CHAPTER 5

TRANSPORTATION CONTROL MEASURES

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- HISTORICAL TRENDS IN VEHICLE ACTIVITY
- TRANSPORTATION CONTROL MEASURES
- ON-ROAD MOBILE SOURCE EMISSIONS ANALYSIS
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5. TRANSPORTATION CONTROL MEASURES

5.1 BACKGROUND

In June 1993, the boards of the Santa Barbara County Association of Governments and the Santa Barbara County Air Pollution Control District jointly approved a Memorandum of Understanding (MOU), which effectively placed the responsibility for developing the transportation elements of the air quality plans with SBCAG. This MOU allows SBCAG to assist the APCD in a cooperative effort toward meeting the APCD's responsibilities for developing the transportation elements of its state and federal air quality plans. Under the MOU, SBCAG is responsible for the development and analysis of the 2007 Plan's on-road mobile source emission estimates and transportation control measures (TCMs). SBCAG also provides the APCD with socio-economic projections, that form the basis for many of the stationary and area source growth forecasts for this 2007 Plan.

Since 1993, the following four State Implementation Plan (SIP) updates have been developed under the MOU: 1) 1993 Rate of Progress Plan; 2) 1994 Clean Air Plan (~~1~~one-hour Ozone Attainment Demonstration Plan); 3) 1998 Clean Air Plan; and, 4) 2001 Clean Air Plan (Maintenance Plan). All these plans were developed under the auspices of Section 176(c)(4) of the 1990 federal Clean Air Act Amendments (Federal Act), which requires that regional transportation planning and programming activities be consistent with the region's air quality planning goals.

To facilitate implementation of the federal Act Section 176(c)(4), past SIP updates for Santa Barbara County explicitly identified an on-road mobile source emission control strategy (TCMs) and the on-road mobile source emission budgets for ozone precursors. These emission budgets established an upper limit on vehicular emissions that the area could accommodate and still achieve and/or maintain the federal 1-hour ozone standard.

Re-designation of Santa Barbara County as an ~~8~~ eight-hour ozone attainment area (effective June 15, 2004) ended the applicability of Section 176(c)(4) of the Clean Air Act and the federal transportation conformity regulation to Santa Barbara County on June 15, 2005. Santa Barbara County is now defined as an area that is designated unclassifiable/attainment for the federal ~~8~~ eight-hour ozone standard and was previously designated attainment for the federal 1-hour ozone standard with an approved maintenance plan. This requires Santa Barbara County to submit a federal Act Section 110(a)(1) maintenance plan (2007 Clean Air Plan) no later than June 15, 2007. Pursuant to a May 20, 2005 EPA memorandum[a] the 2007 Plan will not establish emission budgets for conformity purposes nor will the on-road mobile source emission control strategy identified in the 2007 Plan be subject to the expeditious implementation requirements of the federal conformity regulation. This 2007 Plan and future SIP updates will continue to be developed using the Interagency Consultation and Public Participation Procedures given that these procedures were locally adopted as APCD Rule 701. Similarly, the federal Department of Transportation's metropolitan planning regulations require that future regional transportation plan/program updates must continue to meet the Financially Constrained requirement.

[a] Memorandum from Lydia N. Wegman, Director, Air Quality Strategies and Standards Division, USEPA, to Air Division Directors, Regions I-X, May 20, 2005.

5.2 HISTORICAL TRENDS IN VEHICLE ACTIVITY

5.2.1 STATE ACT PERFORMANCE MEASURE

The state Act requires areas classified as having a "moderate" non-attainment classification for the state one-hour ozone standard, such as Santa Barbara County, to track and meet the following transportation performance standard: a substantial reduction in the rate of increase in passenger vehicle trips and vehicle miles traveled (VMT).[b] ARB has defined substantial reduction as holding growth in VMT and trips to the same growth rate as population.

Figure 5-1 shows that the annual VMT growth rate since 1990 has been highly variable with many peaks accompanied by negative growth occurring during the recession years of 1991 and 1995. For 12 of the 17 years monitored since the passage of the California Clean Air Act in 1988, the annual VMT growth rate has exceeded the annual population growth rate in Santa Barbara County. However, since the year 2000, the VMT growth rate has been declining and over the past two years (2003-2004), total VMT has declined, creating a negative growth rate. As a result, the population growth rate has exceeded the VMT growth rate since 2002. As shown in Table 5-1, the average annual VMT growth rate from 1990 to 1999 was 1.31 percent. The trend over the last five years has been a further decline in the VMT growth rate. For the period 2000 to 2004, the average annual VMT growth rate is 1.23 percent. The annual average population growth rate over these analysis periods is 0.63 percent and 1.06 percent respectively – below the comparable average annual rates of VMT growth. However, ratios of these rates indicate that the VMT growth rate is near to leveling off with the population growth rate.

As indicated by the negative spikes during 1991 and 1995, VMT is sensitive to a host of economic variables and conditions - especially fuel prices. Although non-discretionary trip making (e.g. commuting) can be somewhat insensitive to the price of fuel, discretionary trip making (e.g. tourism, recreational) is. Although causality is difficult to verify, rising fuel prices are considered a major influence on the decline in VMT growth rates in Santa Barbara County beginning in 2002. Conversely, this is somewhat offset by the draw of the County's destination resort attractions.

5.2.2 COMPARATIVE ANALYSIS OF VMT AND TRIP RATE TRENDS

A comparative analysis was completed to show how Santa Barbara County fares on VMT growth with other mid- and large-size counties in the state. Figure 5-2 shows total daily VMT (DVMT) between 2000 and 2004 for California counties that have populations greater than 250,000. As shown, Santa Barbara County has the fourth lowest VMT growth rate (2.3 percent) for the period between 2000 and 2004. Figure 5-3 shows a similar graph summarizing growth in each county's daily VMT per capita. As shown, Santa Barbara County is in the middle of the pack, with a DVMT per capita growth rate of 1.6% since 2000.

[b] VMT is considered a surrogate for vehicle trips for state Act performance standard monitoring.

5.3 TRANSPORTATION CONTROL MEASURES

TCMs are programs or activities that states and localities can implement to encourage the traveling public to rely less on the automobile or to use the automobile more efficiently. TCMs reduce emissions from on-road motor vehicles and trucks by: improving the existing transportation system to allow motor vehicles to operate more efficiently; inducing people to change their travel behavior to less polluting modes; or, ensuring emission control technology improvements in the motor vehicle fleet are fully and expeditiously realized. TCMs address the need for the traveling public to carefully consider: 1) the implications of continued reliance on the single occupant vehicle as the major choice of commute trips; 2) the need to provide and promote alternatives to single occupant vehicle travel; and, 3) the need to consider regulating those factors which promote single occupant vehicle travel. While the greatest on-road mobile source emission reductions (over 95 percent) are attributable to motor vehicle emission controls established by federal and state laws and the natural attrition of older more polluting vehicles (i.e., fleet turnover), TCMs should be considered as an integral part of air quality plans given that they help meet multiple objectives (e.g., congestion relief, energy efficiency, etc.).

Table 5-2 summarizes the implementation characteristics of all currently adopted TCM categories in the county. Identified are: the type of TCM; the adopting agency/agencies; the agency/agencies responsible for implementing the TCM; the formal agreements between the adopting and implementing agencies; and, how TCM implementation will be monitored and by whom. All currently adopted TCMs except for T-18 (Alternative Fuels) are listed as TCMs by the U.S. EPA in Section 108(f) of the federal Act.

For state air quality planning purposes, control measures are classified as being adopted, proposed, contingency, further study, or deleted. Adopted TCMs are those projects and programs that the APCD has formally adopted and included in the federal SIP. These TCM projects/programs were developed as part of the 1994, 1998, 2001 and 2004 Plans and are listed in Table 5-3. These measures meet the every feasible control measure (Health and Safety Code, Section 40914(b)) provisions of the state Act.

All TCMs evaluated as part of the last triennial update (2004 Plan) are listed below.

Currently Adopted

T-1 Trip Reduction Ordinance
T-2 Employer Based Transportation Demand Management Programs
T-3 Work Schedule Changes
T-4 Area-wide Ridesharing Incentives
T-5 Improve Commuter Public Transit Service
T-7 Traffic Flow Improvements
T-8 Parking Management
T-9 Park-and-Ride / Fringe Parking
T-10 Bicycle and Pedestrian Programs
T-13 Accelerated Retirement of Vehicles
T-17 Telecommunications
T-18 Alternative Fuels
T-19 Public Education

Proposed for Adoption
None.

Proposed For Further Study
T-6 High Occupancy Vehicle (HOV) Lanes/High Occupancy Toll (HOT) Lanes
T-14 Activity Centers (i.e., Indirect Source Review – Land use measures)
T-15 Extended Vehicle Idling
T-20 Parking Management to Reduce Non-commute Single Occupant Vehicle Use

Proposed As Contingency Measures
T-21 Enhanced Inspection and Maintenance Program

Proposed For Rejection
None.

The TCMs proposed for further study and as contingency measures under state air quality planning requirements (2004 Clean Air Plan) and projects included in the 101-In-Motion Implementation Plan will form the basis for the 2007 Plan on-road mobile source control strategy. Also included are measures that have been implemented during the reporting period 2004-2006 such as new transit routes (e.g., MTD Valley Express) and traffic flow improvements (e.g., SBCAG Freeway Service Patrol). Tables 5-4 through 5-6 lists these measures and the process by which the implementation feasibility will be assessed.

As shown in Table 5-4, the source of most of the TCMs proposed for adoption is the Highway 101 Deficiency Plan (SBCAG, June 2002) and the 101-In-Motion Implementation Plan (SBCAG, July 2006). The potential air quality impacts of the worsening Highway 101 congestion in the South Coast of Santa Barbara County have been outlined in previous Clean Air Plans. The worsening congestion on the 4-lane segment of Highway 101 between the Ventura-Santa Barbara County line and the City of Santa Barbara continues to have an affect on the local economy, air quality, and mobility within the South Coast area. In 2002, SBCAG joined with other agencies to prepare the Highway 101 Deficiency Plan to address the growing congestion on Highway 101 within the South Coast. The plan, adopted by local agencies and SBCAG, included short-term congestion relief improvements and committed adopting agencies to complete the 101-In-Motion Plan.

