8.0 MOBILE SOURCE CONFORMITY

In order to balance growing metropolitan regions and expanding transportation systems with improving air quality, EPA established regulations ensuring that enhancements to existing transportation networks will not impair progress towards air quality goals. Under the Clean Air Act Conformity Regulations, transportation modifications in an ozone or carbon monoxide nonattainment area must not impair progress made in air quality improvements. These regulations, published in EPA's Transportation Conformity rule on November 24, 1993 in the Federal Register and amended in a final rule signed on July 31, 1997, require that transportation modifications "conform" to air quality planning goals established in air quality SIP documents. To be found in "conformity" with air quality plans before the attainment plan is approved by EPA, the VOC, NOx, and carbon monoxide emissions generated by mobile sources when a transportation plan is implemented must meet certain emission tests:

- When a mobile source emissions budget SIP has been submitted and found adequate, mobile source emissions must not exceed the mobile emissions budget established in the SIP;
- In areas without a mobile source emissions budget, mobile source emissions must be less than mobile source emissions in 1990 and projected emissions with the improvements included in the transportation plan (action scenario) must be less than projected emissions without the improvements (base scenario).

8.1 Mobile Emissions Budget and the Washington Area Transportation Conformity Process

Mobile source emissions in the Constrained Long Range Plan (CLRP) and six-year Transportation Improvement Program (TIP) cannot exceed the mobile emissions budget. The transportation plans are required to conform to the mobile budget established in the SIP for the short-term TIP years, as well as for the forecast period of the long-range plan, which must be at least twenty years.

In the metropolitan Washington area, modifications to the existing transportation network are advanced through the Transportation Planning Board (TPB) by state, regional and local transportation agencies through periodic updates to the CLRP and TIP. The TIP is updated annually for the metropolitan Washington area and includes transportation modifications and improvements on a six-year program cycle. Pursuant to the conformity regulations, the CLRP and TIP must contain analyses of the motor vehicle emissions estimates for the region resulting from the transportation improvements. These analyses must show that the transportation improvements in the TIP and the plan do not result in a deterioration of air quality goals established in the SIP.

8.2 Budget Level for On-Road Mobile Source Emissions

As part of the development of the SIP, MWAQC, in consultation with the Transportation Planning Board (TPB), establishes a mobile source emissions budget. This budget will be the benchmark used to determine if the region's constrained long range transportation plan (CLRP) and six year transportation improvements program (TIP) conform with the Clean Air Act Amendments of 1990. Under EPA regulations the projected mobile source emissions for 2008 and 2009 become the mobile emissions budgets for the region unless MWAQC takes actions to set other budget levels.

The 2008 and 2009 mobile emissions inventories reflect the most recent models available, EPA's MOBILE6 and the Travel Demand Model Version 2.1C, used by COG's Transportation Planning Department, and the most recent data available, namely 2005 vehicle registration data. The methodology used to project the 2009 attainment year mobile inventory and to recalculate mobile inventories for milestone years is discussed in detail in Section 3.2.3 and Section 4.1.3.

The mobile emissions budget for 2008 Reasonable Further Progress and 2009 attainment are based on the projected 2008 and 2009 mobile source emissions accounting for all the mobile control measures, including Transportation Control Measures and projected regional growth.

8.2.1 Reasonable Further Progress Mobile Budgets

The mobile emissions budgets for the 2008 Reasonable Further Progress are based on the projected 2008 mobile source emissions accounting for all the mobile control measures, including Transportation Control Measures. The mobile emissions budgets for the 2008 Reasonable Further Progress are 70.98 tons/day VOC and 160.3 tons/day NOx.

The Mobile Emissions Budget for 2008 Reasonable Further Progress, based upon the projected 2008 mobile source emissions accounting for all the mobile control measures, including the Transportation Control Measures:

VOC = 70.98 tons/day NOx = 160.3 tons/day

8.2.2 Attainment Year Mobile Budgets

The mobile emissions budgets for the 2009 attainment year are based on the projected 2009 mobile source emissions accounting for all the mobile control measures, including Transportation Control Measures. The mobile emissions budgets for the 2009 Attainment Year are 66.68 tons/day VOC and 146.53 tons/day NOx.

