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California Environmental Protection Agency

AIR RESOURCES BOARD

Staff Report

Analysis of the San Joaquin Valley 2007 PM10 Maintenance Plan

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EXECUTIVE SUMMARY

Proposal

The San Joaquin Valley Unified Air Pollution Control District (District or Valley) is designated as a nonattainment area, with a classification of "serious" for the national ambient air quality standards (NAAQS or standards) for particulate matter of 10 microns in diameter or smaller (PM10). In June 2003, the San Joaquin Valley District adopted the 2003 PM10 Attainment Plan setting the control strategy for attaining the standards by December 31, 2010. As a mid-course review, the District adopted the 2006 PM10 Plan, reaffirming the control strategy in the 2003 PM10 Attainment Plan. Due to the adoption of ARB and District rules in the 2003 PM10 Plan, the Valley's air quality has improved to the point that the District now attains the PM10 standards, ahead of the 2010 attainment deadline.

In October 2006, the U. S. Environmental Protection Agency (U.S. EPA) determined the Valley attained the PM10 standards, based on 2003-2005 ambient monitoring data (71 FR 63642, 2006 clean data finding). In August 2007, U.S. EPA followed with a proposed affirmation of attainment, based on the evaluation of 2006 monitoring data (72 FR 49046). These U.S. EPA actions, however, do not constitute redesignation of the Valley to attainment, since further Clean Air Act (CAA or Act) requirements need to be met. The District prepared the 2007 PM10 Maintenance Plan to address these requirements and request official redesignation to attainment.

On September 20, 2007, the District adopted the 2007 Maintenance Plan. The plan officially requests the Valley be redesignated to attainment for the PM10 NAAQS and charts the course to maintain attainment for these standards. The staff of the Air Resources Board (ARB or Board) has reviewed the 2007 PM10 Maintenance Plan and is recommending that the Board approve the plan and submit it to U.S. EPA as a revision to the State Implementation Plan (SIP).

Plan Addresses Act Requirements

The 2007 PM10 Maintenance Plan addresses both the 24-hour and the rescinded annual PM10 standards, and includes the following components:

- 2005 attainment inventory consisting of annual and winter emission estimates for directly emitted PM10 and nitrogen oxides (NOx), the limiting precursor for secondary PM10 in the Valley;
- Demonstration that PM10 attainment concentrations at all monitoring stations in the Valley will be maintained through 2020;
- Commitment to ongoing monitoring network operation for continued verification of attainment; and
- Contingency provisions to address any future violations.

In addition, eight years after the Valley is redesignated as attainment, the District is required to submit a revised PM10 Maintenance Plan, providing for continued attainment for an additional ten years.

Adopted Rules Provide for Continued Attainment

Since the adoption of the Valley's 2003 PM10 Attainment Plan, direct PM10 and NOx emissions that form PM10 have been reduced significantly. The District now attains the PM10 standards ahead of the 2010 attainment deadline. ARB adopted State measures for mobile sources achieve the 10 tpd of NOx and 0.5 tpd of direct PM10 2010 emission reductions commitment in the Valley's 2003 PM10 Attainment Plan. The District has also adopted all of the rules committed to in the 2003 PM10 Attainment Plan and will not remove, replace, or suspend any emission reduction measure commitments in the plan, even after the Valley is redesignated as attainment. Air quality modeling based on these emission reductions demonstrates that the Valley will continue to demonstrate attainment through 2020. In addition, ARB and the district are on track to achieve additional reductions in pollutants that form PM10 from the recently adopted 2007 Ozone Attainment Plan.

The Monitoring Network is Adequate

The District's PM10 monitoring network consists of 15 monitoring sites distributed throughout the San Joaquin Valley. In the approval of the 2003 Amended PM10 Attainment Plan, U.S. EPA found that the Valley's PM10 monitoring network "meets all applicable regulatory requirements and is adequate to support the technical evaluation of the PM10 problem." In the October 2006 determination that the District attains the PM10 national standards, U.S. EPA's concludes that the Valley's PM10 monitoring network provided adequate data to support the attainment finding.

Contingency Process Addresses Any Future Violations

The District's proposes the following mechanism to address any exceedances that might occur after redesignation to attainment:

- Analyze causes of exceedance or sequence of concentrations just below the 24-hour exceedance level.
- If event is not due to a natural or exceptional event, determine if ongoing emission reductions from rules in approved plans will prevent future exceedances.
- If further emission reductions are needed, identify applicable control measures from the District's recently adopted 2007 Ozone Attainment Plan or, if applicable, the 2008 PM2.5 Attainment Plan, currently under development.

Updated Conformity Budgets

The Valley transportation agencies need new PM10 Plan transportation conformity budgets (budgets) based on the updated version of the model used to estimate emissions from motor vehicles (EMFAC2007). Updated budgets for PM10 must be approved by U.S. EPA by January 2008. Delay in approval beyond this date could hinder local transportation projects and restrict federal transportation funding.

During the development of the 2007 PM10 Maintenance Plan, the Valley transportation agencies provided updated transportation activity for use in calculating conformity budgets. This information was not available in time for the District to incorporate it into the adopted plan. ARB staff worked with the transportation agencies and the District to reflect the updated activity data in conformity budgets, and post the budgets for the required 30-day public review. In the Resolution approving the 2007 PM10 Maintenance Plan, the District recognized the need for technical refinements to the conformity budgets after adoption of the 2007 PM10 Maintenance Plan. ARB staff proposes ARB adoption of the updated transportation conformity budgets for the region.

Staff Recommendation

ARB staff concurs with the 2007 PM10 Maintenance Plan and Request for Redesignation and the District's supporting technical analysis. ARB staff recommends that the Board approve the San Joaquin Valley 2007 PM10 Maintenance Plan, including updated transportation conformity budgets, emission inventory, and maintenance demonstration as a revision to the California SIP for submittal to U.S. EPA. In addition, ARB staff recommends that the Board approve the District's redesignation request from nonattainment to attainment for the federal PM10 standard.

I. BACKGROUND

Covering nearly 25,000 square miles, the Valley is one of the dominant features in California's landscape. One of the fastest growing regions in the State, the Valley is home to more than 3.6 million people. The Valley has four large cities, Stockton, Modesto, Fresno, and Bakersfield, each with a population greater than 200,000. Numerous smaller cities and towns in the Valley are separated by large expanses of agricultural lands. However, as urbanization in the Valley continues to increase, more land is converted to non-agricultural uses.

Open to the Sacramento-San Joaquin River Delta in the North, the Valley is surrounded by the Sierra Nevada Mountains to the east, the Pacific Coast range to the west, and the Tehachapi Mountains to the south. The climate and geography of the Valley create optimal conditions for forming and trapping air pollution.

In the Valley, PM10 is a complex mixture of primary or directly emitted particles (dust and soot), and secondary particles or aerosol droplets formed in the atmosphere from precursor gases. PM10 includes the subset of fine particles with a diameter of 2.5 microns or less (PM2.5). The nature and levels of PM10 concentrations in the Valley typically differ by season. During the fall, higher PM10 concentrations occur between October and November, during relatively stable atmospheric conditions prior to rainfall, and are mostly driven by directly emitted PM10. During the winter, higher PM10 concentrations occur between late November and January during extended periods of stagnant weather with cold, damp, foggy conditions, which are conducive to the formation of secondary particulates. At these times, PM10 is dominated by ammonium nitrate formed from NOx and ammonia emissions. Winter PM10 also contains wood smoke and directly emitted particles. During the winter, PM10 is mostly comprised of particles within the PM2.5 size range.

In 1987, U.S. EPA adopted national ambient air quality standards (NAAQS) for PM10, with a 24-hour PM10 standard of 150 micrograms per cubic meter ($\mu g/m^3$) and an annual standard of 50 $\mu g/m^3$. The Valley is designated as nonattainment with a classification of "serious" for these standards. U.S. EPA revoked the annual PM10 standard effective December 18, 2006.

In June 2003, the San Joaquin Valley District adopted the 2003 PM10 Attainment Plan setting the control strategy for attaining the standards by December 31, 2010. As a mid-course review, the District adopted the 2006 PM10 Plan, reaffirming the control strategy in the 2003 PM10 Attainment Plan. Due to the adoption of ARB and District rules in the 2003 PM10 Plan the Valley's air quality has improved to the point that the District now attains the PM10 standards, ahead of the 2010 attainment deadline.

In October 2006, U. S. EPA determined the Valley attained the PM10 standards, based on 2003-2005 ambient monitoring data (71 FR 63642, 2006 clean data finding). In August 2007, U.S. EPA followed with a proposed affirmation of attainment, based on

the evaluation of 2006 monitoring data (72 FR 49046). These U.S. EPA actions, however, do not constitute redesignation of the Valley to attainment, since further Clean Air Act (CAA or Act) requirements need to be met. The District prepared the 2007 PM10 Maintenance Plan to address these requirements and request official redesignation to attainment.

II. REDESIGNATION REQUIREMENTS

ARB staff reviewed the District's 2007 PM10 Maintenance Plan within the context of the Act, which identifies the following requirements an area must meet to be redesignated to attainment:

A. The PM10 standards have been attained;
B. The District has an approved State Implementation Plan and the State has met all applicable Act requirements for PM10 in the Valley;
C. The improvement in PM10 air quality is due to permanent and enforceable emission reductions; and
D. U.S. EPA has approved a maintenance plan.