The goal of the 101-In-Motion Plan was to develop long-term solutions for addressing congestion on 101 through a process that would include a broad range of public members. A Stakeholder Advisory Committee was formed to include major employers, representatives from the business community, commuters, environmental interests, automobile advocates, alternative transportation advocates, non-profit community organizations, and neighborhood/homeowner associations. Members of the public were invited to community meetings and many proposed solutions and provided information on what was most important to them regarding possible solutions. A "package" of solutions was identified through this extensive public outreach process and was formally approved by the SBCAG board in October 2005. The 101-In-Motion Plan was completed in July 2006, and incorporates the recommendations made through the public outreach process. The major components of the Implementation Plan include; widening

Highway 101 between the Ventura County line and Milpas Street to provide HOV lanes on both sides of the freeway, commuter rail service between Ventura County and Goleta, extensive transportation demand management programs, and intelligent transportation systems (ITS) improvements. It should be noted that each of these are considered feasible transportation control measures. However, some elements are entirely dependent on the Measure D sales tax being renewed, particularly the commuter rail proposal. The long-term solutions identified in the 101-In-Motion Plan will be incorporated into the 101 Deficiency Plan and the Regional Transportation Plan for Santa Barbara County. Major elements of the 101-In-Motion Plan are also being incorporated into the 2007 Plan as transportation control measures. With the community consensus achieved through the outreach process, all of the elements of the 101 Deficiency Plan and 101-In-Motion Implementation Plan are now proposed for adoption.

It should be noted that ~~two~~ some of the measures proposed for adoption will likely be implemented beyond the horizon year of this Clean Air Plan~~; the construction of an HOV lane from the Ventura County line to Milpas Street and operational improvements from Milpas Street to Fairview Avenue~~.

As shown in Table 5-6, the enhanced commuter rail between the North and South County is proposed for rejection. Commuter rail between the north and south counties was studied as part of the 101-In-Motion process and was found to be infeasible since rail stations in the North County are distant from North County population centers and existing regional bus service offers more direct and timely alternative transportation to job centers in the South Coast.

Also proposed for rejection is the Activity Centers/Indirect Source Review measure. This measure is related to APCD's preparation of land use strategies that local agency planners can implement to address issues of air quality. The 2001 Plan contained a chapter detailing this connection between land use decisions and air quality. APCD staff also prepared a Land Use Strategies chapter for the 2004 Plan, with the support of a majority of the members of the Community Advisory Council, but the APCD board voted to not include the Land Use Strategies chapter in the 2004 Plan. Regional government involvement in land use issues is a controversial issue with our elected officials in Santa Barbara County. Recently, SBCAG staff brought forth to its board a proposal to obtain a grant through the Regional Blueprint Planning program as part of its Overall Work Program. The program would have required SBCAG to prepare a plan that would have addressed the link between transportation and land use decisions. The board voted unanimously not to pursue the grant, stating that the program might interfere with local control of land use issues. Based on these past experiences with our local elected officials, it is recommended that the Activity Centers TCM be proposed for rejection at this time.

5.3.1 TCM FUNDING

Since, the passage of the Inter-modal Transportation and Efficiency Act (ISTEA) in 1991 and continuing with the reauthorization of the national transportation bill, SAFETEA-LU, in 2005, the source of funding for transportation control measures primarily comes from the federal Congestion Management and Air Quality (CMAQ) program. The CMAQ program was specifically created to provide a funding source for TCMs in areas designated non-attainment or maintenance for the national ambient air quality standards (NAAQS). With the attainment classification for the federal 8-hour ozone standard and revocation of the 1-hour federal ozone

standard in April 2005, annual apportionments of federal CMAQ funds will end for Santa Barbara County. In April 2006, SBCAG began a joint process with the Association of Monterey Bay Area Governments (AMBAG) to create a two year CMAQ "phase-out" program that would allow SBCAG and the Monterey Bay region to receive SAFETEA-LU CMAQ funds, even though our areas are in attainment of the Federal standards. The measure was approved by the Senate in September 2006, resulting in $1.27 million for Santa Barbara County through fiscal year 2007/08. This amount will be used to support, maintain, and implement the transportation demand management programs administered by SBCAG Traffic Solutions.

A local sales tax referendum approved by the voters in 1989 (Measure D) currently generates approximately $25 million per year for specific transportation improvements and roadway maintenance needs in Santa Barbara County. Measure D will sunset in March 2010. In order to continue to meet these needs, an effort to renew Measure D was initiated by SBCAG. Working closely with local agencies and the public, staff developed a Measure D renewal transportation expenditure plan, which was unanimously approved by the SBCAG board in April 2006. The plan proposed a continuation of the existing ½ percent sales tax plus an addition of a ¼ percent to the sales tax to fund specific projects and programs. In the November 2006 election, the Measure D renewal did not receive the 2/3 voter approval necessary. SBCAG has undertaken listening sessions with those groups that expressed opinions for and against the Measure D renewal and ~~will present a report to the SBCAG Board who will determine the next steps~~ is working on developing another renewal effort for the 2008 election.

The renewal of Measure D is vital to many of the TCM projects listed above and will allow them to be implemented in a timely manner. It will fund a large share of the planned South Coast U.S. 101 improvements, as well as provide a major boost for local transit operators, regional transit and other alternative transportation projects, and programs such as SBCAG Traffic Solutions. In the absence of Measure D funding, the commuter rail, interregional bus service, and carpool/vanpool programs detailed in the 101-In-Motion Plan will not likely be implemented. ~~Based on this uncertainty, emission benefits of these measures were not calculated and nor incorporated into this Plan.~~ Furthermore, with Measure D funds available, ~~The~~ the timing on the delivery of the ~~HOV lane additions~~ entire six lane project south of ~~Milpas Street~~ Cabrillo-Hot Springs, ~~ITS improvements~~, will likely extend beyond 2020 (beyond the horizon year of this Plan), but are expected to be constructed by 2030. The ~~and the~~ operational improvements north of Milpas Street to Fairview Avenue would also be ~~extended~~ constructed ~~well beyond the year until~~ by 2030~~, with full delivery of these three components anticipated around 2040~~. Without Measure D funds available, these large projects would not be constructed until 2040 or beyond. Based on this uncertainty, emissions benefits of these measures were not calculated nor incorporated into this Plan. These projects will need to be accounted for in future Plans.

5.4 ON-ROAD MOBILE SOURCE EMISSIONS ANALYSIS

On-road mobile source emissions are estimated using the California Air Resources Board (ARB) on-road mobile source emissions inventory model, EMFAC. At this time, ARB is currently ~~in the process of updating the~~ seeking EPA approval of the EMFAC 2007v2.3 model. ARB has made the EMFAC 2007v2.3 available ~~a preliminary "working draft" of the new EMFAC model~~ for use by Districts to develop their on-road mobile source planning inventories. The on-road

emission estimates documented in this Chapter were developed using the ~~working draft of ARB's new EMFAC on-road~~ EMFAC 2007v2.3 emissions model.

On-road mobile source emission forecasts were generated using ~~the working draft of the new~~ the EMFAC 2007v2.3 model for 2002 (baseline year), 2010, 2015 and 2020. The transportation activity data (e.g., regional vehicle miles of travel (VMT), regional vehicle trips, and VMT by speed class distributions) generated by SBCAG's Santa Barbara Travel Model provided the basis for the on-road mobile source emission estimates contained in this plan. In order to calculate 2002 base year trips and VMT, staff applied growth factors developed from Caltrans' estimates of VMT for Santa Barbara County to the SBCAG model year 2000 estimate of VMT and trips. For the 2015 emission forecasts, on-road activity data was interpolated from the 2010 and 2020 model forecasts.

5.4.1 ON-ROAD ACTIVITY DATA INPUTS

Table 5-7 lists the transportation and emissions modeling assumptions of the 2007 Plan on-road mobile source emissions analysis.

The countywide VMT and vehicle trips were derived from SBCAG's Transcad Travel Demand Model. The SBCAG model is fully calibrated in accordance with the federal and state guidelines and performance standards for model accuracy.

The most current modeling products available from the model are a 2000 (base year) and 2010 and 2020 forecasts. These products will be utilized in SBCAG's pending Vision 2030 Regional Transportation Plan (RTP). The coded transportation networks for each forecast scenario reflect road improvements identified in the 2006 Federal Transportation Improvement Program (FTIP). The activity forecasts assume completion of all of the programmed projects (those projects for which specific funding sources have been secured) listed in the 2006 FTIP. It should be noted that some of the projects listed may not be completed until after 2010 and 2015; however, inclusion of these projects in the short-term forecasts does not have any noticeable affect on the activity data. A list of the programmed projects is provided in Table 5-8. Past Clean Air Plans have included planned projects in future forecasts; however a number of the planned projects contained in the RTP are contingent on Measure D funding, so they were not included in the model forecasts. It should be noted that the TCMs listed in Table 5-4 related to the 101 In Motion and Deficiency Plans are currently given the status of "planned". Therefore, the activity data presented here do not account for some of the short-term improvements that are planned on the South Coast of the 101 corridor, such as ITS improvements and commuter rail.

The socio-economic inputs (employment and households) that form the basis for the transportation model-are based on SBCAG's 2002 Regional Growth Forecast (RGF). The 2002 RGF forecasts population, housing, and employment growth in Santa Barbara County out to 2030. Table 5-9 shows the major activity indicators from the 2002 Regional Growth Forecast. The vehicle activity forecasts generated by the SBCAG Travel Model are provided in Table 5-10. These forecasts reflect countywide non-commercial vehicle activity.

Figure 5-4 summarizes the 2005 through 2030 forecasted average annual VMT growth rates and their relationship to population growth rates over the same period. The Plan's horizon year is

2020; however, 2030 data was included due to its availability in the SBCAG's Draft Regional Transportation Plan. This graph indicates that both population and annual average VMT will continue to grow, but at a declining growth rate. VMT growth will outpace population growth by about eight-tenths of one percent by 2020. By 2030, the VMT growth rate will only outpace population growth by about 3-tenths of one percent. This represents a departure of trends experienced between 1980 and 2000 and is closer to the trend seen in VMT growth between 2000 and 2004.

The forecasted population and VMT growth rate trend is interesting but not entirely unexpected. VMT change is a product of demographic, social, and economic factors that vary over time. The 1970s through the 1980s were characterized by: post-second world war children having a baby boom; significant increases in the female labor force; and, significant increases in vehicle ownership per licensed driver. These factors dramatically impacted the demand for travel over this twenty year period. However, these factors have now reached saturation and will be less significant in the future. For example, during the 1990s the female labor force participation rate (% females 16 - 60 or so who are working) stabilized and has probably reached its peak; the post WWII baby boom generation has had their children; and, the number of vehicles per licensed driver is near or at 1.0. Hence, it has been postulated by transportation researchers that in the absence of "new" demographic and/or socio-economic changes, VMT growth in the future should track more closely with overall population growth.

