

APPENDIX N

Mobile Source Emissions Budget

APPENDIX N: MOBILE SOURCE EMISSIONS BUDGET

INTRODUCTION

For nonattainment areas required to demonstrate reasonable further progress and attainment, the U. S. EPA requires that the State Implementation Plan (SIP) contain documentation of the motor vehicle emissions on which the attainment demonstration is based. The amount of mobile source emissions utilized in the attainment demonstration becomes the “emissions budget” for highway and transit vehicles. The transportation plans and programs produced by the transportation planning process are required to result in emissions that are within the budget.

The proportional rollback modeling utilized in this SIP demonstrates attainment of the annual National Ambient Air Quality Standard (NAAQS) in 2001 and the 24-hour NAAQS in 2006. The mobile source emissions budget will be based upon the annual standard budget until 2003. A reasonable further progress demonstration has been completed for 2003. The mobile source emissions budget for the annual attainment will be compared to the reasonable further progress budget for the 24-hour standard and the smaller of the two budgets will be used for transportation conformity purposes. When attainment of the 24-hour standard is achieved, the mobile source emissions budgets for annual and 24-hour attainment will be compared. The smaller of the two budgets then will be used for transportation conformity purposes to ensure attainment of both standards.

MOBILE SOURCE EMISSIONS BUDGET BASED UPON ATTAINMENT OF THE ANNUAL NAAQS

The 2001 annual emissions inventory with control measures adopted as part of this SIP demonstrates attainment of the annual NAAQS for PM₁₀ (See Appendix L). The sources in the annual inventory associated with motor vehicles are used to determine the mobile source emissions budget. For conformity purposes, the motor vehicle emissions budget includes:

- regional re-entrained dust from travel on paved roads;
- vehicular exhaust;
- brake and tire wear;
- travel on unpaved roads; and
- road construction.

The mobile source emissions budget must be expressed in tons/day for transportation conformity purposes. Therefore, the annual budget must be converted into a daily budget and the appropriate sources summed to determine the mobile source emissions budget.

Converting the Annual Budget into Daily Emissions

The average annual budget can be converted to a daily budget by dividing by 365 days. The Vehicle Miles Traveled (VMT) used to project the annual emissions were based upon average daily VMT counts projected by the Tranplan model. Construction emissions were also based upon an average day. The emission from wind erosion can be divided by 365 to represent an average emission for fugitive dust. The average annual and daily mobile source emissions are summarized in Table N-1.

Table N-1

2001 Average Annual and Daily Mobile Source PM₁₀ Emissions (tons)

Mobile Source Category	Average Annual Emissions	Average Daily Emissions
Paved Road Dust (Includes Construction Track Out)	50,822	139.24
Unpaved Road Dust	18,932	51.86
Highway Construction Projects – Activities	1,836	5.03
Highway Construction Projects – Wind Erosion	951	2.61
Vehicular Sulfate PM	489	1.34
Vehicular Tire Wear	100	0.27
Vehicular Brake Wear	163	0.45
Vehicular Exhaust	346	0.95
Total	73,638	201.75

24-HOUR ATTAINMENT DEMONSTRATION AND REASONABLE FURTHER PROGRESS

One of the minimum criteria that the U. S. EPA has established for an adequate mobile source emissions budget is that the budget be consistent with applicable requirements for reasonable further progress and attainment. The budget set for the annual NAAQS attainment is consistent with the applicable requirements for the attainment of the annual standard. This budget must be compared to determine if it is consistent with the requirements for reasonable further progress and attainment of the 24-hour standard.

24-Hour Reasonable Further Progress in 2003

The reasonable further progress valley-wide inventory was calculated for 2003 (See Appendix M). The inventory was calculated to demonstrate reasonable further progress anticipated to obtain the 24-hour NAAQS. This inventory was calculated using average daily traffic volumes and construction activities. The

mobile source emissions included in the 2003 reasonable further progress demonstration for the 24-hour NAAQS are presented in Table N-2.

Table N-2

Daily Mobile Source PM₁₀ Emissions for 2003 (tons)

Mobile Source Category	Average Daily Emissions
Paved Road Dust (Includes Construction Track Out)	132.35
Unpaved Road Dust	15.06
Highway Construction Projects – Activities	2.42
Highway Construction Projects – Wind Erosion	2.96
Vehicular Sulfate PM	1.36
Vehicular Tire Wear	0.28
Vehicular Brake Wear	0.45
Vehicular Exhaust	0.89
Total	155.77

24-Hour Attainment Demonstration in 2006

This SIP demonstrates the attainment of the 24-hour NAAQS by 2006. An emission inventory for the 2006 attainment year for the 24-hour NAAQS has been established (See Appendix E). The daily mobile source emissions are summarized in Table N-3.

Table N-3

Daily Mobile Source PM₁₀ Emissions for 2006 (tons)

Mobile Source Category	Average Daily Emissions
Paved Road Dust (Includes Construction Track Out)	114.86
Unpaved Road Dust	19.50
Highway Construction Projects – Activities	1.57
Highway Construction Projects – Wind Erosion	2.22
Vehicular Sulfate PM	1.52
Vehicular Tire Wear	0.32
Vehicular Brake Wear	0.51
Vehicular Exhaust	0.91
Total	141.41

The mobile source emissions in the attainment year are lower than the mobile source emissions in the reasonable further progress year, reflecting that the SIP-adopted controls more than offset the increase in VMT. The total 24-hour emission inventory for 2003 is 276.48 tons, while the 24-hour attainment inventory for 2006 is 199.25. Based upon the small decrease in the mobile source budgets provided in Tables N-2 and N-3, the emission reductions in other source categories are of a greater magnitude than the relatively small decrease in the mobile source emissions.

MOBILE SOURCE EMISSIONS BUDGETS

As previously outlined, the mobile source emissions budget must be consistent with reasonable further progress and attainment.¹ For purposes of attainment with both the annual and the 24-hour NAAQS for PM₁₀, if more than one budget exists for any given year, the smaller of the two budgets will be used for transportation conformity purposes. The mobile source emission inventories and the resulting transportation conformity budgets are presented for the years 2001 through 2006 in Table N-4. It is important to note that the transportation conformity budgets based upon the annual and 24-hour attainment demonstrations will not be in place until the U. S. EPA finds the SIP budgets adequate for conformity purposes.

Table N-4

Mobile Source Emission Inventories and Resulting Transportation Conformity Budgets (tons/day)

Year	Annual Attainment Budget	Reasonable Further Progress Budget	24-hour Attainment Budget	Resulting Transportation Conformity Budget
2001	201.75			201.75
2002	201.75			201.75
2003	201.75	155.77		155.77
2004	201.75	155.77		155.77
2005	201.75	155.77		155.77
2006	201.75		141.41	141.41

¹ 40CFR93.118(e)(4)(iv)