The Act also sets the general framework for maintenance plans[1]. The 2007 PM10 Maintenance Plan provides for continued maintenance of the PM10 standards for 10 years after redesignation and includes the following components:

1. Attainment emission inventory;
2. Maintenance demonstration;
3. Commitment to continue the monitoring network operation;
4. Commitment for verification of continued attainment; and
5. Contingency plan to promptly correct any violation of the PM10 NAAQS that occurs after the Valley has been redesignated.

III. PLAN EVALUATION

Based on review of the 2007 PM10 Maintenance Plan and the District's supporting technical analysis ARB staff concurs with the Plan. The following sections describe the major elements of the Plan and the redesignation request.

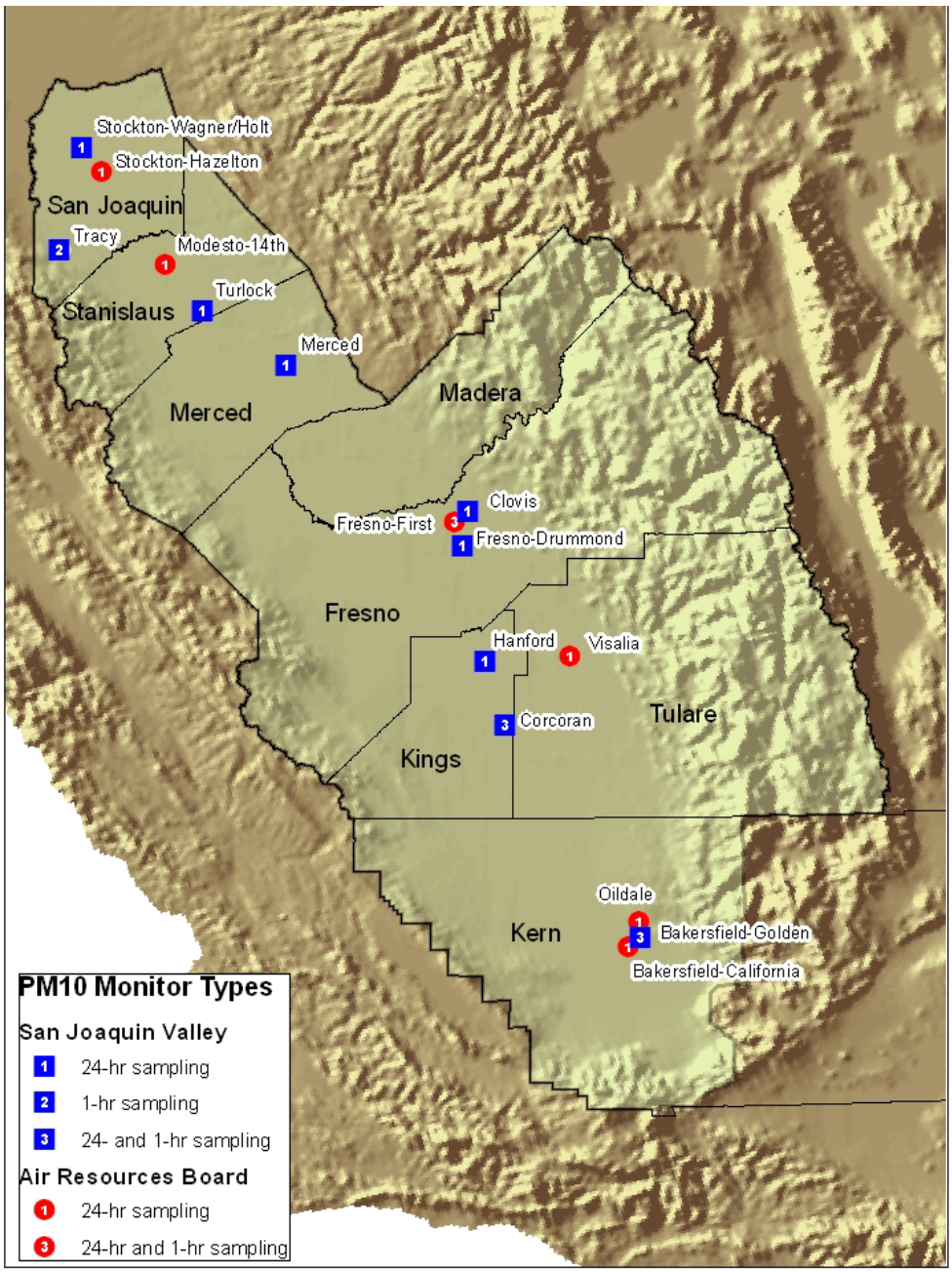
A. The Valley Attains the PM10 Standards

PM10 concentrations are measured at fifteen monitoring stations located throughout the Valley (Figure 1). Table 1 lists air quality data for the 2004-2006 period which demonstrate that the Valley meets both the 24-hour and annual PM10 standards. The values used for assessing attainment are based on quality assured federal reference

[1] Calcagni, John, Memorandum, *Procedures for Processing Requests to Redesignate Areas to Attainment, Office of Air Quality Planning and Standards*, Research Triangle Park, North Carolina, September 4, 1992.

(FRM) or federal equivalent monitors (FEM). Due to regulatory rounding conventions, a 24-hour PM10 concentration exceeds the standard if it measures 155 micrograms per cubic meter (µg/m^3) or over. The 24-hour standard is met when the estimated number of exceedances measured over a three-year period averages one or less per year. The annual standard is met when the annual average averaged over three years is less than or equal to 50 ug/m^3.

Figure 1. PM10 Monitoring Stations in the San Joaquin Valley[a]



a. The monitor at Tracy started operating in 2006.

Table 1. San Joaquin Valley PM10 Data from 2004 to 2006
(based on filter-based monitoring)

Monitoring Station Name	Observed Three-Year 24-hour Maximum[a] ($\mu g/m^3$)	Estimated 24-Hour Exceedance Days	Three-Year Annual Average ($\mu g/m^3$)
Bakersfield-California Ave	153[b]	0	44
Bakersfield-Golden State	154[b]	0	47
Clovis-North Villa Ave	104	0	34
Corcoran-Patterson Ave	140	0	43
Fresno-1st Street	117	0	34
Fresno-Drummond Street	132	0	41
Hanford-S. Irwin Street	142	0	43
Merced-2334 M Street	94	0	29
Modesto-14th Street	96	0	30
Oildale-Manor	145	0	44
Stockton-Hazelton Street	82	0	30
Stockton-Wagner-Holt School	69	0	23
Turlock-S Minaret Street	97	0	31
Visalia-N Church Street	145	0	44

a. Data do not include PM10 concentrations caused by natural/exceptional events which are excluded from regulatory consideration.
b. Because of regulatory rounding conventions, a measured 24-hour PM10 concentration exceeds the standard when it is equal to or over 155 $\mu g/m^3$.

On four days over the last three years (2004-2006), the 24-hour standard was exceeded due to extreme wind conditions that are excluded under the federal rule for natural events. The Act allows areas to exclude approved natural events in regulatory findings, since they are not reasonably preventable or controllable. The four events were submitted to U.S. EPA to be flagged as natural events (Table 2). A more detailed description of each of these natural events is found in Appendix A to this report.

In the 2006 clean data finding, U.S. EPA had already approved the exclusion of the September 3, 2004 event. In the 2007 proposed affirmation of attainment, U.S. EPA has also proposed concurrence with the exclusion of the three natural events recorded in 2006.

Table 2. Natural Events Recoded in the Valley during the 2003-2006 Period

Date	Location Concentration, Monitor Type	Cause	U.S. EPA Approval Status
Sept. 3, 2004	• Corcoran 217 µg/m^3, FRM	Dust resulting from high speed winds north of Corcoran	Approved
Sept. 22, 2006	• Corcoran 215 µg/m^3, FRM 261 µg/m^3, FEM • Bakersfield-Golden 157 µg/m^3, FRM 170 µg/m^3, FEM • Oildale 162 µg/m^3, FRM	Transported dust resulting from dry conditions throughout the Valley and strong winds north of Corcoran	Proposed
Oct. 25, 2006	• Corcoran 304 µg/m^3, FEM • Bakersfield-Golden 193 µg/m^3, FEM	Transported dust resulting from dry conditions throughout the Valley and high winds northwest of Corcoran	Proposed
Dec. 8, 2006	• Corcoran 162 µg/m^3, FEM • Bakersfield-Golden 213 µg/m^3, FEM	Transported dust resulting from dry conditions throughout the Valley and high winds in the southeastern portion of the Valley	Proposed

B. U.S. EPA Approved the 2003 Valley PM10 SIP and the State Has Met Applicable Act Requirements

U.S. EPA approved the amended 2003 PM10 Attainment Plan on May 26, 2004, except for the contingency measures. On October 2006, U.S. EPA determined that the Valley attains the PM10 NAAQS and, under the Clean Data Policy, suspended the contingency measure requirement. Therefore, ARB and the District have met all of the Act requirements applicable for a serious PM10 nonattainment area to be considered for redesignation.