Social factors emerged in the 1990s that impacted travel. Given the increase in dual income families, more vehicle trips resulted (e.g., two working parents requiring two work trips instead of one; an added trip to the day care center; a trip to the gym on the way to or from work etc.). Another potential factor in future demand is the change in ethnic composition. At this time, change in ethnic composition and its impact on travel is not well understood. The emergence of the Hispanic population can be seen in elementary school enrollment data. This ethnic age cohort will age and turn into licensed drivers, but their driving characteristics may differ from the past drivers that were dominated by the white ethnic group. At this time, travel forecasting models do not account for ethnicity and its impact on travel behavior.

Another economic trend that is impacting travel demand in Santa Barbara County is the high cost of housing in the South Coast. With median housing costs over $1 million, many workers in the South Coast are opting to buy more affordable homes in northern Santa Barbara County or Ventura County – living farther from the worksite and increasing VMT. The U.S. Census indicates that between 1990 and 2000, Santa Barbara County experienced approximately a 20 percent increase in the number of commuters who must travel 30 minutes or more from within or to Santa Barbara County for work[c]. The resulting jobs-housing imbalance that these housing costs have fostered is a contributing factor to VMT growth rates into the future.

5.4.2 EMISSIONS MODELING

[c] This estimate includes inter-county commuting into Santa Barbara County from outside counties (e.g., LA, Ventura and San Luis Obispo) and implicitly assumes that these inter-county commutes require 30 minutes or more to achieve.

Two basic quantities are required to calculate a given emission estimate, an emission factor and an activity factor. In general, the emission factor is the amount of emissions generated by a certain amount of motor vehicle activity. A countywide on-road mobile source emission estimate is calculated by summing the product between the vehicle activity (VMT and trips) and the emission factors contained in the EMFAC ~~working draft~~ emissions model developed by ARB.

~~The~~ EMFAC ~~working draft~~ 2007v2.3 computes emissions associated with the following emitting processes:

1) Running exhaust emissions based on VMT;
2) Cold start incremental emissions and hot start incremental emissions based on the number of vehicles starts as a function of time after engine shutoff;
3) Diurnal emissions based on numbers of vehicles;
4) Hot soak emissions based on total numbers of vehicle starts;
5) Evaporative running losses based on VMT, and;
6) Resting loss emissions based on number of vehicles.

~~The working draft of~~ EMFAC 2007v2.3 will produce two types of inventories, an annual average inventory and a planning inventory. This 2007 Plan is based on a summer ozone season (April to October) average daily emissions planning inventory.

ARB distributions were used to allocate VMT and vehicle trips into 24 1-hour time periods within EMFAC. To compute running emissions, each time period's VMT total was stratified into 13 speed classes, or bins (0-65 miles per hour (mph) in 5 mph increments) by vehicle classification. Hence, for the 13 vehicle classifications modeled by EMFAC, there are 24 VMT by Speed Class Distributions (SCD). The SCD estimates for 2002, 2010, and 2020 are derived from SBCAG's travel model. SCD from the A.M. and P.M. peak hour loaded networks were applied to all of the vehicle types except the Urban Bus category, which has a unique drive cycle. For the Urban Bus class, ARB default distributions were applied. The off-peak VMT by SCD were derived by subtracting the A.M. and P.M. peak hour activity from the Daily (ADT) activity for each of the 13 EMFAC speed class bins (0-65 mph by 5 mph increments) and re-calculating the percentage distribution. For the interim year 2015, the VMT by SCD for year 2020 was used, given that it is likely all of the programmed projects would be constructed and functioning by that time.

Traffic analyses completed over the last few years have revealed that the duration of traffic congestion on the County's major freeways is expected to increase in the future. Peak spreading refers to the amount of time freeways experience congestion. Peak spreading is accounted for in the emissions modeling for the 2007 Plan by extending the A.M. and P.M. peak VMT by SCD up to 4 hours (2 hours in the A.M. and 2 hours in the P.M.) for the year 2010 and 6 hours for the years 2015 and 2020. These adjustments to the SCD are described below:

Year	A.M. Peak		P.M. Peak	
	Duration of Congestion	Time Period	Duration of Congestion	Time Period
2002	1 hour	7:00-8:00 AM	1 hour	5:00-6:00 PM
2010	2 hours	6:00-8:00 AM	2 hours	4:00-6:00 PM
2015	3 hours	6:00-9:00 AM	3 hours	4:00-7:00 PM
2020	3 hours	6:00-9:00 AM	3 hours	4:00-7:00 PM

The Countywide VMT and VMT by SCD estimates for years 2000, 2010, 2020, and 2030 from SBCAG's travel model were submitted to ARB for their use in developing the EMFAC 2007v2.3 model. ARB approved these estimates and ~~have~~ has included them in the ~~updated working draft of the~~ EMFAC 2007v2.3 model.

The emissions associated with vehicle starts are accounted for in the EMFAC model based on the distribution of vehicle starts by vehicle classification, vehicle technology class, and operating mode. This allows the model to compute emissions associated with vehicle starts and evaporative processes (for ROC). EMFAC adds these vehicle start and evaporative emissions to running emissions to compute total on-road mobile source emissions.

Historically, SBCAG has adjusted the ARB estimates of vehicle starts for Santa Barbara County. ARB estimates the vehicle starts by factoring the County's vehicle registration data. SBCAG staff has noted that this excludes vehicles that are operating within the County that are registered outside the County (i.e. Ventura or San Luis Obispo residents working in Santa Barbara County). Furthermore, the SBCAG model estimates trip ends, rather than trip-starts. As such, the reliance on trip starts lessens the sensitivity to future mode split/vehicle trip changes resulting from HOV facilities, new transit services, transit fare policy changes, and other TCMs. Based on these concerns, SBCAG revised the estimate of total Countywide vehicle trip starts by applying the EMFAC7G trip-end to vehicle start adjustment factors to SBCAG's travel model output for trip-ends. The revised vehicle start control totals were then input into EMFAC and allocated by vehicle type based on EMFAC's existing activity data distribution percentages.

~~The working draft of EMFAC continues to use the County-specific vehicle registration data to estimate trip starts for Santa Barbara County. Therefore, the emissions analysis for the 2007 Plan calculated trip starts by factoring the travel model trip ends with the EMFAC7G trip-end to vehicle start factors.~~
The on-road activity data used in calculating the daily emissions for the 2007 Plan is summarized in Table 5-11.

5.5 EMISSION RESULTS

The 2007 Plan emission results are summarized below. The model output data (VMT, trips, VMT by SCD) is summarized in Table 5-11. The output sheets from the EMFAC model runs are included at the end of this Chapter.

From 2002-2020, ROC on-road mobile source emissions are forecast to decrease as follows:

2002 ROC Baseline	13.28 tons/day
2010 ROC Forecast	8.24 tons/day
2015 ROC Forecast	5.87 tons/day
2020 ROC Forecast	4.58 tons/day
Total On-Road Mobile Source ROC Emission Decrease 2002 – 2020	**-8.7 tons/day**

From 2002-2020, NOx on-road mobile source emissions are forecast to decrease as follows:

2002 NOx Baseline	18.84 tons/day
2010 NOx Forecast	14.09 tons/day
2015 NOx Forecast	9.92 tons/day
2020 NOx Forecast	6.98 tons/day
Total On-Road Mobile Source NOx Emission Decrease 2002-2020	**11.86 tons/day**

On-road mobile source emissions of ROC and NOx are forecast to decline by 8.7 and 11.86 tons per day respectively. This represents a 66 and 63 percent reduction in ROC and NOx respectively over the 18 year planning horizon of the 2007 Plan. ROC emissions are forecast to decline between 20-30 percent every five years. NOx emissions are forecast to decline over 25 percent every five years after 2010. These ROC and NOx emission reductions will primarily result from state and federal controls on light duty vehicle and heavy-duty diesel emissions and the natural attrition of older vehicles being replaced by newer vehicles (i.e., fleet turnover). Figure 5-5 illustrates how the on-road mobile source emissions are distributed among six major vehicle type categories. These figures show that light-duty autos and trucks will continue to be the primary source of ROC whereas light-duty trucks and heavy-duty vehicles will be the primary source of NOx into the future. The relative contribution of ROC emissions will decline over time for light duty vehicles while heavy duty vehicles will increase its share of NOx emissions in the future.

TABLE 5-1
SANTA BARBARA COUNTY ANNUAL AVERAGE POPULATION AND VMT GROWTH RATES

TIME PERIOD	ANNUAL AVG. GROWTH RATE POPULATION	ANNUAL AVG. GROWTH RATE VEHICLE MILES OF TRAVEL	ANNUAL AVG. GROWTH RATIO (POP:VMT)
1990-1999	0.63 %	1.31 %	1:2.08
2000-2004	1.06 %	1.23 %	1:1.16

TABLE 5-2
SANTA BARBARA COUNTY TRANSPORTATION CONTROL MEASURES

TCM	TCM DESIGNATION	TYPE OF TCM	ADOPTING AGENCY(IES)	IMPLEMENTING AGENCY(IES)	COMMITMENTS	MONITORING MECHANISM (AGENCY)
T-1 T-2	Trip Reduction Program Employer-Based TDM Program	Voluntary; TDM Program; State AQAP	Tier 1: Guadalupe; Buellton; Solvang; County, SYV Tier 2: Lompoc; Santa Maria; Carpinteria; County Unincorporated Tier 3: Santa Barbara; County, Goleta	Tier 1 (County/ Cities) Tier 2 (County/Cities) Tier 3 (County/Cities)	Tiers 1 & 2: Resolution of Commitments from Affected jurisdictions; Tier 3: City and County TDM Program City of Santa Barbara and Goleta area	TDM Program (SBCAG) CMP Conformity (SBCAG)
T-3	Work Schedule Changes	Voluntary	County and Cities	County and Cities; Private Sector	Adopted Policy, County, 1988	Not Applicable (TDM)
T-4	Area Wide Ridesharing	Voluntary	County and Cities	SBCAG	Interagency Agreement	TDM Program (SBCAG)
T-5	Public Transportation	Programmed	County and Cities	SBMTD; SMAT; SBCAG; APCD; COLT; SYVT	FTIP and RTIP; SRTP, TDP	RTP List of Programmed Projects(SBCAG)
T-7	Traffic Flow Improvement	Programmed	County and Cities	County and Cities; Caltrans; SBMTD; SBCAG	FTIP and RTIP	RTP List of Programmed Projects (SBCAG)
T-8	Parking Management	Parking Ordinance	City of Santa Barbara	City of Santa Barbara	Not Applicable	City of Santa Barbara Parking Task Force
T-9	Park-and-Ride Fringe Parking	Voluntary; Programmed	County and Cities	County and Cities; Caltrans	FTIP and RTIP	Caltrans, District 5; RTP List of Programmed Projects (SBCAG)
T-10	Bicycle/Pedestrian	Programmed	County and Cities	County and Cities; Caltrans; SBCAG	FTIP and RTIP; General Bikeway Elements; Bikeway Master Plans	RTP List of Programmed Projects (SBCAG)
T-13	Accelerated Retirement of Vehicles	Voluntary	APCD	APCD	Contract APCD/Engineering	APCD
T-17	Telecommunication	Voluntary	County and Cities	County and Cities; Private Sector	Not Applicable	Not Applicable (TDM)
T-18	Alternative Fuel Program	Voluntary	APCD	APCD; County and Cities	Interagency Agreements Unnecessary	APCD
T-19	Public Education	Committal; Voluntary	County and Cities APCD; SBCAG	County and Cities APCD; SBCAG	Interagency Agreements Unnecessary	Not Applicable; CMP Conformance (SBCAG)

