consideration the ease of implementation and the technical and economic feasibility of selected measures.

Point, Mobile and Area Control Measures

Point Source Measures

NOx SIP Call Phase II (non-utility).

Reinstate requirements for Offsets and/or Lowest Achievable Emission Rate (LAER).

Apply Reasonably Available Control Technology (RACT) measures to smaller existing sources.

Other control measures to be identified.

Mobile Source Measures

Tier 2 Vehicle Standards and Low Sulfur Fuel

Heavy Duty Diesel Standards and Low Sulfur Diesel Fuel

TCM's, including, but not limited to, area-wide rideshare programs, telecommuting, transit improvements, and traffic flow improvements.

Vehicle testing I/M (OBDII)

California Engine Standards

Other measures to be identified

Area Source Measures

California Architectural/Industrial Maintenance (AIM)

California Commercial and Consumer Products

Broader geographic applicability of existing measures

California Off-road Engine Standards

Other measures to be identified

1.2.6 PROVISION FOR OPERATION OF MONITORING NETWORK

This section outlines actions to upgrade the monitoring network. Moving of the Worlds of Fun monitor to Rocky Creek, the new Leavenworth County monitor and the pending construction of Johnson County monitor is mentioned. Reference is made to commitment letters from the department's Air Pollution Control Program to the EPA and acceptances by the EPA of the commitment letter. A commitment to operate the monitoring network for ten years or the life of the plan is found in this section.

1.2.7 CONFORMITY

A general conformity regulation (10 CSR 10-6.300 Conformity of General Federal Actions to State Implementation Plans) became effective on September 30, 1996. This rule implements section 176(c) of the CAA, as amended (42U.S.C. 7401 et seq.) and regulations under 40 CFR part 51 Subpart W. Under those authorities, no department, agency, or instrumentality of the Federal Government shall engage in or approve any activity that does not conform to an applicable implementation plan. This applies to areas in Missouri that are designated as a nonattainment or maintenance area for any criteria pollutant of NAAQS.

A conformity analysis (see List of References # 7) is a demonstration that the regional emissions from proposed transportation projects would not exceed the motor vehicle emissions budgets. If the conformity requirements cannot be met, then only certain types of projects may proceed until the requirements can be met. The conformity analysis clearly indicates that regional motor vehicle emissions of VOC and NO_x remain below the budgeted level in the proposed regional plan while accounting for the network anticipated to be operational as a result of roadway capacity projects listed in the 2002 Transportation

Improvement Plan (TIP). As such, the analysis indicates that the 2002 TIP and the 2020 LRTP are in conformity with the plan.