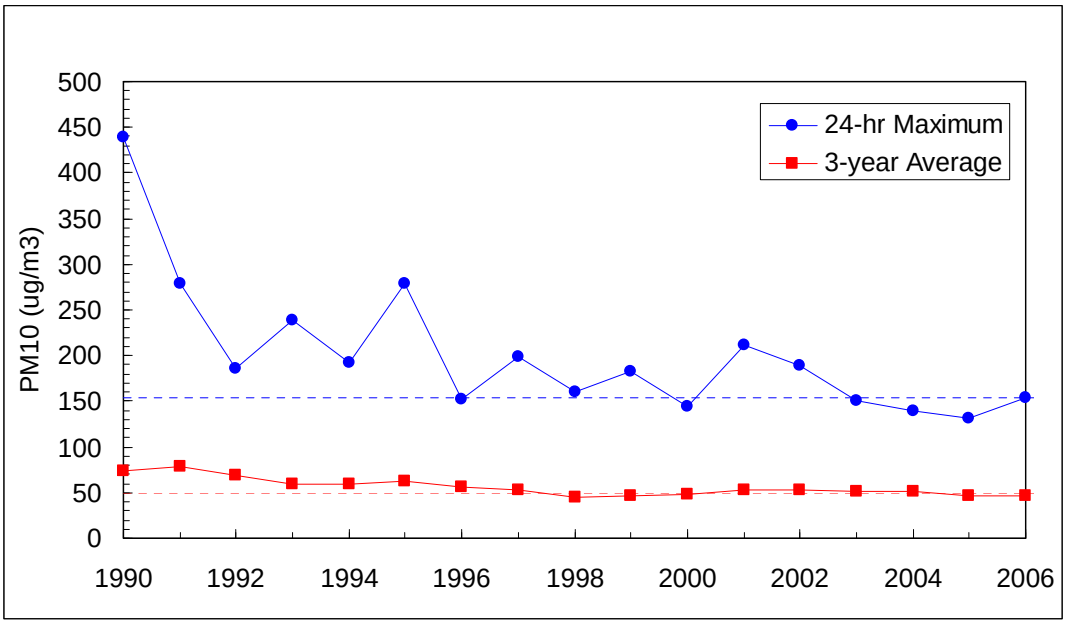
C. Improvement in the Valley's PM10 Air Quality is Due to Permanent and Enforceable Reductions in Emissions

ARB adopted measures achieve the 10 tpd NOx and 0.5 tpd direct PM10 2010 emission reductions commitment from State mobile sources in the Valley's 2003 PM10 Attainment Plan. The District has adopted all of the rules committed to in the 2003 PM10 Attainment Plan and will not remove, replace, or suspend any emission

reduction measure commitments in the plan, even after the Valley is redesignated as attainment.

Over the past 15 years, PM10 air quality in the Valley has improved as control measures in air quality plans have been adopted. The severity and frequency of PM10 episodes have significantly decreased. In the early 1990's, maximum 24-hour concentrations surpassed 250 µg/m^3, over 40 estimated PM10 exceedances occurred, and annual average concentrations were close to 80 µg/m^3. In comparison, from 2003-2006, there were no violations of the 24-hour PM10 standard and the maximum three-year average concentration was 47 µg/m^3. Figure 2 illustrates the downward trends in the maximum 24-hour PM10 concentrations recorded in the Valley and the maximum three-year averages. ARB staff evaluated these trends based on the nonparametric statistical test, know as the Theil test, that U.S. EPA uses in national air quality trend analyses[2]. This method tests for whether upward or downward trends are real (significant) or a chance product of year-to-year variation (not significant). Theil test results indicate the 1990 to 2006 downward trends in maximum 24-hour and three-year annual PM10 concentrations are statistically significant. As shown in Figure 2, the 24-hour maximum PM10 concentration in 2006 is close to the level of the standard. However, it is still below the standard.

Figure 2. San Joaquin Valley Trends in Maximum 24-hour and Three-Year Average PM10 Concentrations



Data do not include measurements identified as natural/exceptional events

[2] U.S. EPA, *National Air Quality and Emissions Trends Report*, Publication No. EPA 454/R-03-005, Office of Air Quality and Standards, Air Quality Strategies and Standards Division, Research Triangle Park, North Carolina. 2003. http://www.epa.gov/air/airtrends/aqtrnd03/

During this period, the Valley has undergone rapid economic growth and even with continuous increases in population and vehicle travel, PM10 and PM10 precursor emissions have decreased. For example, between 2000 and 2005 population grew by 14% and vehicle miles traveled by 28%, yet PM10 emissions decreased by 10% and NOx emissions by 12% (Table 3), as the result of ongoing control programs.

Table 3. Valley Trends in Emissions, Population, and Vehicle Miles Traveled

	2000	**2005**	**Reduction** (%)
NOx Emissions (tpd)	677	606	10
PM10 Emissions (tpd)	324	284	12
			Increase (%)
Population	3,212,615	3,658,320	14
Average Daily Vehicle Miles Traveled/1000	77,176	98,950	28

Based on qualitative analyses of long-term air quality and weather variables - including temperature, rainfall, wind speed, and atmospheric stability - the District found no conclusive evidence that meteorological conditions during 2003-2006 were unusually favorable to lower PM10 levels. The District points out that in the last two decades PM10 air quality has improved even though weather regimes have cycled between those favorable and unfavorable to PM10 buildup.

D. Maintenance Plan

The 2007 PM10 Maintenance Plan addresses both the 24-hour as well as the rescinded annual PM10 standards and includes the following components: attainment emission inventory; maintenance demonstration; commitment to continue monitoring network operation; commitment for verification of continued attainment; and contingency plan.

1. Attainment Emission Inventory

An emission inventory is a critical tool used to evaluate, control, and mitigate air pollution which is comprised of a systematic listing of the sources of air pollutants along with the amount of pollutants emitted from each source or category over a given period of time. Emission inventories are estimates of the air pollutant emissions released into the environment – they are not direct ambient concentration measurements. To determine the expected emissions in future years, emission inventories incorporate the effects of growth and existing regulations (baseline inventories). An attainment inventory identifies the level of emissions during the period when air quality data show attainment.

U.S. EPA first determined PM10 attainment in the Valley based on 2003-2005 air quality data and has proposed continued affirmation based on 2006 data. The District selected the 2005 emission inventory - the third year of the period when air quality first showed

attainment in the Valley - as the attainment inventory in the PM10 Maintenance Plan. ARB staff has updated the attainment inventory presented in the District's 2007 PM10 Plan to reflect emission reductions achieved by ARB adopted measures that had not been accounted for. Table 4 presents the updated 2005 attainment inventory of direct PM10 and NOx precursor emissions in the Valley split by broad source category. Appendix B includes the detailed 2005 attainment inventory (annual and winter), prior year 2000 emissions, plus projected emissions for 2010 and 2020.

Table 4. San Joaquin Valley: 2005 Attainment Emission Inventory

	Annual (tpd)		**Winter** (tpd)	
Source Category	**PM10**	**NOx**	**PM10**	**NOx**
Stationary and Area-wide	259.8	124.0	232.6	122.5
On-Road Mobile Vehicles	14.8	328.0	14.9	342.1
Off-Road Vehicles and Equipment	9.9	154.0	8.8	141.0
Total	284.5	606.0	256.3	605.6

2. Maintenance Demonstration

In the 2003 PM10 Attainment Plan, the District used a combination of chemical mass balance (CMB) receptor modeling, photochemical modeling, and the linear rollback technique to demonstrate attainment. In the maintenance demonstration for the 24-hour PM10 standard, the District followed updated U.S. EPA modeling guidance in using modeling results in a relative manner, to estimate future year PM10 concentrations. The District estimated the rate of change in PM10 concentrations at individual monitoring sites from the concentrations modeled for 2005 and 2020 and applied the resulting rate of change to measured 2006 PM10 concentrations.

CMB is a statistical model using information on the chemical composition of ambient air samples collected at monitoring sites and information on the composition of source emissions to apportion each source's contribution to the measured ambient sample. The 2003 PM10 Attainment Plan includes CMB receptor modeling analysis for the eleven monitoring sites that, at the time, were nonattainment for the 24-hour standard, the annual standard, or both standards.

Regional photochemical models are used to predict how emissions, weather, and terrain influence future levels of PM10, based on monitoring data, emission inventories, and atmospheric chemistry. To determine how precursor emission reductions reduce PM10 concentrations in the Valley, the 2003 PM10 Attainment Plan used regional photochemical modeling with data collected during the 1995 particulate matter intensive monitoring field study. The modeling indicates that a 1.5 percent reduction in NOx emissions leads to a 1 percent reduction in the ammonium nitrate concentration.

To demonstrate maintenance of 24-hour and annual standards, the District used the CMB analysis results and the 1.5 to 1 ratio of NOx to nitrate resulting from the photochemical modeling in combination with linear rollback. Linear rollback assumes that future PM10 levels above background concentrations will decrease in proportion to projected emission reductions. In the linear rollback for each site, CMB source categories are matched to the appropriate emission inventory categories. The District conducted linear rollback analyses for episodic and annual conditions using 2005 and 2020 baseline emission inventories. Tables 5 and 6 list the projected 2020 values for the 24-hour and the annual PM10 standards, which demonstrate continued attainment throughout the Valley.