TABLE 5-3
EXISTING SIP TCM COMMITMENTS

TCM	DESIGNATION	CLEAN AIR PLAN YEAR	PROJECT SPONSOR	PROJECT/PROGRAM DESCRIPTION	IMPLEMENTATION STATUS	SIP ANALYSIS?
1-4	Travel Demand Management	1994/1998/2004	Traffic Solutions	City-County TDM Program	Program On-Going	Yes
	Areawide Ridesharing		Traffic Solutions	County Rideshare Program	Program On-Going	Yes
	Work Schedule Changes		Traffic Solutions/ Private Sector	Flexible Work Hours	Program On-Going	No
5	Public Transportation	1994	SBMTD	Isla Vista-SBCC Express Service	Service On-Going	Yes
			SBMTD	Downtown Waterfront Shuttle Expansion	Service On-Going	Yes
			APCD	Clean Air Express Expansion	Service On-Going	Yes
			City of Santa Maria	SMAT Expansion – 1 30' Bus	Service On-Going	Yes
			City of Lompoc	COLT Expansion – 2 Buses and Farebox Recovery System	Service On-Going	Yes
			City of Solvang	SYVT Expansion – 1 Van to establish fixed route service	Service On-Going	Yes
			AMTRAK	Service Expansion from 2 to 4 train stops per day	Service On-Going	Yes
		1998	City of Santa Maria	Transit Bus and expanded service to Guadalupe	Service On-Going	Yes
			County of Santa Barbara	Goleta Rail Platform – San Diegan Extension	Service On-Going	Yes
			County of Santa Barbara	Surf Rail Platform – San Diegan Extension	Service On-Going	Yes
			City of Guadalupe	Guadalupe Rail Platform – San Diegan Extension	Service On-Going	Yes
7	Traffic Flow Improvements	1994	Caltrans	Crosstown Freeway Project	Completed	Yes
			County/Caltrans	Rte. 101 / Patterson Avenue interchange	Completed	Yes
			SBCAG/Caltrans	Rte. 101 / La Cumbre Road interchange	Completed	Yes
			SBCAG/Caltrans	Rte. 101 / Storke Road interchange	Completed	Yes
			SBCAG/Caltrans	Rte. 101 / Betteravia Road interchange	Completed	Yes
			County/Caltrans	Rte. 101 / Fairview Avenue interchange	Completed	Yes
			City of Santa Maria	Rte. 135 / Betteravia Road intersection	Completed	Yes
			County of Santa Barbara	Hollister Avenue / Fairview Avenue intersection	Completed	Yes
				Castillo Street / Montecito Street intersection	Completed	Yes
			City of Santa Barbara	Signal Synchronization – Hollister Avenue	Completed	Yes
			County of Santa Barbara			
8	Parking Management	1994/1998/2004	City of Santa Barbara	Residential Parking Program	On-going	No
9	Park-n-Ride Lots	1998	County of Santa Barbara	Lompoc Park-n-Ride Lot – Ocean Ave./7th St.	Completed	Yes
				Santa Maria Park-n-Ride Lot – Clark Ave./Hwy. 101	Completed	Yes

TCM	DESIGNATION	CLEAN AIR PLAN YEAR	PROJECT SPONSOR	PROJECT/PROGRAM DESCRIPTION	IMPLEMENTATION STATUS	SIP ANALYSIS?
10	Bicycle/Pedestrian	1994	City of Santa Maria	Santa Maria Valley Railroad Bikeway	Completed	Yes
			City of Santa Maria	Battles Road Bicycle and Pedestrian Project	Completed	Yes
			City of Solvang	Alamo Pintado Creek Bikeway/Pedestrian Bridge	Pending	Yes
			City of Santa Barbara	SBCC – East Campus Bicycle and Pedestrian Project	Completed	Yes
			City of Santa Barbara	Crosstown East-West Bikelane couplet	Completed	No
			City of Santa Barbara	Shoreline Dr./Cabrillo Blvd. Bikeway	Completed	No
			County of Santa Barbara	Fairview Ave. Bike lane	Completed	Yes
			County of Santa Barbara	Bradley Road Bikeway	Completed	Yes
			County of Santa Barbara	El Capitan Ranch Bikeway	Completed	No
		1998	City of Santa Maria	1 Bike Locker	Completed	Yes
			County of Santa Barbara	Class II Bikeway in Santa Ynez – Alamo Pintado Rd.	Completed	Yes
			County of Santa Barbara	Refugio Road Class II Bikeway – Samantha Dr.-SR 246	Completed	Yes
			County of Santa Barbara	Phelps Road Class II Bikeway	Completed	Yes
			County of Santa Barbara	Via Real Class II Bikeway – Cravens Lane to Padaro	Completed	No
			County of Santa Barbara	Maria Ygnacio Creek Class I Bikeway	Completed	No
13	Old Car Buyback	1994/1998/2004	APCD	Vehicle Buyback Program (1996-1999, 2004+)	Program On-Going	Yes
18	Alternative Fuel Program	1994	APCD	ITG Program	On-going	Yes
			APCD	Clean Air Express Expansion	On-going	Yes T-5
			SBMTD	Waterfront Shuttle Service Expansion	On-going	Yes T-5
			SBMTD	Easy Lift Conversion of 5 vans to CNG	On-going	Yes
			SBMTD	Gillig bus refurbishment	On-going	Yes
			SBMTD	AMG bus refurbishment	On-going	Yes
		1998	UCSB	2 CNG Truck conversions/fuel maker	On-going	Yes
			City of Lompoc	NG Garbage Truck, roll-off bins, compactors	Project dropped	Yes T-5
			City of Santa Maria	Purchase dual fuel van	On-going	Yes T-5
			City of Santa Maria	Purchase 1 CNG bus	Project Dropped	Yes
19	Public Education	1994/1998/2004	APCD	Overall Work Program	On-going	No
			SBCAG	Overall Work Program	On-going	No
		1998	SB Bike Coalition	Bicycle Video	On-going	No
			County of Santa Barbara	Local Regulations for Electric Vehicles	On-going	No

TABLE 5-4
TRANSPORTATION CONTROL MEASURES PROPOSED FOR ADOPTION

TCM	DESIGNATION	PROJECT SPONSOR	PROJECT/PROGRAM DESCRIPTION	PROCESS
2	Travel Demand Management	Traffic Solutions	Individualized Marketing	101 IM (b) (d)
4	Areawide Ridesharing	Traffic Solutions	Carpool/Vanpool Pricing Incentives	101 IM (b) (d)
5	Public Transportation	SBCAG/ Transit Operators	Interregional Bus Service Program (Clean Air Express, Coastal Express) (a)	101 IM (b) (d)
		SBCAG/ Transit Operators	Local/Regional Bus Service Program	101 IM (b) (d)
		MTD/SBCAG	Express Bus Transit Service – Carpinteria to Santa Barbara (a)	101 Def (c)
		MTD/SBCAG	Express Bus Transit Service – UCSB Line 24 Extension (a)	101 Def (c)
		SBCAG/VCTC	Enhanced Commuter Rail Service – Ventura to Carp/SB/Gol. (a)	101 IM (b) (d)
		SMAT/COLT/SBCAG	Intercommunity Transit Service (Breeze) (a)	CMAQ/TDA
		SBCAG/ Transit Operators	Bus connections to rail stations and transit hubs	(c) 101 IM (b) (d)
		MTD	Valley Express – Service between SY Valley and South Coast	
		MTD	Calle Real/Old Town Shuttle	N/A (c)
		SMAT	Route 24 – Service from Town Center to Hidden Pines/Preisker Park area	N/A (c) N/A (c)
		SMAT	Route 8 – Increased service to West McCoy Ln. and airport industrial area.	N/A (c)
		SMAT	Extension of Route 3 to Edwards Community Center and Pioneer Valley High School	N/A (c)
		COLT	New Route 5 between Mission Plaza and the Com. Center	N/A (c)
6	High Occupancy Vehicle (HOV)/ Toll (HOT) Lanes	Caltrans/SBCAG	HOV Lane on Rte. 101 between Ventura County line to Milpas (HOT Lane dropped by 101 IM as infeasible) (a)	101 IM (b) (d)
7	Traffic Flow Improvements	Caltrans/SBCAG	Network Surveillance – CCTV & Loop Detectors on Rte. 101 between Ventura County line and Hollister Ave. (a)	SHOPP/ Demo
		Caltrans/SBCAG	Changeable Message Signs – Junction of Rte. 101/154 (N & S) and Junction of Route 101/1. (a)	SHOPP
		Caltrans/CHP	CT D5 Traffic Management Center expansion (SLO) – Integrated freeway and arterial control. (a)	101 Def
		MTD	Transit Operations – Vehicle tracking, passenger counts, electronic fare collection, surveillance and communications (a)	101 Def
		Caltrans/SBCAG	Operational Improvements – Milpas to Fairview Ave.: Auxiliary lanes, full lanes and/or interchange improvements.	101 IM (b) (d)
		MTD/Local Agencies	Bus Priority Treatments – Improvements at intersections to provide extra exclusive lanes for buses, bulb-outs at bus stops, and extension of green lights at intersections.	101 IM (b)
		Caltrans/SBCAG	Smart Call Boxes on Rte. 101 between Ventura County line and Hollister Ave. (a)	101 Def (b)
		Caltrans/SBCAG	Ramp Metering – Installation of ramp meters along South Coast 101 corridor, where feasible	101 IM (d)
		City of Santa Maria SBCAG	Skyway Dr./Betteravia Rd. Signal Interconnect (10 signals) Freeway Service Patrol	Local SBCAG
8	Parking Management	SBCAG/Cities of Goleta, Santa Barbara; County; UCSB	Variable Parking Rates by Location (voluntary)	101 IM (d)
9	Park-n-Ride Lots	City of Buellton	Lot near south end of Avenue of the Flags (completed)	Local
13	Old Car Buyback	APCD	Vehicle Buyback Program	ITG/DMV (c)
18	Alternative Fuel Program	MTD	Purchase of ~~5~~ 8 hybrid buses for replacement.	CMAQ/ TDA

(a) Measure augments those proposed for further study in the 2004 Clean Air Plan.
(b) Denotes TCMs for which the timing of implementation is contingent on renewal of the Measure D sales tax and specific allocation of these revenues to these projects. Lack of these local sales tax funds will impact the feasibility of these projects
(c) Denotes projects that are currently operational.
(d) Denotes projects that will not be completed by 2020. These projects are not included in the quantitative analysis of emissions.