The Mobile Emissions Budget for 2009 attainment year, based upon the projected 2009 mobile source emissions accounting for all the mobile control measures, including the Transportation Control Measures: VOC = 66.67 tons/day NOx = 146.54 tons/day

8.3 Transportation Control Measures (TCMs)

Each time the Constrained Long Range Transportation Plan (CLRP) or the six-year Transportation Improvement Plan (TIP) is amended, the TPB will estimate the emissions from the regional transportation network and compare the expected emissions against the mobile emissions budget set in this SIP. This determination will take into account the projects included in the region's transportation plans and the TCMs shown in Table A, which amount to ___tpd VOC and ___ tpd NOx in 2008 and ____tpd VOC and ___ tpd NOx in 2009. Further information on TCMs can be found in Section 6.5 and in Appendix G.

In anticipation of possible mobile emissions mitigation needs associated with TPB plans and programs, the TPB Technical Committee Travel Management Subcommittee has analyzed a wide range of transportation emissions reduction measures (TERMs). Emission reduction strategies for conformity purposes are identified on an as-needed basis during the development of the TIP and CLRP.

8.4 Trends in Mobile Emissions

The mobile emissions budgets for 2008 and 2009 for Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NOx) reflect a continuation of a downward trend in mobile emissions over time. The VOC and NOx emission levels for mobile sources provided in Section 8.2 reflect declines of 39.3% and 40% for VOC and NOx, respectively, over the period from 2002 to 2008; and declines of 43% and 45% of VOC and NOx respectively from 2002 to 2009.

The steady reductions in mobile emissions are attributable largely to a series of increasingly stringent federal regulations requiring cleaner vehicles and fuels, including the federal Tier II regulations for motor vehicles. The decline in mobile source emissions is also attributable in part to transportation policies that have resulted in large and continuing investments in mass transit facilities and services. Related efforts to promote transit-oriented development are helping to encourage use of transit rather than private vehicles. The Rosslyn-Ballston corridor in Arlington

County, Virginia is a nationally recognized model of long-range planning which has resulted in the location of high-density commercial and residential development within close proximity of Metrorail stations and accompanying high levels of transit use. Similar success stories can be found in the District of Columbia and suburban Maryland.

In addition to continuing investments in major transit facilities, ongoing programs to encourage alternatives to the private automobile have helped keep levels of ridesharing and transit use in the Washington region among the highest in the country. The rapidly increasing use of the Washington Metro's SmarTrip cards is permitting the direct provision of MetroChek subsidies for many transit riders at farecard machines, and the expansion of this technology to commuter rail and buses will provide for seamless transfers for transit riders within the next few years.

The region's Transportation Improvement Program (TIP) includes substantial ongoing funding commitments to promoting ridesharing, telecommuting, and transit use as well as vehicle replacement and retrofit measures and bicycle and pedestrian programs. These commitments provide additional reductions in emissions, which are being reflected in conformity determinations. While not included in the SIP, these ongoing commitments are reducing emissions from mobile sources and are an important part of the contribution of the transportation sector to cleaner air.

Trends toward reduced mobile emissions are occurring despite the negative effects of a shift toward use of sport utility vehicles instead of passenger cars and a steady increase in population, employment and vehicle miles traveled (VMT) within the Washington region. Between 2002 and 2009, regional household population will increase an estimated 12%, while daily VMT will increase by an estimated 9%. The emission increases from this additional travel have been further exacerbated by a shift toward the use of higher-emitting, less fuel-efficient light-duty trucks, such as SUVs, instead of passenger vehicles.

Trends toward increasing population, employment and VMT are expected to remain strong well beyond 2009. The regional cooperative forecasting process predicts that from 2002 to 2020, regional population will grow by 31% and employment will grow by 31%. Regional VMT is predicted to increase by 31% over this time. However, these trends will not reverse the expected decline in regional mobile emissions resulting from cleaner fuels and improved vehicle technology. The recent Tier II passenger vehicle standards and regulations on emissions from heavy-duty diesel vehicles and fuels are expected to produce further dramatic reductions in VOC and NOx emissions as vehicles are replaced and retrofitted over the next 20 years. Projections contained in the National Capital Region Transportation Planning Board (TPB)'s Draft Air Quality Conformity Determination of the 2006 Constrained Long-Range Plan (CLRP) and FY 2007-2012 Transportation Improvement Program (TIP) for the Metropolitan Washington Region indicate that for both pollutants, mobile emission reductions in excess of 50% will occur during this period.