Table 5. Projected Maintenance of 24-hour PM10 NAAQS in the San Joaquin Valley

Site Name	Observed Concentration during 2006 Episode ($\mu g/m^3$)	2020 Projected Concentration ($\mu g/m^3$)
Winter Episode		
Bakersfield-California Ave	153	128
Bakersfield-Golden State	154	134
Clovis- North Villa Ave	97	80
Corcoran-Paterson Ave.	136	124
Fresno-1st Street	117	97
Fresno-Drummond Street	132	114
Hanford-S. Irwin Street	142	120
Merced-2334 M Street[a]	69	-
Modesto-14th Street	96	79
Oildale-Manor[b]	no data	128
Stockton-Hazelton Street[a]	79	-
Stockton-Wagner-Holt School[a]	62	-
Turlock-S Minaret Street[a]	83	-
Visalia-N Church Street	145	122
Fall Episode		
Corcoran-Patterson Ave.	137	134
Hanford-S. Irwin Street	124	121

a. Analysis was not conducted for sites recording concentrations below 90 $\mu g/m^3$ - 60% the level of the standard - during the 2006 winter episode.
b. During the winter episode, concentrations at Oildale were assumed to be consistent with concentrations at Bakersfield-California

Table 6. Projected Maintenance of Annual PM10 NAAQS in the San Joaquin Valley

Site Name	2005 Annual Average Concentration ($\mu g/m^3$)	2020 Projected Annual Average Concentration ($\mu g/m^3$)
Fresno-Drummond Street	38.7	34.9
Bakersfield-Golden State	43.2	39.9
Hanford-S. Irwin Street	40.3	36.7
Visalia-N Church Street	44.3	40.2

The Valley is projected to maintain attainment with the PM10 standards due to ARB, District, and other state and local control measures already in place. In addition, future emissions in PM10 precursors are projected to decrease even further as controls resulting from the implementation of the 2007 San Joaquin Valley Ozone Plan as well as the 2008 PM2.5 Attainment Plan, now under development, phase in.

3. PM10 Monitoring Network

The District commits to continue PM10 monitoring to verify sustained attainment of the PM10 standards. Figure 1 shows the geographical distribution of the PM10 monitoring sites throughout the Valley. U.S. EPA's approval of the 2003 PM10 Attainment Plan states that the Valley's PM10 monitoring network "meets all applicable regulatory requirements and is adequate to support the technical evaluation of the PM10 problem" (69 FR 30033). In addition, in the October 2006 clean data finding, U.S. EPA concludes that the Valley's PM10 monitoring network provided adequate data to support the attainment finding.

4. Verification of Continued Attainment

To verify continued attainment of the PM10 standards, the District commits to complete annual reports on the progress made in fulfilling commitments in PM2.5 and ozone plans. The District will make the reports public and will present them to the District's Governing Board beginning in 2008. The reports will include air quality data showing continued PM10 standard attainment; updates on the development, adoption, and implementation of control measures in ozone and PM2.5 attainment plans; and emission reductions status.

5. Contingency Plan

The Act requires the maintenance plan to include contingency provisions for prompt correction of any PM10 standard violation that might occur after the area has been redesignated to attainment. The maintenance plan is not required to contain fully adopted contingency measures that will go into effect without further State action as is required in nonattainment SIPs. Instead, for maintenance plans, the area must have a plan to ensure that contingency measures are adopted once they are triggered.

The District is selecting the level of the 24-hour PM10 standard (155 µg/m^3) or a sequence of levels just below the standard as trigger to determine when contingency measures need to be implemented. If after examination, the event is not classified as due to a natural or exceptional event, the District will analyze the event to determine its causes. The District will determine if emission reductions from rules adopted as part of or committed to in approved plans would prevent any future violation. If further emission reductions are needed, the District would identify applicable control measures from the District's recently adopted 2007 Ozone Attainment Plan or the 2008 PM2.5 Attainment Plan, currently under development.

6. Transportation Conformity Budgets

Under section 176(c) of the Act, transportation activities that receive federal funding or approval must be found to be fully consistent with the SIP. U.S. EPA's transportation rule, found in 40 CFR parts 51 and 93, details requirements for establishing motor vehicle emission budgets (budgets) in SIPs for the purpose of ensuring the conformity of transportation plans and programs with the SIP attainment or maintenance demonstration. The budgets act as a "ceiling" for future on-road mobile source emissions. Exceedances of the budgets indicate an inconsistency with the SIP, and could jeopardize the flow of federal funds for transportation improvements in the region. Projected regional on-road mobile source emissions are compared to these budgets during the periodic updates of regional transportation plans and programs.

The federal transportation conformity regulation[3] requires SIPs to specify the levels of on-road motor vehicle emissions that are consistent with attainment and maintenance of NAAQS. To receive federal approval of funding, transportation agencies must demonstrate that emissions from transportation plans, programs, and projects conform with these "emission budgets."

The Valley transportation agencies require new PM10 budgets based on ARB's latest on-road mobile source emission factor model EMFAC2007 - released by ARB on November 1, 2006 - to amend Transportation Improvement Plans and implement project changes. The currently approved PM10 budgets are based on EMFAC2002 emission projections, which are lower than PM10 budgets based on EMFAC2007, due to better understanding of emissions. The Valley transportation agencies require EMFAC2007 as the basis for conformity determinations for plan amendments scheduled for Winter 2008. Updated PM10 budgets must be approved by U.S. EPA by January 2008 to replace existing budgets. Delay in approval beyond this date would hinder local transportation projects and restrict federal transportation funding.

During the development of the 2007 PM10 Maintenance Plan, the Valley transportation agencies provided updated transportation activity for use in calculating conformity budgets. This information was not available in time for the District to incorporate it into

[3] U.S. EPA maintains online information on its transportation conformity program, including access to relevant rulemakings, policy guidance, and reports at: http://www.epa.gov/otaq/transp/traqconf.htm.

the adopted plan. ARB staff worked with the transportation agencies and the District to reflect the updated activity data in conformity budgets, and post the budgets for the required 30-day public review. In the Resolution approving the 2007 PM10 Maintenance Plan, the District recognized the need for technical refinements to the conformity budgets after adoption of the 2007 PM10 Maintenance Plan. ARB staff proposes ARB adoption of the updated transportation conformity budgets for the region.

On-road motor vehicle emission budgets for transportation conformity were established for the years 2005 and 2020. The new emission budgets for NOx and PM10 are shown in Table 7. The budgets are derived with EMFAC2007 projections and matched to activity data reported by the eight county Councils of Government using ARB's vehicle miles traveled (VMT) matching methodology. These results are adjusted to account for any baseline emission reductions not included in the model, and any emissions that the model does not project (e.g. PM10 emissions from road construction activities, reentrained paved road dust, and reentrained unpaved road dust). The conformity budgets are based on the average annual daily emissions. The District determined that they are applicable for both the annual and 24-hour PM10 standards. Conformity assessments conducted by the transportation agencies against these budgets will use the emission factors in this Plan with updated activity.

Table 7. Motor Vehicle Emission Budgets for PM10 in the San Joaquin Valley, Annual Average (tons per day)

County	2005		2020	
	PM10	**NOx**	**PM10**	**NOx**
Fresno	13.5	59.2	16.1	23.2
Kern	12.1	88.3	14.7	39.5
King	3.1	16.7	3.6	6.8
Madera	3.6	13.9	4.7	6.5
Merced	6.2	39.4	6.5	13.9
San Joaquin	9.1	42.6	10.6	16.7
Stanislaus	5.6	29.7	6.7	10.7
Tulare	7.3	25.1	9.3	10.1

Fugitive dust emissions from roads will continue to grow due to growth in VMT. Section 93.124 of the federal conformity rule, in particular 93.124(c), allows the Plan to establish trading mechanisms between budgets for pollutants or precursors. The basic idea is to allow conformity demonstrations for analysis years to use NOx reductions beyond the attainment level to offset PM10 increases from this VMT growth.

The emission budgets established in this Plan fulfill the requirements of the Act and U.S. EPA regulations to ensure that transportation activities support progress and attainment of the PM10 standards. With the upcoming implementation of the more

health protective federal eight-hour ozone and PM2.5 standards, we recognize that the motor vehicle budgets associated with those SIPs must reflect additional reductions.

Directly emitted PM10 poses a unique challenge that is not experienced with ozone or PM10 precursors. As mentioned above, directly emitted PM10 from paved roads has a linear relationship with VMT. Thus, as VMT grows, paved road dust also grows. Since the opportunities for controlling paved road dust emissions are limited, ARB will continue to work closely with the District, the Councils of Government, and other transportation agencies to address the emissions growth.

IV. STAFF RECOMMENDATION

ARB staff has reviewed the Valley's 2007 PM10 Maintenance Plan and Request for Redesignation and consulted with the District staff during this review. ARB staff finds that the Valley 2007 PM10 Maintenance Plan meets all applicable Act requirements. ARB staff believe that implementation of this Plan would continue to maintain PM10 levels below the national air quality standards throughout the Valley. Therefore, we recommend that the Board adopt the San Joaquin Valley 2007 PM10 Maintenance Plan, including updated transportation conformity budgets, emission inventory, and maintenance demonstration as a revision to the California SIP for submittal to U.S. EPA. In addition, ARB staff recommends that the Board approve the District's redesignation request from nonattainment to attainment for the federal PM10 standard.