TABLE 5-5
TRANSPORTATION CONTROL MEASURES PROPOSED FOR FURTHER STUDY AND CONTINGENCY MEASURES

TCM	DESIGNATION	PROJECT SPONSOR	PROJECT/PROGRAM DESCRIPTION	PROCESS
Proposed for Further Study				
8	Parking Management	City of Santa Barbara	Residential Parking Program	-
9	Park-n-Ride Lots	City of Carpinteria Caltrans/SBCAG	Park-n-Ride Lot – Rte. 101/Bailard Ave. interchange – Contingent on Bailard Ave. interchange improvements Countywide – SLO and Ventura County	SBCAG OWP SBCAG OWP
15	Extended Vehicle Idling	City of Santa Barbara	City Ordinance restricting extended bus idling in the vicinity of the County Courthouse continues. (scale of applicability too small)	N/A
19	Public Education	APCD SBCAG	On-going efforts On-going efforts	APCD SBCAG
Contingency Measure				
21	Inspection and Maintenance	BAR	Enhanced I/M Program	Pending

TABLE 5-6
TRANSPORTATION CONTROL MEASURES PROPOSED FOR REJECTION

TCM	DESIGNATION	PROJECT SPONSOR	PROJECT/PROGRAM DESCRIPTION	REASON
5	Public Transportation	SBCAG	Enhanced Commuter Rail Service – North to South County	North County rail stations too distant from population centers; projected low ridership
14	Activity Centers	Local Agencies/ SBCAG	Indirect Source Review/ Land Use Measures	Insufficient support from local agencies at this time.

TABLE 5-7
2007 PLAN ON-ROAD MOBILE SOURCE ACTIVITY MODELING ASSUMPTIONS

MODELING ASSUMPTIONS	2007 PLAN ASSUMPTIONS
Socio-economic growth assumptions	2002 Regional Growth Forecast (SBCAG)
Vehicle Activity Levels (trips, VMT)(LDA, LDT, MDT, MCY)	SBCAG Travel Model (2000, 2010, 2020)
Vehicle Activity Levels (trips, VMT) (UB, SBUS)	EMFAC2007 v 2.3 (ARB) ARB Default Activity (2002, 2010, 2015, 2020)
VMT by Speed Class Distributions (LDA, LDT, MDT, HDDT, HDGT, SBUS, MCY)	SBCAG Travel Model (2000, 2010, 2020)
VMT by Speed Class Distributions (UB)	EMFAC2007 v 2.3 (ARB) ARB Default Activity (2002, 2010, 2015, 2020)
Transportation Model Networks	SBCAG Travel Model (2000, 2010, 2020)
Infrastructure Improvements & Schedules	2006 FTIP Programmed Projects
Emission Model	EMFAC2007 v 2.3 (ARB)
Vehicle Type/Technology & Demographic Distributions	EMFAC2007 v 2.3 (ARB)
Vehicle Population	Adjusted by SBCAG
Vehicle Starts	Adjusted by SBCAG - Travel Model vehicle trip output and 7G trip start to trip end factors
HDDT & HDGT Activity	EMFAC2007 v 2.3 (ARB)

TABLE 5-8
REGIONALLY SIGNIFICANT PROGRAMMED PROJECTS

State Highways
Rt.135/UVP - Const. at-grade intersection
Rt.101/Hollister - Relocate interchange to join C. Oaks Extension.
Rt.101 SM Way-SLO County line - Widen to 6-lane (currently under construction)
Rt.154, SB to Lake Cachuma, Group II Operational Improvements
101/Milpas Interchange reconstruction, const. Cacique under-crossing
Rt.101 (Rt.144 to Hot Springs SB) - Add auxiliary. lane
Rt.101 (Hot Springs - Milpas NB) - Add 3rd lane
Rt.101 Hot Springs/Cabrillo - Improve interchange
~~Rt.101 (Evans - Sheffield NB) - Add auxiliary lane, const. C1 bikeway~~
Rt.101/Linden & C Pass – Reconstruction I/C + Via Real between ICs & extension to Creek.
Via Real - Const. frontage road between ICs (part of I/C project)
Rt.101/Carrillo Blvd - Widen NB ramp to 2-ln, Ramp metering. No aux
Rt.101/UVP - Const. full diamond interchange
~~Rt.101/Storke - Improve I/C w/ 2 LT, 1 RT & one auxiliary lane~~
City of Carpinteria
Via Real Extension across Carp. Creek (part of I/C project)
County of Santa Barbara - South County
Evans Ave/Ortega Hill Rd - Improve intersection, widen 101 NB ramp
El Colegio (Camino Corto to UCSB West gate) - Widen to 4-lane
Lillie Ave./Evans Rd. Intersection - intersection improvement
S. Fairview, Const cap modification, landscape, bike lane ~~(in Plnd list)~~
City of Goleta
Hollister at Patterson Ave - Add exclusive RT on Hollister WB appr.
~~Calle Real (Patterson to Kellogg) - Widen to 4 lane (completed)~~
Fowler Rd Ext. - Const. road ext & I/S at Kellogg w/roundabout @ Pine
Ekwill Rd Ext. - Const. road ext & I/S at Kellogg w/roundabout @ Fairview
Fairview/Calle Real - Add NB LT on Fairview & EB LT on Calle Real
~~Hollister/Storke - Widen I/S dual LT all app, excl. RT & 3rd thru.~~
Hollister/L. Carneros - Add NB LT on L. Carneros, LT on WB Hollister
~~Calle Real (Fairview to Valdez) - Updated link from 2-4 lanes to reflect existing network.~~
North County
Hummel Drive Extension, connect UVP & Hobbs Ln
City of Santa Barbara
Las Positas Road/Cliff Drive Intersection Improvement
City of Santa Maria
~~College Dr Ext (between Battles and Betteravia)~~
UVP - Const. E/W 2-ln arterial from Hummel Dr to Blosser Road
Blosser Rd (Cook to north city limit) - Widen to 4-lane
Miller St. (Stowell - Cook St.) - Widen to 4-lane
Miller St. (Chapel to Alvin Ave.) - Widen to 4-lane
~~Betteravia / Bradley - Add Dual Left Turn Lanes~~
Betteravia (101-135) widen to 6 lanes, signalize (2007)

TABLE 5-9
2007 PLAN ACTIVITY INDICATORS

INDICATOR	UNITS	2002*	2010	2015	2020
Population	Residents	414,000	462,000	488,000	505,000
Housing	Households	140,638	154,053	160,724	164,641
Employment	Workers	178,146	200,587	212,560	221,655

* Interpolated from the 2000 data and 2005 forecasts.
Source: SBCAG 2002 Regional Growth Forecast.

TABLE 5-10
PRELIMINARY VEHICLE ACTIVITY FORECASTS

ACTIVITY	2002	2010	2015	2020
VMT	9,952,000	12,064,000	13,107,500	14,151,000
Trip Ends	1,317,500	1,499,500	1,577,750	1,656,000

TABLE 5-11A
ARB/SBCAG ON-ROAD ACTIVITY DATA (2002 & 2010)

Year: 2002

	Vehicles	VMT	Trip Ends	7G Adj	Trip Starts
LDA-TOT	148,033	5,034,116	669,387	1.668	1,116,537
LDT1-TOT	58,594	2,106,271	264,667	1.766	467,402
LDT2-TOT	49,435	1,825,830	226,996	1.766	400,874
MDV-TOT	13,542	599,394	62,959	1.630	102,624
LHDT1-TOT	1,496	58,261	34,272	1.630	55,863
LHDT2-TOT	2,589	97,759	51,025	1.630	83,171
MHDT-TOT	2,807	150,000	97,628	1.000	97,628
HHDT-TOT	915	131,000	21,423	1.000	21,423
OBUS-TOT	185	10,000	7,268	1.000	7,268
SBUS-TOT	506	23,000	2,024	1.000	2,024
UB-TOT	127	17,000	508	1.000	508
MH-TOT	3,843	45,000	384	1.000	384
MCY-TOT	7,457	57,273	10,846	1.000	10,846
TOTAL	**289,530**	**10,154,903**	**1,449,387**		**2,366,552**

2002 VMT by Speed Class Distribution (LDA, LDT1, LDT2, MDT, MCY, LHDT1, LHDT2, MHDT, HHDT, OBUS, SBUS, MH) - SBCAG Model

							% of VMT @					
Time Period	**0-5 mph**	**5-10 mph**	**10-15 mph**	**15-20 mph**	**20-25 mph**	**25-30 mph**	**30-35 mph**	**35-40 mph**	**40-45 mph**	**45-50 mph**	**50-55 mph**	**55-60 mph**	**60-65 mph**
12-6 AM	0.0348	0.071	0.2136	0.4404	0.6574	1.7323	8.791	6.1431	16.1034	16.0525	19.6667	10.8424	19.2513
7-8 AM	0.0525	0.2546	0.1678	0.1664	0.5752	2.0393	8.1439	5.1532	14.4879	11.4758	19.1239	10.6352	27.7242
9 AM-3 PM	0.0348	0.071	0.2136	0.4404	0.6574	1.7323	8.791	6.1431	16.1034	16.0525	19.6667	10.8424	19.2513
4-5 PM	0.103	0.2275	0.147	0.2102	0.9537	2.9172	10.9662	7.6496	15.4302	14.2538	20.5679	8.968	17.6056
6-11 PM	0.0348	0.071	0.2136	0.4404	0.6574	1.7323	8.791	6.1431	16.1034	16.0525	19.6667	10.8424	19.2513

