

the District. The measure proposes to take credit for the emission reductions achieved through past and future projects funded under this program for SIP purposes, in two phases. Examples of projects include on-road heavy-duty vehicle modernization, installation of retrofit units, and engine repowers. Phase I of this control measure is based on the projects implemented from 1998 to 2006. Phase II of this measure is based on the reductions to be achieved from the implementation of new projects under the Carl Moyer Program. These reductions were estimated based on the committed level of funding for this Program and a conservative cost-effectiveness assumption of \$14,300 per ton specified in the Carl Moyer Program guidelines (although existing projects have substantially lower (better) cost-effectiveness estimates).

MOB-05 – AB923 LIGHT-DUTY HIGH-EMITTER IDENTIFICATION PROGRAM: This measure calls for the identification of high-emitting on-road light- and medium-duty vehicles up to 8,500 lbs gross vehicle weight. The District is currently conducting a pilot program to identify high-emitters using remote sensing technologies. Owners of identified vehicles will be offered the ability to repair or scrap their vehicles as part of the program. The District is currently allocating a portion of the AB 923 funds for this purpose and CARB has developed guidelines to implement the program.

MOB-06 – AB923 MEDIUM-DUTY HIGH-EMITTER IDENTIFICATION PROGRAM: This measure is similar to SCONRD-02 and would include medium-duty and light-heavy-duty vehicles with 8,501 lbs and up to 14,000 lbs gross vehicle weight. Currently, vehicles in this weight category are not subject to in-use testing program. The AB923 program described in MOB-05 could be expanded to cover this category of vehicles.

MOB-07 – CONCURRENT REDUCTIONS FROM GLOBAL WARMING STRATEGIES (ALL POLLUTANTS): Achieving the AB32 greenhouse gas reduction targets would require significant development and implementation of energy efficiency technologies and extensive shifting of energy production to renewable sources. In addition to reducing GHG emissions, such strategies could concurrently reduce emissions of criteria pollutants associated with fossil fuel combustion. This control measure proposes to quantify the concurrent emission reductions associated with Statewide GHG programs targeted at stationary and mobile sources in the Basin working with various state agencies. Every three to five years, concurrent emission reductions associated with these programs will be quantified and incorporated in the revised baseline emissions as part of the SIP revision process.

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS' (SCAG'S) REGIONAL TRANSPORTATION STRATEGY AND CONTROL MEASURES

Transportation plans within the Basin are statutorily required to conform to air quality plans in the region, as established by the 1990 Federal Clean Air Act and subsequently

reinforced by the Intermodal Surface Transportation and Efficiency Act (ISTEA), Transportation Equity Act for the 21st-Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

The region must demonstrate that its transportation plans and programs conform to the mandate to meet the NAAQS in a timely manner. The regulations governing the implementation of transportation projects within air basins are stipulated in U.S. EPA's Transportation Conformity Rule (40 CFR Parts 51 and 93) and also the Joint Federal Highway Administration (FHWA)/Federal Transit Administration (FTA) regulations, "Planning Assistance and Standards," 23 CFR Part 450 and 49 CFR Part 613.

The long-term transportation planning requirements for emission reductions from on-road mobile sources within the Basin are met by SCAG's Regional Transportation Plan (RTP) which is developed every four years with a 20-year planning horizon. The short-term implementation requirements of the Transportation Conformity Rule are met by SCAG's biennial Regional Transportation Improvement Program (RTIP), the first two years of which are fiscally constrained and demonstrate timely implementation of a special category of transportation projects called Transportation Control Measures (TCMs).

The region is required to identify TCMs, as specified in the Federal Clean Air Act (Section 108 (f)(1)(A)) and also by U.S. EPA's Transportation Conformity Rule (40 CFR Part 93). In the event the region fell out of conformity, only those projects identified as TCMs may go forward. However, once a project is identified as a TCM, certain special conditions and obligations arise.