APPENDIX A

PM10 Exceptional Events Recorded in the San Joaquin Valley from 2004 through 2006

The U.S. EPA has established criteria for the handling and review of air quality data influenced by exceptional events. Exceptional events are defined as events that are unusual or naturally occurring, that affect air quality, and are not reasonably controllable. The concentrations generated by these events must be in excess of normal historical fluctuations, including background. In addition, demonstration of a clear causal relationship between the high concentration recorded at the monitoring site and the exceptional event must be shown, as well as corroboration that 'but-for' the event, there would not have been an exceedance of the National Ambient Air Quality Standard.

<u>2004 PM10 Exceptional Events</u>

- September 3, 2004
  Monitoring Site, Concentration, Monitor Type:
  Corcoran, 217 $\mu g/m^3$, FRM

  Abnormally high wind speeds (over 3 standard deviations) were reported throughout the Central Valley on September 2nd and 3rd. These northwesterly winds entrained dust in the northern portion of the San Joaquin Valley, upwind of Corcoran. The plume moved southward, depositing dust at the Corcoran monitoring site which peaked in the late morning, gradually decreasing throughout the day.

  This event met the EPA's criteria for determination of an exceptional event. The concentrations were in excess of background and normal historical variations. Only 3 to 5% of daily averaged PM10 concentrations in September have exceeded 100 ug/m3 between 2000 and 2006. A clear and causal relationship between the event and the monitoring site concentrations was established based on the magnitude and timing of peak winds which were associated with the hours of elevated PM10 concentrations. In addition, the substantial increase in concentrations on September 3, during a time when anthropogenic emissions activity was constant, demonstrated that "but for" the natural windblown dust emissions, no exceedance would have occurred.

2006 PM10 Exceptional Events

- September 22, 2006
  Monitoring Site, Concentration, Monitor Type:
  Corcoran, 215 $\mu g/m^3$, FRM
  Corcoran, 261 $\mu g/m^3$, FEM
  Bakersfield-Golden, 157 $\mu g/m^3$, FRM
  Bakersfield-Golden, 170 $\mu g/m^3$, FEM
  Oildale, 162 $\mu g/m^3$, FRM

  Dry conditions throughout the San Joaquin and Southern Sacramento Valleys coupled with high winds, allowed for the entrainment of dust to the north of Corcoran. Transported southward by the same high winds, the dust reached Corcoran on the morning of September 22, 2006, where lower wind speeds allowed for deposition at the monitoring site. Continuing to move southeast, additional PM10 was entrained into the atmosphere, reaching the Bakersfield and Oildale area by early afternoon. Without the arid conditions, high winds, and subsequent entrained dust, the measured concentrations measured at Corcoran, Oildale, and Bakersfield-Golden on September 22, 2006 would have been below the national standard.

  This event met the EPA's criteria for determination of an exceptional event. The concentrations were in excess of background and normal historical variations. Only 3 to 5% of PM10 concentrations in September have exceeded 100 ug/m3 since 2000. A clear and causal relationship between the event and the monitoring site concentrations was established based on the magnitude and timing of peak winds which were associated with the hours of elevated PM10 concentrations. In addition, the substantial increase in concentrations on September 22, during a time when anthropogenic emissions activity was constant, demonstrated that "but for" the natural windblown dust emissions, no exceedance would have occurred.

- October 25, 2006
  Monitoring Site, Concentration, Monitor Type:
  Corcoran, 304 $\mu g/m^3$, FEM
  Bakersfield-Golden, 193 $\mu g/m^3$, FEM

  Dry conditions throughout the San Joaquin Valley, brought on by below normal precipitation, combined with high winds northwest of Corcoran, allowed for the entrainment of dust into the atmosphere. Lower wind speeds in the Central and Southern portions of the San Joaquin Valley accounted for the subsequent deposition of dust at Corcoran on the morning of October 25. Concentrations remained high in Corcoran for most of the day. The dust cloud spread toward Bakersfield by the afternoon, resulting in high concentrations – although lower than those seen in Corcoran. PM10 levels remained elevated at both sites the

next day, but the daily averages were below both the State and National standards.

This event met the EPA's criteria for determination of an exceptional event. The concentrations on October 25 were in excess of both background and normal historical variations. Historically, both the wind speeds seen during the event and the concentration levels recorded at Corcoran and Bakersfield were considered unusually high. Both the magnitude of these concentrations and the timing of the peak winds helped establish a clear and causal relationship between the event and monitoring site concentrations. The substantial increase in concentrations on October 25, during a time when anthropogenic emissions activity was constant, demonstrated that "but for" the natural windblown dust emissions, no exceedance would have occurred.

- December 8, 2006
  Monitoring Site, Concentration, Monitor Type:
  Corcoran, 162 $\mu g/m^3$, FEM
  Bakersfield-Golden, 213 $\mu g/m^3$, FEM

  Continued dry conditions in the San Joaquin Valley, coupled with high winds, particularly southeast of Bakersfield, allowed for the entrainment and subsequent transport of dust to the monitoring sites in Bakersfield beginning in the morning hours. Strong winds west-northwest of Corcoran increased PM10 transport from Bakersfield and the areas between to the northern portions of the Valley. Concentrations increased at several sites, including an hourly high of 645 ug/m3 at Fresno, although Corcoran was the only site north of Bakersfield to exceed the NAAQS.

  This event met the EPA's criteria for determination of an exceptional event. The concentrations were in excess of background and normal historical variations. PM10 concentrations at Corcoran or Bakersfield have exceeded 100 $\mu g/m^3$ only 10 times in December since 1997. In addition, fugitive dust dominated events in December are rare. A clear and causal relationship between the event and the monitoring site concentrations was established based on both the magnitude and timing of peak winds associated with the hours of elevated PM10 concentrations. In addition, the substantial increase in concentrations on December 8, during a time when anthropogenic emissions activity was constant, demonstrated that "but for" the natural windblown dust emissions, no exceedance would have occurred.

APPENDIX B

Emission Inventory

This Appendix contains emission inventory tables for directly emitted PM10, NOx, ROG, and SOx. The emission inventory reflects reductions due to all ARB measures adopted through December 31, 2006. The tables list annual and winter average emissions in tons per day (tpd) for 2000, 2005, 2010, and 2020.

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
STATIONARY SOURCES								
ELECTRIC UTILITIES	0.30	0.60	0.63	0.65	0.28	0.57	0.59	0.62
COGENERATION	0.63	1.22	1.30	1.43	0.63	1.21	1.30	1.43
OIL AND GAS PRODUCTION (COMBUSTION)	1.64	1.05	1.04	1.10	1.64	1.05	1.04	1.10
PETROLEUM REFINING (COMBUSTION)	0.20	0.05	0.05	0.05	0.20	0.05	0.05	0.05
MANUFACTURING AND INDUSTRIAL	0.72	0.79	0.85	0.98	0.62	0.73	0.78	0.89
FOOD AND AGRICULTURAL PROCESSING	1.39	1.44	1.27	0.96	1.01	1.05	0.94	0.73
SERVICE AND COMMERCIAL	0.57	0.67	0.69	0.72	0.80	0.92	0.95	0.97
OTHER (FUEL COMBUSTION)	0.12	0.07	0.06	0.05	0.11	0.06	0.05	0.05
SEWAGE TREATMENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LANDFILLS	0.01	0.04	0.05	0.06	0.01	0.04	0.05	0.06
INCINERATORS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOIL REMEDIATION	0.00	0.06	0.07	0.08	0.00	0.06	0.07	0.08
OTHER (WASTE DISPOSAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LAUNDERING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DEGREASING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COATINGS AND RELATED PROCESS SOLVENTS	0.02	0.00	0.00	0.00	0.02	0.00	0.00	0.00
PRINTING	0.05	0.05	0.05	0.06	0.05	0.05	0.05	0.06
ADHESIVES AND SEALANTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (CLEANING AND SURFACE COATINGS)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
OIL AND GAS PRODUCTION	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PETROLEUM REFINING	0.06	0.00	0.00	0.00	0.06	0.00	0.00	0.00
PETROLEUM MARKETING	0.00	0.03	0.03	0.04	0.00	0.03	0.03	0.04
OTHER (PETROLEUM PRODUCTION AND MARKETING)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHEMICAL	2.36	2.30	2.67	3.25	2.35	2.30	2.67	3.25
FOOD AND AGRICULTURE	12.12	9.67	9.30	9.60	12.38	9.97	9.43	9.78
MINERAL PROCESSES	4.32	3.48	3.79	4.37	3.96	3.37	3.67	4.23
METAL PROCESSES	0.23	0.17	0.20	0.24	0.23	0.17	0.20	0.24
WOOD AND PAPER	0.50	0.54	0.61	1.11	0.50	0.53	0.60	1.08