2002 VMT by Speed Class Distribution (UB) - ARB Default

Year: 2010

	Vehicles	VMT	Trip Ends	7G Adj	Trip Starts
LDA-TOT	171,965	5,912,699	695,455	1.668	1,160,019
LDT1-TOT	60,228	2,039,035	238,895	1.766	421,888
LDT2-TOT	70,909	2,547,535	288,722	1.766	509,883
MDV-TOT	26,042	1,035,125	107,184	1.630	174,709
LHDT1-TOT	5,245	240,657	94,458	1.630	153,966
LHDT2-TOT	3,420	136,943	55,371	1.630	90,254
MHDT-TOT	3,814	226,000	124,417	1.000	124,417
HHDT-TOT	1,028	151,000	16,194	1.000	16,194
OBUS-TOT	271	15,000	10,082	1.000	10,082
SBUS-TOT	586	27,000	2,342	1.000	2,342
UB-TOT	201	28,000	805	1.000	805
MH-TOT	4,034	48,000	404	1.000	404
MCY-TOT	13,017	121,839	16,896	1.000	16,896
TOTAL	**360,759**	**12,528,832**	**1,651,223**		**2,681,859**

2010 VMT by Speed Class Distribution (LDA, LDT1, LDT2, MDT, MCY, LHDT1, LHDT2, MHDT, HHDT, OBUS, SBUS, MH) - SBCAG Model

							% of VMT @					
Time Period	**0-5 mph**	**5-10 mph**	**10-15 mph**	**15-20 mph**	**20-25 mph**	**25-30 mph**	**30-35 mph**	**35-40 mph**	**40-45 mph**	**45-50 mph**	**50-55 mph**	**55-60 mph**	**60-65 mph**
12-5 AM	0.0244%	0.1461%	0.1840%	0.2908%	0.4953%	8.6900%	5.4091%	9.0768%	12.7835%	15.5105%	18.0550%	8.9182%	20.4163%
6-8 AM	0.0410%	0.2377%	0.1160%	0.1558%	0.7796%	7.4607%	3.2544%	5.6791%	21.5346%	12.0174%	15.7282%	11.1647%	21.8308%
9 AM-3 PM	0.0244%	0.1461%	0.1840%	0.2908%	0.4953%	8.6900%	5.4091%	9.0768%	12.7835%	15.5105%	18.0550%	8.9182%	20.4163%
4-6 PM	0.1020%	0.2228%	0.4439%	0.8111%	1.8666%	9.6737%	5.1798%	16.7195%	15.2458%	14.2572%	12.7329%	8.9525%	13.7921%
6-11 PM	0.0244%	0.1461%	0.1840%	0.2908%	0.4953%	8.6900%	5.4091%	9.0768%	12.7835%	15.5105%	18.0550%	8.9182%	20.4163%

2010 VMT by Speed Class Distribution (UB) - ARB Default

TABLE 5-11B
ARB/SBCAG ON-ROAD ACTIVITY DATA (2015 & 2020)

Year: 2015

	Vehicles	VMT	Trip Ends	7G Adj	Trip Starts
LDA-TOT	188,194	6,515,463	735,517	1.668	1,226,842
LDT1-TOT	65,519	2,238,963	249,107	1.766	439,924
LDT2-TOT	77,425	2,730,887	302,180	1.766	533,649
MDV-TOT	28,525	1,069,884	111,929	1.630	182,445
LHDT1-TOT	5,738	240,901	101,158	1.630	164,888
LHDT2-TOT	3,745	149,804	57,527	1.630	93,769
MHDT-TOT	4,168	249,000	133,931	1.000	133,931
HHDT-TOT	1,009	162,000	12,884	1.000	12,884
OBUS-TOT	296	17,000	10,497	1.000	10,497
SBUS-TOT	632	29,000	2,528	1.000	2,528
UB-TOT	217	30,000	869	1.000	869
MH-TOT	4,355	53,000	436	1.000	436
MCY-TOT	14,228	131,585	17,847	1.000	17,847
TOTAL	**394,052**	**13,617,487**	**1,736,411**		**2,820,509**

2015 VMT by Speed Class Distribution (LDA, LDT1, LDT2, MDT, MCY, LHDT1, LHDT2, MHDT, HHDT, OBUS, SBUS, MH) - SBCAG Model

						% of VMT @						
Time Period	**0-5 mph**	**5-10 mph**	**10-15 mph**	**15-20 mph**	**20-25 mph**	**25-30 mph**	**30-35 mph**	**35-40 mph**	**40-45 mph**	**45-50 mph**	**50-55 mph**	**55-60 mph**	**60-65 mph**
12-5 AM	0.0078%	0.0621%	0.2271%	0.3818%	1.0789%	9.4300%	6.1113%	7.9800%	16.9666%	16.6839%	16.0880%	8.1151%	16.8674%
6-9 AM	0.1114%	0.1969%	0.7426%	0.2343%	2.4464%	11.0449%	3.4181%	11.8049%	14.8753%	11.8295%	14.6060%	13.0401%	15.6496%
10 AM-3 PM	0.0078%	0.0621%	0.2271%	0.3818%	1.0789%	9.4300%	6.1113%	7.9800%	16.9666%	16.6839%	16.0880%	8.1151%	16.8674%
4-7 PM	0.2011%	0.8765%	0.6149%	0.5897%	3.2135%	11.3390%	7.4933%	14.1486%	16.0015%	12.2517%	13.7141%	9.3912%	10.1648%
8-11 PM	0.0078%	0.0621%	0.2271%	0.3818%	1.0789%	9.4300%	6.1113%	7.9800%	16.9666%	16.6839%	16.0880%	8.1151%	16.8674%

2015 VMT by Speed Class Distribution (UB) - ARB Default

Year: 2020

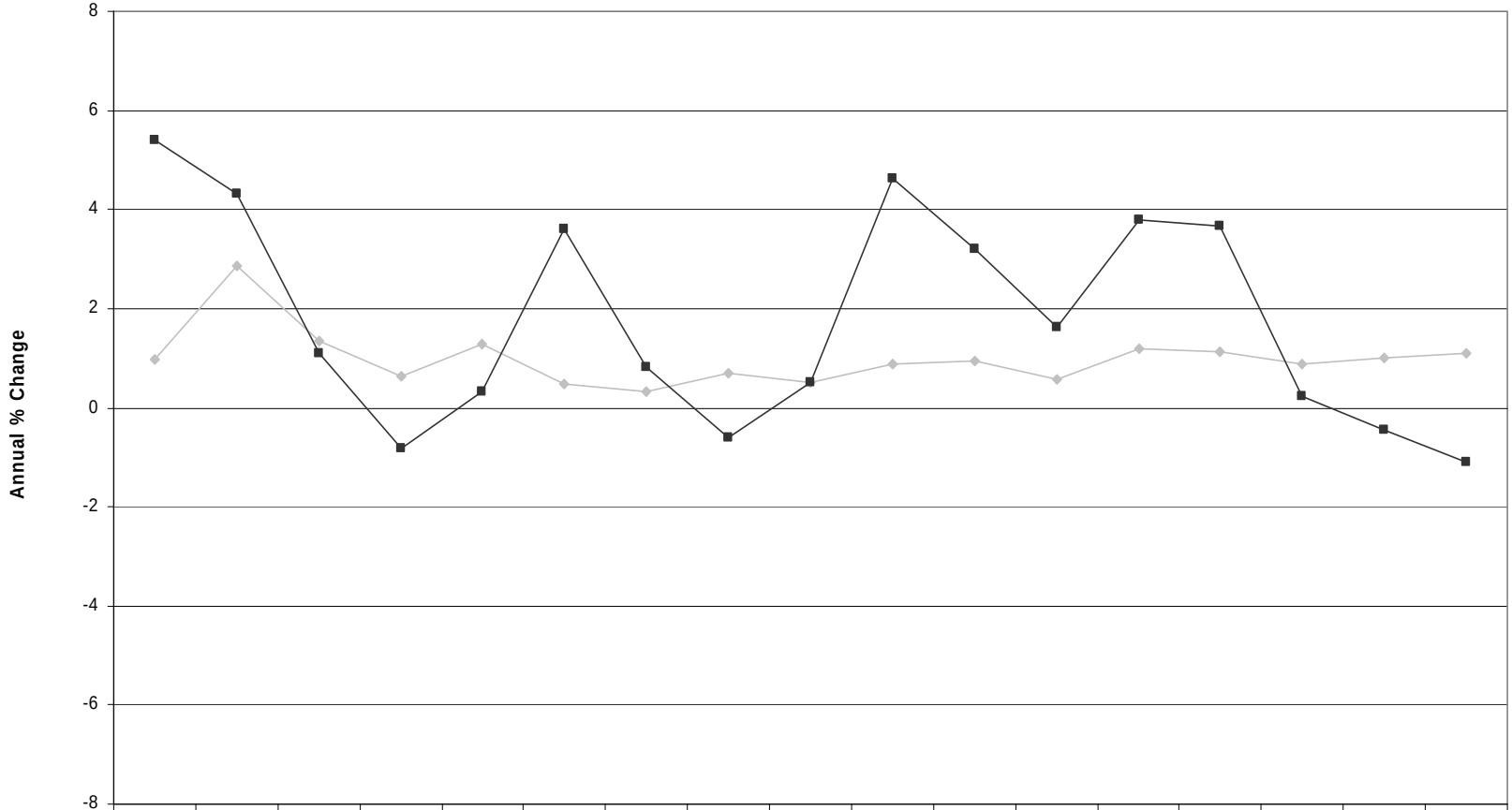
	Vehicles	VMT	Trip Ends	7G Adj	Trip Starts
LDA-TOT	203,704	7,029,374	773,324	1.668	1,289,904
LDT1-TOT	70,496	2,458,520	261,039	1.766	460,994
LDT2-TOT	83,617	2,933,518	315,393	1.766	556,983
MDV-TOT	30,902	1,146,236	116,892	1.63	190,534
LHDT1-TOT	6,207	249,575	107,706	1.63	175,561
LHDT2-TOT	4,058	162,023	60,333	1.63	98,344
MHDT-TOT	4,555	270,000	145,221	1	145,221
HHDT-TOT	991	168,000	10,377	1	10,377
OBUS-TOT	323	19,000	10,992	1	10,992
SBUS-TOT	682	32,000	2,729	1	2,729
UB-TOT	235	32,000	938	1	938
MH-TOT	4,702	59,000	470	1	470
MCY-TOT	15,383	141,896	18,786	1	18,786
TOTAL	**425,855**	**14,701,142**	**1,824,199**		**2,961,833**