- **Timely Implementation:** Projects identified as TCMs are tracked for timely implementation. In the event that a particular TCM project is delayed or otherwise fails, a substitute project must be implemented. SAFETEA-LU includes specific requirements on the substitution of TCMs, including similar time frame and emissions reductions, adequate funding and implementation through a collaborative process.
- **Emission Reductions:** In the event that a TCM project is not implemented, an alternative project that provides equal or greater emissions reduction must be provided as a replacement for the original project.
- **Reasonably Available Control Measure (RACM) Analysis:** The region must demonstrate that it has considered all reasonably available control measures, and that projects identified as TCMs have been chosen on the basis of such an analysis.

In general, TCMs are those projects that provide emission reductions from on-road mobile sources, based on changes in the patterns and modes by which the regional transportation system is used. The various strategies considered as part of the 2004 RTP

and 2006 RTIP are defined, collectively, as a single TCM, with specific strategies grouped into its following three components:

- **High Occupancy Vehicle (HOV) Strategy:** This strategy attempts to reduce the proportion of commute trips made by single occupancy vehicles - the clearly preferred mode of travel within the Southern California region, constituting over 75% of all home-to-work trips, according to the 2000 U.S. Census - by increasing the share of HOV ridership within the region. HOV lanes are one example of such projects, where particular segments of heavily used freeways are designated for exclusive use by HOV vehicles, particularly during rush-hour traffic. The purpose of such measures is to make car-pooling and ride-sharing practices more attractive to individuals who may otherwise prefer the convenience of a single occupancy vehicle commute trip.
- **Transit and Systems Management:** This strategy relies primarily on the provision of facilities and infrastructure that incentivize an increase in the proportion of regional trips that make use of transit as a transportation mode. Such measures also promote the use of alternative modes of transportation (e.g., bicycle and pedestrian modes) and seek to incentivize increases in the average vehicle occupancy (AVO) or ridership (AVR) by facilitating van-pools, smart shuttles and other such strategies. Systems management measures include projects such as grade separation and traffic signal synchronization.
- **Information-based Transportation:** This strategy relies primarily on the innovative provision of information in a manner that successfully influences the ways in which individuals use the regional transportation system. Typically, such measures seek to induce changes in trip behavior that beneficially influence the congestion and air pollution impacts of travel. One strategy attempts to increase the proportion of ride-sharing and car-pooling trips by providing information that makes it easier to match up people traveling to and from particular sets of origin and destination points. Another strategy attempts to shift the time-profile of demand - thus, transportation demand management (TDM) - by redistributing traffic flows from peak to off-peak hours. This strategy relies on providing single occupancy vehicle operators with realistic and near-real time estimates of congestion using internet-based information networks, in an effort to influence their decision to defer traveling to a less congested time of day.

The TCMs specified in the 2004 RTP, as well as the projects listed for implementation in the first two years of the 2006 RTIP, were developed as part of an extensive and comprehensive decision-making process that actively sought the input of key stakeholders throughout the region. At the culmination of the process, SCAG's Regional Council approved the transportation control measures and strategies included in the 2004 RTP, and subsequently the investment commitments contained in the 2006

RTIP. These measures and recommendations have accordingly been moved forward for inclusion in the region's air quality plans.

Table 4-4 provides the categories of TCMs as included in the 2006 RTIP, and based on the 2004 RTP, and consistent with the 1994, 1997/99 and 2003 AQMP/SIPs. Listings of the Final 2007 AQMP TCMs and the fiscally constrained projects from the 2004 RTP are contained in Appendix IV-C, Attachments A and B, respectively.

It should be noted that while there have been and continue to be significant improvements in the emission control technology required for on-road vehicles¹, trends assessed as part of the regional transportation planning process indicate that the increase in vehicle emissions resulting from increases in the number of vehicles on the road and the number of vehicle miles they each are driven may overwhelm future benefits from technology improvements. As a result, it is imperative that the region seek alternative and innovative ways to reduce transportation-related air pollution and environmental impacts.

¹ Such measures are outside the definition of TCMs, which are discussed in more detail in Appendix IV-C: Regional Transportation Strategy and Control Measures.