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
GLASS AND RELATED PRODUCTS	1.05	1.08	1.18	1.42	1.08	1.08	1.18	1.42
OTHER (INDUSTRIAL PROCESSES)	0.83	0.14	0.16	0.19	0.84	0.14	0.15	0.18
Stationary Subtotal	27.15	23.48	24.01	26.39	26.78	23.41	23.82	26.31
AREA-WIDE SOURCES								
CONSUMER PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARCHITECTURAL COATINGS AND RELATED PROCESS SOLVENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PESTICIDES/FERTILIZERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASPHALT PAVING / ROOFING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL FUEL COMBUSTION	11.85	11.34	9.70	9.04	22.84	21.84	18.64	17.34
FARMING OPERATIONS	84.30	61.52	61.69	62.70	64.58	51.05	51.43	52.84
CONSTRUCTION AND DEMOLITION	11.62	10.88	11.94	11.79	10.64	9.97	10.94	10.80
PAVED ROAD DUST	41.67	44.56	46.82	58.43	39.34	42.06	44.19	55.14
UNPAVED ROAD DUST	46.70	42.30	41.55	43.08	35.25	31.57	31.01	31.97
FUGITIVE WINDBLOWN DUST	50.82	42.23	41.11	39.90	32.54	26.51	25.83	25.12
FIRES	0.16	0.17	0.18	0.21	0.16	0.17	0.18	0.21
MANAGED BURNING AND DISPOSAL	21.55	21.21	20.86	20.10	24.45	23.97	23.46	22.36
COOKING	1.94	2.06	2.22	2.55	1.94	2.06	2.22	2.55
OTHER (MISCELLANEOUS PROCESSES)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Area-Wide Subtotal	270.62	236.30	236.10	247.83	231.76	209.21	207.92	218.36
ON-ROAD MOBILE SOURCES								
LIGHT DUTY PASSENGER (LDA)	1.28	1.37	1.49	1.84	1.28	1.37	1.49	1.84
LIGHT DUTY TRUCKS - 1 (LDT1)	0.44	0.45	0.47	0.56	0.44	0.45	0.47	0.56
LIGHT DUTY TRUCKS - 2 (LDT2)	0.73	0.96	1.08	1.34	0.73	0.96	1.08	1.34
MEDIUM DUTY TRUCKS (MDV)	0.30	0.54	0.60	0.77	0.30	0.54	0.60	0.77
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDV1)	0.06	0.07	0.08	0.11	0.06	0.07	0.08	0.11
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDV2)	0.01	0.02	0.02	0.03	0.01	0.02	0.02	0.03

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
MEDIUM HEAVY DUTY GAS TRUCKS (MHDV)	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.02
HEAVY HEAVY DUTY GAS TRUCKS (HHDV)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
LIGHT HEAVY DUTY DIESEL TRUCKS - 1 (LHDV1)	0.01	0.09	0.06	0.05	0.01	0.09	0.06	0.05
LIGHT HEAVY DUTY DIESEL TRUCKS - 2 (LHDV2)	0.04	0.05	0.05	0.04	0.04	0.05	0.05	0.04
MEDIUM HEAVY DUTY DIESEL TRUCKS (MHDV)	0.64	0.71	0.62	0.46	0.64	0.71	0.62	0.46
HEAVY HEAVY DUTY DIESEL TRUCKS (HHDV)	11.77	10.28	8.78	4.23	11.83	10.34	8.82	4.25
MOTORCYCLES (MCY)	0.02	0.06	0.05	0.04	0.02	0.06	0.05	0.04
HEAVY DUTY DIESEL URBAN BUSES (UB)	0.04	0.04	0.04	0.05	0.04	0.04	0.04	0.05
HEAVY DUTY GAS URBAN BUSES (UB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCHOOL BUSES (SB)	0.08	0.10	0.11	0.12	0.08	0.10	0.11	0.12
OTHER BUSES (OB)	0.02	0.03	0.02	0.02	0.02	0.03	0.02	0.02
MOTOR HOMES (MH)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
On-Road Subtotal	15.49	14.81	13.52	9.71	15.55	14.86	13.57	9.72
OTHER MOBILE SOURCES								
AIRCRAFT	1.11	1.36	1.45	1.75	1.11	1.36	1.45	1.75
TRAINS	0.64	0.66	0.58	0.59	0.64	0.66	0.58	0.59
SHIPS AND COMMERCIAL BOATS	0.07	0.06	0.04	0.04	0.07	0.06	0.03	0.04
RECREATIONAL BOATS	0.59	0.64	0.83	1.38	0.22	0.24	0.31	0.51
OFF-ROAD RECREATIONAL VEHICLES	0.09	0.08	0.09	0.11	0.10	0.09	0.11	0.12
OFF-ROAD EQUIPMENT	4.39	3.87	2.97	1.25	4.38	3.86	2.97	1.26
FARM EQUIPMENT	3.88	3.25	2.50	0.95	3.03	2.54	1.95	0.74
FUEL STORAGE AND HANDLING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Mobile Subtotal	10.76	9.91	8.46	6.08	9.54	8.79	7.41	5.02
GRAND TOTAL	324.03	284.49	282.10	290.00	283.63	256.28	252.72	259.41

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
STATIONARY SOURCES								
ELECTRIC UTILITIES	2.87	3.26	3.11	3.42	2.60	3.20	3.07	3.38
COGENERATION	9.90	10.04	7.28	8.20	9.90	10.04	7.28	8.20
OIL AND GAS PRODUCTION (COMBUSTION)	33.80	11.20	10.00	9.68	33.78	11.20	10.00	9.68
PETROLEUM REFINING (COMBUSTION)	1.49	0.20	0.10	0.10	1.47	0.20	0.10	0.10
MANUFACTURING AND INDUSTRIAL	33.63	32.23	34.59	39.94	28.60	26.66	28.55	32.89
FOOD AND AGRICULTURAL PROCESSING	21.34	18.02	15.43	10.26	14.04	11.97	10.20	6.83
SERVICE AND COMMERCIAL	9.52	7.70	7.88	8.07	12.62	11.06	11.33	11.59
OTHER (FUEL COMBUSTION)	1.86	1.44	1.20	0.90	1.69	1.29	1.08	0.82
SEWAGE TREATMENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LANDFILLS	0.00	0.02	0.03	0.03	0.00	0.02	0.03	0.03
INCINERATORS	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
SOIL REMEDIATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (WASTE DISPOSAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LAUNDERING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DEGREASING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COATINGS AND RELATED PROCESS SOLVENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRINTING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ADHESIVES AND SEALANTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (CLEANING AND SURFACE COATINGS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OIL AND GAS PRODUCTION	0.17	0.11	0.12	0.13	0.17	0.11	0.12	0.13
PETROLEUM REFINING	0.11	0.25	0.25	0.25	0.11	0.25	0.25	0.25
PETROLEUM MARKETING	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.03
OTHER (PETROLEUM PRODUCTION AND MARKETING)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHEMICAL	0.23	0.30	0.35	0.41	0.22	0.30	0.34	0.41
FOOD AND AGRICULTURE	9.79	9.11	8.96	8.79	9.42	9.06	8.93	8.77
MINERAL PROCESSES	2.44	2.33	2.55	3.05	2.28	2.30	2.52	3.01
METAL PROCESSES	0.03	0.07	0.07	0.09	0.03	0.04	0.05	0.06
WOOD AND PAPER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
GLASS AND RELATED PRODUCTS	8.73	9.38	8.37	10.13	8.94	9.38	8.37	10.12
OTHER (INDUSTRIAL PROCESSES)	0.15	0.16	0.16	0.16	0.15	0.16	0.16	0.16
Stationary Sources Subtotal	136.11	105.85	100.49	103.67	126.09	97.28	92.42	96.48
AREA-WIDE SOURCES								
CONSUMER PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ARCHITECTURAL COATINGS AND RELATED PROCESS SOLVENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PESTICIDES/FERTILIZERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASPHALT PAVING / ROOFING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL FUEL COMBUSTION	6.72	6.34	5.96	5.73	10.14	9.61	8.95	8.44
FARMING OPERATIONS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONSTRUCTION AND DEMOLITION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PAVED ROAD DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNPAVED ROAD DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FUGITIVE WINDBLOWN DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIRES	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
MANAGED BURNING AND DISPOSAL	12.12	11.93	11.72	11.30	15.94	15.66	15.35	14.72
COOKING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (MISCELLANEOUS PROCESSES)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area-Wide Sources Subtotal	18.87	18.30	17.71	17.07	26.11	25.29	24.33	23.19
ON-ROAD MOBILE SOURCES								
LIGHT DUTY PASSENGER (LDA)	40.58	22.17	14.54	5.80	43.92	23.95	15.70	6.25
LIGHT DUTY TRUCKS - 1 (LDT1)	18.20	10.00	6.67	2.72	19.70	10.75	7.16	2.92
LIGHT DUTY TRUCKS - 2 (LDT2)	29.81	19.78	13.81	6.54	32.37	21.40	14.93	7.06
MEDIUM DUTY TRUCKS (MDV)	15.75	13.42	9.46	4.82	17.11	14.52	10.22	5.20
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDV1)	5.31	4.72	4.00	3.75	5.67	5.02	4.22	3.94
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDV2)	1.25	1.03	0.97	0.86	1.34	1.09	1.02	0.90
MEDIUM HEAVY DUTY GAS TRUCKS (MHDV)	2.85	2.17	1.72	0.85	3.06	2.32	1.84	0.90