2020 VMT by Speed Class Distribution (LDA, LDT1, LDT2, MDT, MCY, LHDT1, LHDT2, MHDT, HHDT, OBUS, SBUS, MH) - SBCAG Model

						% of VMT @						
Time Period	**0-5 mph**	**5-10 mph**	**10-15 mph**	**15-20 mph**	**20-25 mph**	**25-30 mph**	**30-35 mph**	**35-40 mph**	**40-45 mph**	**45-50 mph**	**50-55 mph**	**55-60 mph**	**60-65 mph**
12-5 AM	0.0078%	0.0621%	0.2271%	0.3818%	1.0789%	9.4300%	6.1113%	7.9800%	16.9666%	16.6839%	16.0880%	8.1151%	16.8674%
6-9 AM	0.1114%	0.1969%	0.7426%	0.2343%	2.4464%	11.0449%	3.4181%	11.8049%	14.8753%	11.8295%	14.6060%	13.0401%	15.6496%
10 AM-3 PM	0.0078%	0.0621%	0.2271%	0.3818%	1.0789%	9.4300%	6.1113%	7.9800%	16.9666%	16.6839%	16.0880%	8.1151%	16.8674%
4-7 PM	0.2011%	0.8765%	0.6149%	0.5897%	3.2135%	11.3390%	7.4933%	14.1486%	16.0015%	12.2517%	13.7141%	9.3912%	10.1648%
8-11 PM	0.0078%	0.0621%	0.2271%	0.3818%	1.0789%	9.4300%	6.1113%	7.9800%	16.9666%	16.6839%	16.0880%	8.1151%	16.8674%

2020 VMT by Speed Class Distribution (UB) - ARB Default

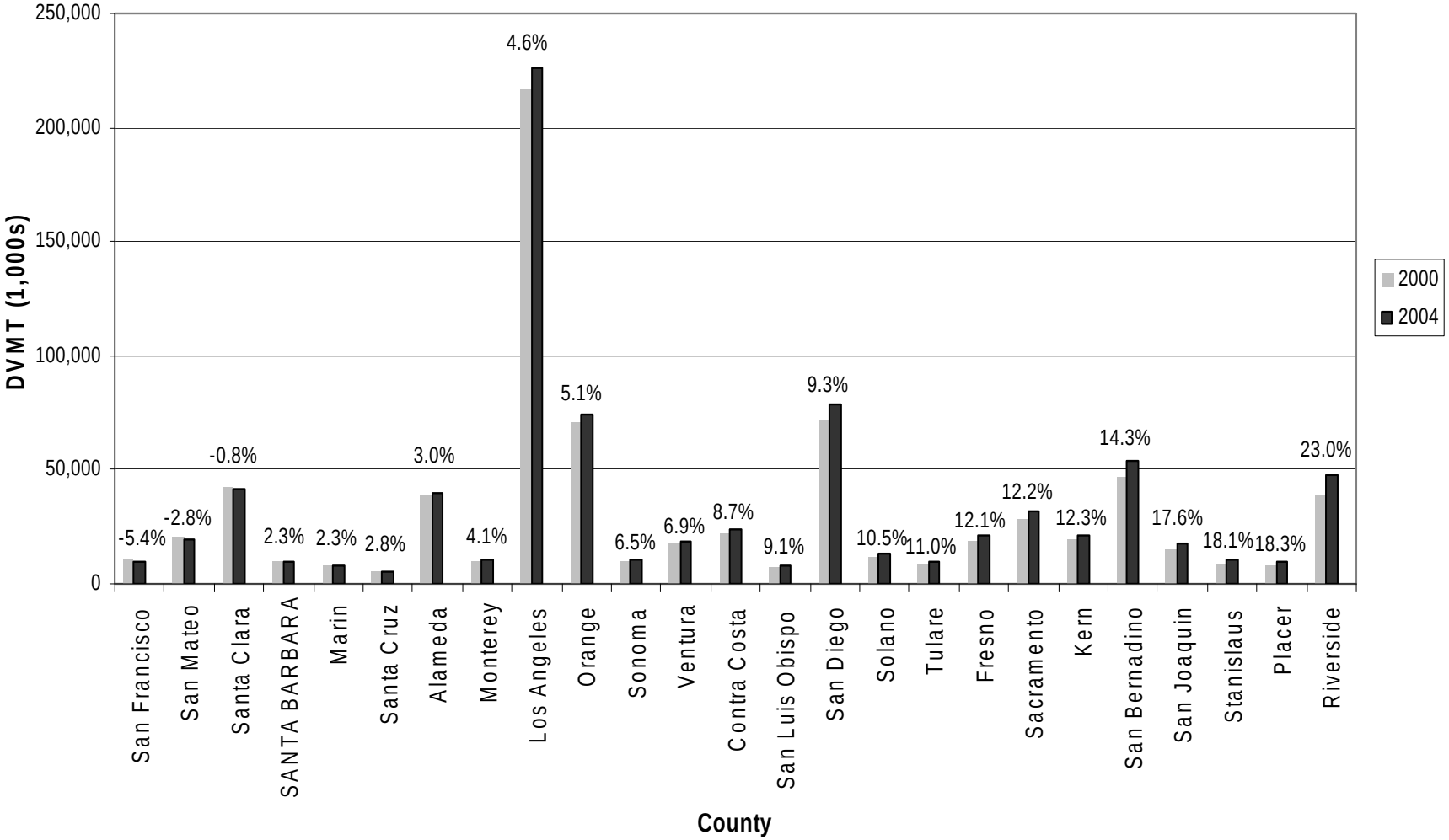
FIGURE 5-1
HISTORICAL POPULATION GROWTH RATE VS. DAILY VEHICLE MILES TRAVELED (DVMT) GROWTH RATE (1988-2004)



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Population	0.97	2.85	1.35	0.62	1.29	0.48	0.32	0.71	0.50	0.88	0.93	0.56	1.19	1.13	0.87	1.01	1.1
DVMT	5.40	4.31	1.11	-0.82	0.32	3.59	0.81	-0.61	0.50	4.63	3.21	1.61	3.80	3.66	0.22	-0.44	-1.11

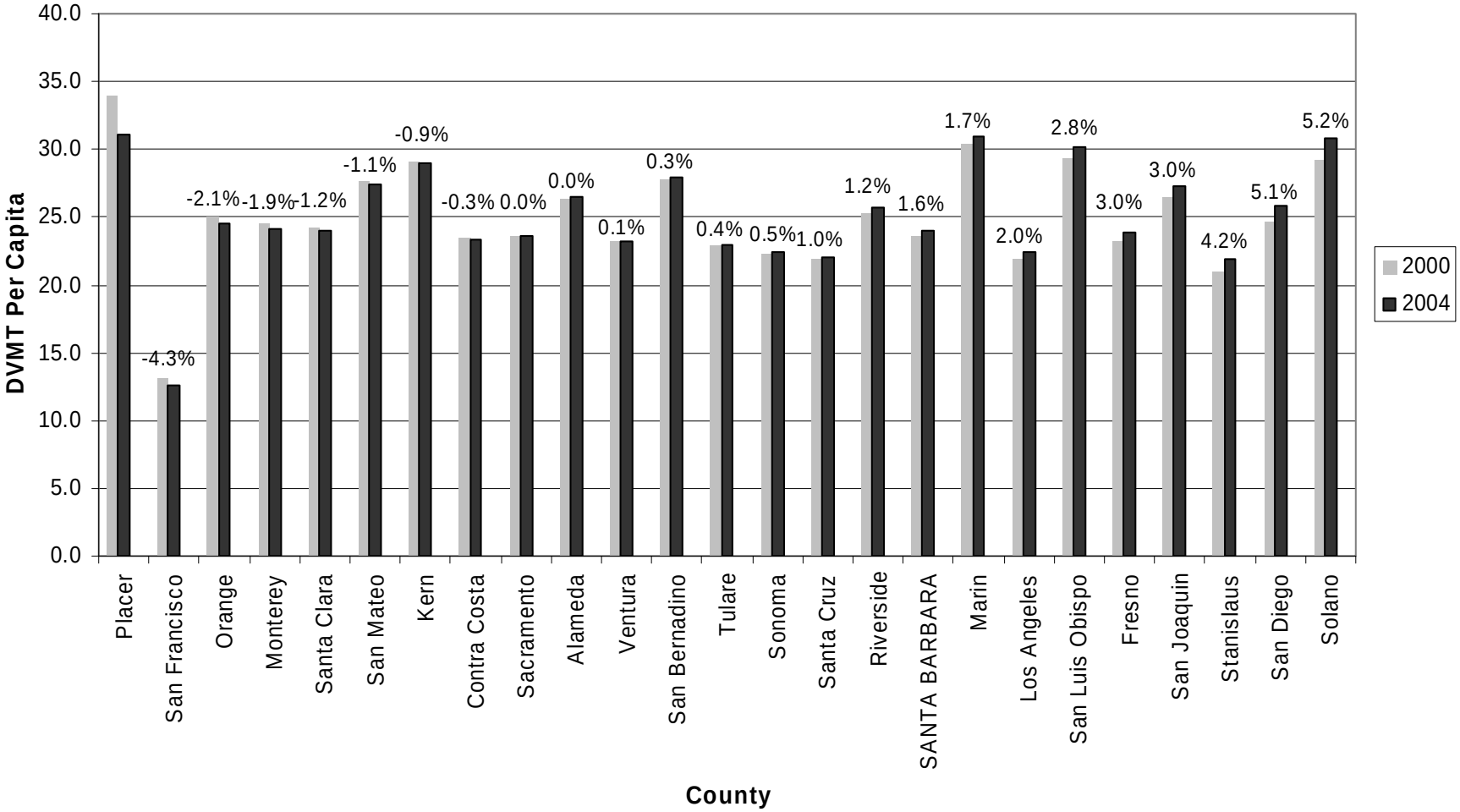
Population Source: Department of Finance
VMT Source: Caltrans HPMS/MVSTAFF Reports