TABLE 4-4

TCM Project Categories

Based on the 2006 Regional Transportation Improvement Program (RTIP)

Project Description
A. High Occupancy Vehicle Measures
<i>HOV projects, and their pricing alternatives</i>
▪ New HOV Lanes – Extensions and Additions to Existing Facilities
▪ New HOV Lanes – With New Facility Projects
▪ New HOV Lanes -- With Facility Improvement Projects
▪ HOV to HOV Bypasses, Connectors, and New Interchanges with Ramp Meters
▪ High Occupancy Toll (HOT) Lanes and Pricing Alternatives
B. Transit and System Management Measures
<i>Bus, rail and shuttle transit expansion and improvements; park and ride lots and inter-modal transfer facilities; bicycle and pedestrian facilities; railroad consolidation programs such as the Alameda Corridor, grade separation projects, channelization, over-passes, underpasses; traffic signalization; intersection improvements</i>
Transit
▪ Rail Track – New Lines
▪ Rail Track – Capacity Expansion of Existing Lines
▪ New Rolling Stock Acquisition -- Rail Cars and/or Locomotives
▪ Express Busways – Bus Rapid Transit and Dedicated Bus Lanes
▪ Buses – Fleet Expansion
▪ Shuttles and Paratransit Vehicles – Fleet Expansion
Intermodal Transfer Facilities
▪ Rail Stations – New
▪ Rail Stations – Expansion
▪ Park & Ride Lots – New
▪ Park & Ride Lots – Expansion
▪ Bus Stations & Transfer Facilities – New
▪ Bus Stations & Transfer Facilities – Expansion
Non-motorized Transportation Mode Facilities (non-recreational)
▪ Bicycle & Pedestrian Facilities - New
▪ Bicycle & Pedestrian Facilities - Expansion
▪ Bicycle Facilities – New
▪ Bicycle Facilities - Expansion
▪ Pedestrian Facilities – New
▪ Pedestrian Facilities - Expansion

TABLE 4-4 (continued)

TCM Project Categories

Based on the 2006 Regional Transportation Improvement Program (RTIP)

<p>C. Information-based Transportation Strategies</p> <p><i>Programs that promote and popularize multi-modal commute strategies to maximize alternatives to single-occupancy vehicle commute trips; marketing and promoting the use of HOV lanes or rail lines to the general public; educating the public regarding cost, locations, accessibility and services available at Park and Ride lots; promoting and marketing vanpool formation and incentive programs; promoting ride-matching services through the Internet and other means of making alternative travel option information more accessible to the general public; Urban Freeway System Management improvements; Smart Corridors System Management programs; Congestion Management Plan-based demand management strategies; county-/corridor-wide vanpool programs; seed money for transportation management associations (TMAs); and TDM demonstration programs/projects eligible for programming in the RTIP.</i></p>
<ul style="list-style-type: none"> ▪ Marketing for Rideshare Services and Transit/TDM/Intermodal Services
<ul style="list-style-type: none"> ▪ Intelligent Transportation Systems/Control System Computerization
<ul style="list-style-type: none"> ▪ Telecommuting Programs/Satellite Work Centers
<ul style="list-style-type: none"> ▪ Real-time Rail, Transit, or Freeway Information Systems (changeable message signs)

The emission benefits associated with the regional transportation strategy are estimated to be 1.8 tons per day of VOC and 0.24 tons per day of PM2.5 reductions in 2014 and 1.7 tons per day of VOC and 0.2 ton per day of NOx reductions in 2023 which are already reflected in the projected emissions. For a detailed discussion of the emission reductions associated with the regional transportation strategy, refer to Appendix IV-C (Regional Transportation Strategy and Control Measures).

STATE AND FEDERAL SHORT-TERM AND MID-TERM CONTROL MEASURES

In addition to District and SCAG’s measures, the Final 2007 AQMP includes additional short- and mid-term control measures aimed at reducing emissions from sources that are primarily under State and federal jurisdiction, including on-road and off-road mobile sources, and consumer products. These measures are required in order to achieve the remaining emission reductions necessary for PM2.5 attainment.

The on-road motor sources category includes passenger cars, light-duty trucks, medium-duty vehicles, heavy-duty vehicles, and motorcycles. There are currently approximately 12 million vehicles in this category in the South Coast Basin. In 2002, these vehicles traveled more than 349 million miles per day; they are projected to travel about 407 million miles per day by the year 2020. CARB and U.S. EPA have primary authority to