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
HEAVY HEAVY DUTY GAS TRUCKS (HHDV)	2.98	2.54	1.92	1.46	3.22	2.75	2.06	1.57
LIGHT HEAVY DUTY DIESEL TRUCKS - 1 (LHDV1)	0.33	5.41	3.44	1.94	0.34	5.58	3.54	1.99
LIGHT HEAVY DUTY DIESEL TRUCKS - 2 (LHDV2)	2.37	3.34	2.67	1.38	2.44	3.44	2.75	1.42
MEDIUM HEAVY DUTY DIESEL TRUCKS (MHDV)	19.60	21.31	16.79	7.02	20.26	22.02	17.35	7.25
HEAVY HEAVY DUTY DIESEL TRUCKS (HHDV)	192.84	213.43	191.89	79.69	198.81	220.22	197.99	81.55
MOTORCYCLES (MCY)	0.45	1.44	1.48	1.64	0.49	1.57	1.61	1.78
HEAVY DUTY DIESEL URBAN BUSES (UB)	1.99	2.24	2.33	2.46	2.05	2.31	2.40	2.53
HEAVY DUTY GAS URBAN BUSES (UB)	0.23	0.28	0.31	0.40	0.25	0.30	0.34	0.44
SCHOOL BUSES (SB)	2.06	2.40	2.48	2.27	2.13	2.48	2.55	2.34
OTHER BUSES (OB)	0.67	1.09	0.98	0.54	0.70	1.14	1.03	0.56
MOTOR HOMES (MH)	1.49	1.14	0.97	0.52	1.62	1.22	1.04	0.55
On-Road Mobile Sources Subtotal	338.76	327.91	276.42	124.66	355.43	342.06	287.75	129.16
OTHER MOBILE SOURCES								
AIRCRAFT	2.46	3.05	4.34	5.24	2.45	3.04	4.34	5.23
TRAINS	30.51	23.64	20.04	21.46	30.51	23.64	20.04	21.46
SHIPS AND COMMERCIAL BOATS	1.19	1.00	1.04	1.50	1.17	0.99	1.03	1.49
RECREATIONAL BOATS	2.20	3.18	3.50	3.61	0.88	1.27	1.39	1.43
OFF-ROAD RECREATIONAL VEHICLES	0.13	0.15	0.18	0.28	0.14	0.16	0.19	0.34
OFF-ROAD EQUIPMENT	78.75	70.42	55.68	31.14	79.18	70.80	55.96	31.29
FARM EQUIPMENT	63.60	52.48	41.66	19.18	49.74	41.05	32.57	15.00
FUEL STORAGE AND HANDLING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Mobile Sources Subtotal	178.84	153.92	126.43	82.41	164.08	140.95	115.52	76.25
GRAND TOTAL	672.58	605.97	521.05	327.81	671.71	605.59	520.02	325.07

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
STATIONARY SOURCES								
ELECTRIC UTILITIES	0.23	0.48	0.51	0.58	0.21	0.44	0.47	0.53
COGENERATION	0.29	0.43	0.44	0.46	0.29	0.43	0.44	0.46
OIL AND GAS PRODUCTION (COMBUSTION)	2.10	3.29	3.24	3.32	2.10	3.29	3.24	3.32
PETROLEUM REFINING (COMBUSTION)	0.04	0.02	0.02	0.02	0.04	0.02	0.02	0.02
MANUFACTURING AND INDUSTRIAL	0.26	0.35	0.37	0.43	0.22	0.30	0.32	0.36
FOOD AND AGRICULTURAL PROCESSING	2.27	2.32	2.27	2.20	2.10	2.14	2.10	2.03
SERVICE AND COMMERCIAL	0.28	0.38	0.39	0.40	0.38	0.49	0.50	0.52
OTHER (FUEL COMBUSTION)	0.16	0.15	0.12	0.08	0.14	0.13	0.10	0.07
SEWAGE TREATMENT	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
LANDFILLS	1.43	1.59	1.74	2.01	1.42	1.59	1.74	2.01
INCINERATORS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOIL REMEDIATION	0.08	0.07	0.08	0.10	0.08	0.07	0.08	0.10
OTHER (WASTE DISPOSAL)	0.47	0.54	0.58	0.70	0.47	0.54	0.58	0.70
LAUNDERING	0.05	0.06	0.07	0.08	0.05	0.06	0.07	0.08
DEGREASING	11.05	1.47	1.49	1.61	11.05	1.47	1.49	1.61
COATINGS AND RELATED PROCESS SOLVENTS	8.16	7.62	8.57	10.47	8.12	7.57	8.52	10.41
PRINTING	1.48	1.65	1.81	2.16	1.48	1.65	1.80	2.15
ADHESIVES AND SEALANTS	0.72	3.20	3.45	4.08	0.72	3.19	3.45	4.08
OTHER (CLEANING AND SURFACE COATINGS)	2.80	3.39	3.97	4.99	2.79	3.38	3.97	4.99
OIL AND GAS PRODUCTION	33.15	27.93	26.78	23.99	33.14	27.92	26.77	23.98
PETROLEUM REFINING	1.75	0.66	0.66	0.67	1.72	0.66	0.66	0.67
PETROLEUM MARKETING	7.34	7.55	8.20	9.49	7.33	7.54	8.20	9.49
OTHER (PETROLEUM PRODUCTION AND MARKETING)	0.15	0.00	0.00	0.01	0.15	0.00	0.00	0.00
CHEMICAL	2.48	2.35	2.60	3.07	2.47	2.35	2.59	3.06
FOOD AND AGRICULTURE	11.03	11.35	11.79	12.84	9.79	9.98	10.37	11.32
MINERAL PROCESSES	0.39	0.37	0.41	0.49	0.33	0.35	0.38	0.46
METAL PROCESSES	0.20	0.35	0.37	0.43	0.20	0.28	0.29	0.33
WOOD AND PAPER	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01
GLASS AND RELATED PRODUCTS	0.10	0.37	0.41	0.49	0.10	0.37	0.41	0.49

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
OTHER (INDUSTRIAL PROCESSES)	0.05	0.20	0.22	0.30	0.05	0.19	0.21	0.29
Stationary Sources Subtotal	88.52	78.17	80.59	85.46	86.96	76.43	78.80	83.54
AREA-WIDE SOURCES								
CONSUMER PRODUCTS	24.68	23.48	23.62	28.39	24.68	23.48	23.61	28.38
ARCHITECTURAL COATINGS AND RELATED PROCESS SOLVENTS	11.27	9.41	9.82	10.84	9.25	7.73	8.06	8.90
PESTICIDES/FERTILIZERS	25.24	23.49	22.38	21.56	26.87	25.15	23.97	23.07
ASPHALT PAVING / ROOFING	2.24	2.35	2.39	2.45	1.64	1.72	1.75	1.79
RESIDENTIAL FUEL COMBUSTION	6.32	5.94	4.91	4.41	12.15	11.41	9.40	8.42
FARMING OPERATIONS	59.83	65.41	71.01	85.89	59.80	65.38	70.98	85.86
CONSTRUCTION AND DEMOLITION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PAVED ROAD DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNPAVED ROAD DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FUGITIVE WINDBLOWN DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIRES	0.09	0.09	0.10	0.11	0.09	0.09	0.10	0.11
MANAGED BURNING AND DISPOSAL	16.57	16.32	16.05	15.47	19.39	19.02	18.62	17.78
COOKING	0.43	0.44	0.48	0.55	0.43	0.44	0.48	0.55
OTHER (MISCELLANEOUS PROCESSES)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area-Wide Sources Subtotal	146.66	146.94	150.74	169.66	154.30	154.42	156.98	174.86
ON-ROAD MOBILE SOURCES								
LIGHT DUTY PASSENGER (LDA)	47.02	27.22	17.67	7.89	49.72	28.58	18.37	8.03
LIGHT DUTY TRUCKS - 1 (LDT1)	18.23	10.49	6.98	3.44	19.50	11.18	7.45	3.67
LIGHT DUTY TRUCKS - 2 (LDT2)	19.67	14.01	11.06	7.05	20.93	14.93	11.85	7.48
MEDIUM DUTY TRUCKS (MDV)	9.63	7.89	6.26	4.47	10.22	8.37	6.67	4.72
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDV1)	6.93	5.38	3.15	2.27	7.47	5.78	3.40	2.47
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDV2)	1.71	1.26	0.89	0.48	1.86	1.37	0.96	0.53
MEDIUM HEAVY DUTY GAS TRUCKS (MHDV)	5.25	3.35	2.15	0.58	5.88	3.73	2.39	0.64
HEAVY HEAVY DUTY GAS TRUCKS (HHDV)	2.01	1.39	0.86	0.34	2.21	1.49	0.91	0.36
LIGHT HEAVY DUTY DIESEL TRUCKS - 1 (LHDV1)	0.02	0.19	0.16	0.13	0.02	0.19	0.16	0.13

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
LIGHT HEAVY DUTY DIESEL TRUCKS - 2 (LHDV2)	0.09	0.15	0.14	0.10	0.09	0.15	0.14	0.10
MEDIUM HEAVY DUTY DIESEL TRUCKS (MHDV)	0.43	0.53	0.50	0.36	0.43	0.53	0.50	0.36
HEAVY HEAVY DUTY DIESEL TRUCKS (HHDV)	15.82	16.13	15.71	8.45	15.95	16.25	15.83	8.55
MOTORCYCLES (MCY)	2.63	5.76	5.06	5.03	2.79	6.02	5.23	5.08
HEAVY DUTY DIESEL URBAN BUSES (UB)	0.07	0.09	0.09	0.10	0.07	0.09	0.09	0.10
HEAVY DUTY GAS URBAN BUSES (UB)	0.11	0.14	0.15	0.19	0.11	0.14	0.15	0.19
SCHOOL BUSES (SB)	0.29	0.23	0.21	0.18	0.30	0.23	0.21	0.18
OTHER BUSES (OB)	0.36	0.26	0.21	0.12	0.40	0.28	0.23	0.13
MOTOR HOMES (MH)	0.60	0.35	0.23	0.06	0.61	0.35	0.23	0.06
On-Road Mobile Sources Subtotal	130.87	94.82	71.48	41.26	138.54	99.68	74.77	42.76
OTHER MOBILE SOURCES								
AIRCRAFT	5.81	6.75	6.47	7.24	5.79	6.73	6.46	7.23
TRAINS	1.59	1.64	1.54	1.58	1.59	1.64	1.54	1.58
SHIPS AND COMMERCIAL BOATS	0.12	0.12	0.09	0.09	0.12	0.11	0.08	0.09
RECREATIONAL BOATS	14.86	13.18	11.86	11.03	7.69	7.68	7.42	7.76
OFF-ROAD RECREATIONAL VEHICLES	5.26	6.89	7.87	10.35	5.66	7.35	8.37	10.45
OFF-ROAD EQUIPMENT	21.97	19.76	15.35	10.28	22.07	19.84	15.40	10.18
FARM EQUIPMENT	12.97	10.85	8.28	3.45	10.67	9.00	6.90	2.88
FUEL STORAGE AND HANDLING	4.74	3.53	2.08	1.36	4.51	3.40	1.92	1.23
Other Mobile Sources Subtotal	67.32	62.72	53.54	45.38	58.10	55.75	48.10	41.42
GRAND TOTAL	433.38	382.65	356.36	341.76	437.91	386.29	358.65	342.57

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
STATIONARY SOURCES								
ELECTRIC UTILITIES	1.48	0.87	0.89	1.13	1.23	0.84	0.86	1.11
COGENERATION	0.61	0.75	0.77	0.78	0.61	0.75	0.77	0.78
OIL AND GAS PRODUCTION (COMBUSTION)	7.10	2.25	2.24	2.40	7.09	2.25	2.24	2.39
PETROLEUM REFINING (COMBUSTION)	1.84	0.07	0.07	0.07	1.83	0.07	0.07	0.07
MANUFACTURING AND INDUSTRIAL	6.02	6.81	7.28	8.31	5.99	6.79	7.26	8.28
FOOD AND AGRICULTURAL PROCESSING	2.43	2.05	2.01	1.95	1.76	1.57	1.54	1.50
SERVICE AND COMMERCIAL	0.95	0.92	0.93	0.92	0.98	0.94	0.95	0.93
OTHER (FUEL COMBUSTION)	0.03	0.04	0.04	0.05	0.03	0.04	0.04	0.05
SEWAGE TREATMENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LANDFILLS	0.00	0.06	0.06	0.08	0.00	0.06	0.06	0.08
INCINERATORS	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
SOIL REMEDIATION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (WASTE DISPOSAL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LAUNDERING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DEGREASING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COATINGS AND RELATED PROCESS SOLVENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRINTING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ADHESIVES AND SEALANTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (CLEANING AND SURFACE COATINGS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OIL AND GAS PRODUCTION	0.06	0.22	0.24	0.26	0.06	0.22	0.24	0.26
PETROLEUM REFINING	0.31	0.33	0.33	0.33	0.31	0.33	0.33	0.33
PETROLEUM MARKETING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (PETROLEUM PRODUCTION AND MARKETING)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHEMICAL	0.38	0.94	1.02	1.19	0.26	0.90	0.99	1.15
FOOD AND AGRICULTURE	2.22	0.73	0.73	0.74	1.90	0.67	0.67	0.67
MINERAL PROCESSES	1.86	1.52	1.66	1.96	1.63	1.51	1.65	1.95
METAL PROCESSES	0.07	0.01	0.01	0.02	0.07	0.01	0.01	0.02
WOOD AND PAPER	0.00	0.02	0.02	0.02	0.00	0.02	0.02	0.02
GLASS AND RELATED PRODUCTS	4.43	3.79	4.17	5.03	4.52	3.79	4.17	5.03
OTHER (INDUSTRIAL PROCESSES)	0.01	0.12	0.13	0.15	0.01	0.01	0.01	0.02
Stationary Sources Subtotal	29.80	21.49	22.61	25.39	28.30	20.77	21.87	24.63
AREA-WIDE SOURCES								
CONSUMER PRODUCTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
ARCHITECTURAL COATINGS AND RELATED PROCESS SOLVENTS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PESTICIDES/FERTILIZERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ASPHALT PAVING / ROOFING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RESIDENTIAL FUEL COMBUSTION	0.30	0.30	0.29	0.30	0.54	0.54	0.53	0.54
FARMING OPERATIONS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONSTRUCTION AND DEMOLITION	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PAVED ROAD DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UNPAVED ROAD DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FUGITIVE WINDBLOWN DUST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FIRES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MANAGED BURNING AND DISPOSAL	0.86	0.85	0.84	0.82	0.56	0.55	0.54	0.51
COOKING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER (MISCELLANEOUS PROCESSES)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area-Wide Sources Subtotal	1.16	1.14	1.13	1.12	1.11	1.08	1.07	1.05
ON-ROAD MOBILE SOURCES								
LIGHT DUTY PASSENGER (LDA)	0.23	0.16	0.17	0.21	0.22	0.16	0.16	0.19
LIGHT DUTY TRUCKS - 1 (LDT1)	0.10	0.08	0.06	0.07	0.10	0.08	0.06	0.07
LIGHT DUTY TRUCKS - 2 (LDT2)	0.11	0.10	0.10	0.12	0.11	0.09	0.10	0.12
MEDIUM DUTY TRUCKS (MDV)	0.07	0.08	0.08	0.09	0.06	0.08	0.08	0.09
LIGHT HEAVY DUTY GAS TRUCKS - 1 (LHDV1)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
LIGHT HEAVY DUTY GAS TRUCKS - 2 (LHDV2)	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.01
MEDIUM HEAVY DUTY GAS TRUCKS (MHDV)	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00
HEAVY HEAVY DUTY GAS TRUCKS (HHDV)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LIGHT HEAVY DUTY DIESEL TRUCKS - 1 (LHDV1)	0.00	0.05	0.00	0.00	0.00	0.05	0.00	0.00
LIGHT HEAVY DUTY DIESEL TRUCKS - 2 (LHDV2)	0.02	0.03	0.00	0.00	0.02	0.03	0.00	0.00
MEDIUM HEAVY DUTY DIESEL TRUCKS (MHDV)	0.17	0.23	0.03	0.03	0.17	0.23	0.03	0.03
HEAVY HEAVY DUTY DIESEL TRUCKS (HHDV)	1.46	1.75	0.23	0.31	1.45	1.75	0.23	0.31
MOTORCYCLES (MCY)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	ANNUAL				WINTER			
SUBCATEGORY	**2000**	**2005**	**2010**	**2020**	**2000**	**2005**	**2010**	**2020**
HEAVY DUTY DIESEL URBAN BUSES (UB)	0.02	0.03	0.00	0.00	0.02	0.03	0.00	0.00
HEAVY DUTY GAS URBAN BUSES (UB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SCHOOL BUSES (SB)	0.02	0.02	0.00	0.00	0.02	0.02	0.00	0.00
OTHER BUSES (OB)	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00
MOTOR HOMES (MH)	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
On-Road Mobile Sources Subtotal	2.23	2.57	0.71	0.89	2.21	2.55	0.69	0.87
OTHER MOBILE SOURCES								
AIRCRAFT	0.82	0.44	0.48	0.55	0.82	0.44	0.48	0.55
TRAINS	0.89	0.71	0.07	0.02	0.89	0.71	0.07	0.02
SHIPS AND COMMERCIAL BOATS	0.21	0.31	0.08	0.14	0.21	0.30	0.08	0.14
RECREATIONAL BOATS	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
OFF-ROAD RECREATIONAL VEHICLES	0.05	0.06	0.07	0.10	0.04	0.05	0.06	0.09
OFF-ROAD EQUIPMENT	0.45	0.49	0.05	0.06	0.45	0.49	0.05	0.06
FARM EQUIPMENT	0.44	0.42	0.04	0.04	0.34	0.33	0.03	0.03
FUEL STORAGE AND HANDLING	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Mobile Sources Subtotal	2.87	2.42	0.79	0.91	2.76	2.32	0.77	0.88
GRAND TOTAL	36.06	27.64	25.24	28.31	34.38	26.72	24.40	27.43