FIGURE 5-2
COUNTYWIDE VMT AND VMT GROWTH FROM 2000 TO 2004 FOR CALIFORNIA COUNTIES WITH POPULATIONS GREATER THAN 250,000



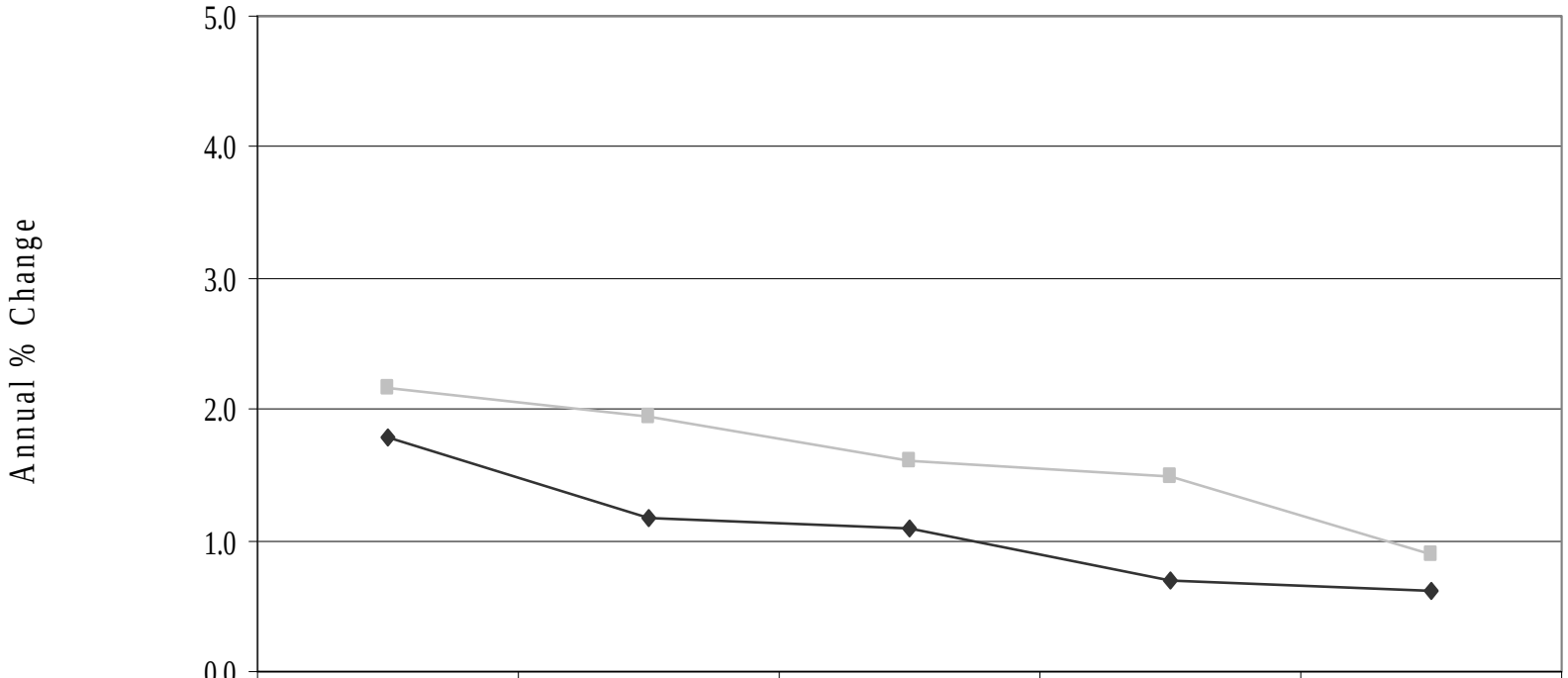
Population Source: Department of Finance
VMT Source: Caltrans HPMS Reports 2001-2005

FIGURE 5-3
COUNTYWIDE DVMT PER CAPITA AND GROWTH RATES FROM 2000 TO 2004 FOR CALIFORNIA COUNTIES WITH POPULATIONS GREATER THAN 250,000



Population Source: Department of Finance
VMT Source: Caltrans HPMS Reports 2001-2005

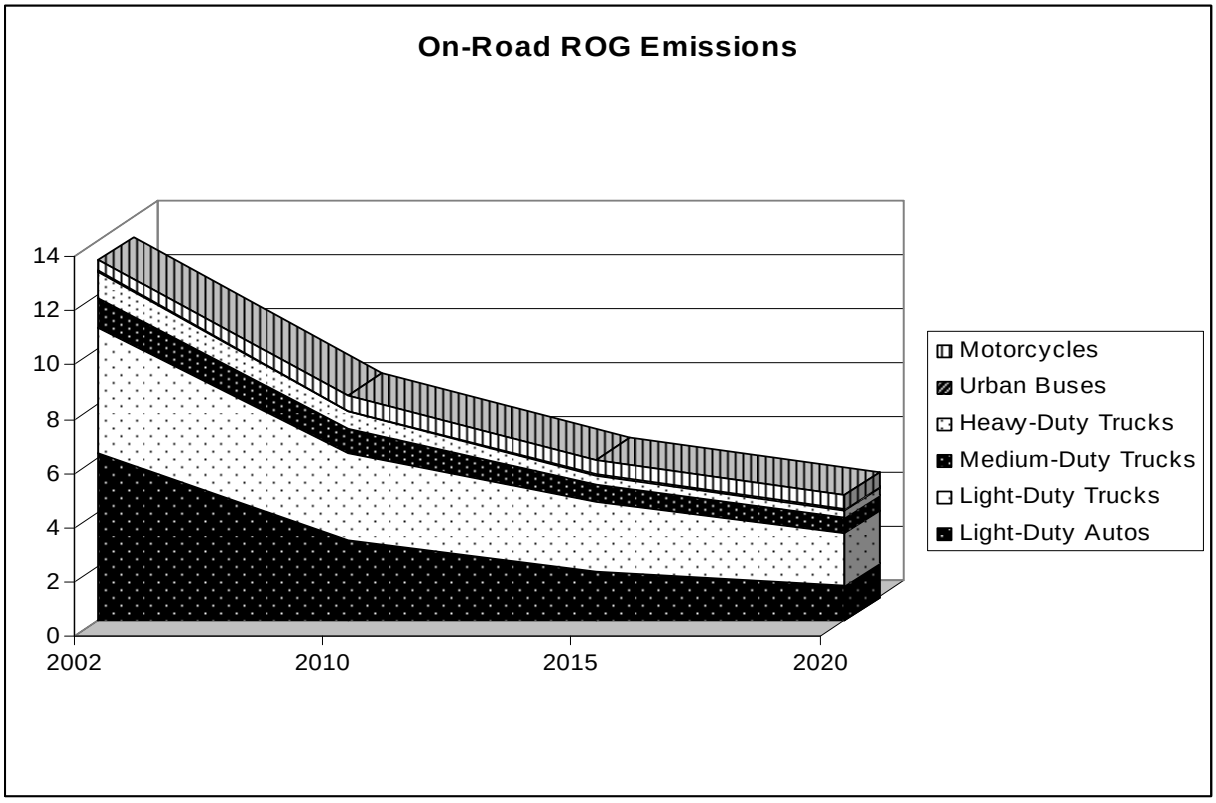
FIGURE 5-4
POPULATION GROWTH RATE VS. DAILY VMT AND TRIP ENDS GROWTH RATES (5-YEAR AVERAGE ANNUAL CHANGE) SANTA BARBARA COUNTY (2005-2020)

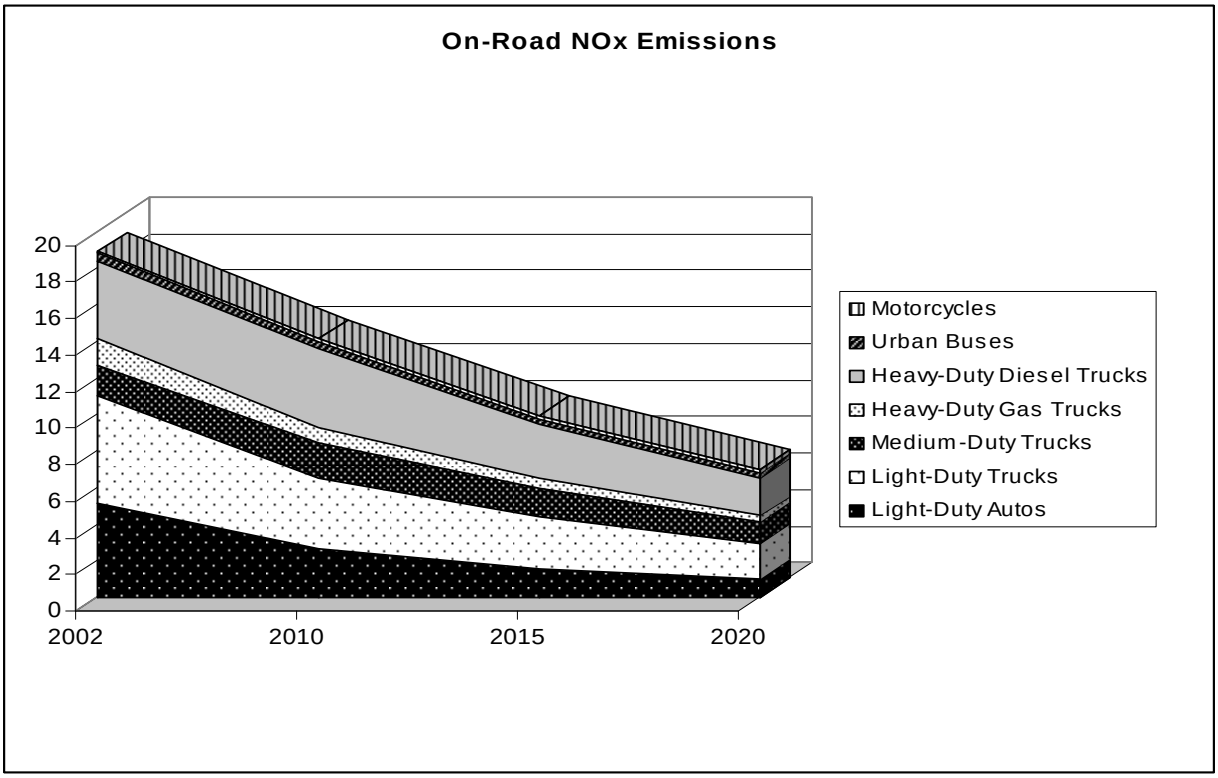


	2005	2010	2015	2020	2030
Population	1.79	1.17	1.10	0.69	0.61
DVMT	2.16	1.95	1.60	1.48	0.9

Year

FIGURE 5-5
ON-ROAD MOBILE SOURCE EMISSION RESULTS





Title : 2007 Plan - Summer 2002 Emissions
Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
Run Date : 2007/01/17 14:00:45
Scen Year: 2002 -- All model years in the range 1965 to 2002 selected
Season : Summer
Area : Santa Barbara (SCC)
I/M Stat : Enhanced Basic (1998)
Emissions: Tons Per Day

	Light Duty Passenger Cars				Light Duty Trucks				Medium Duty Trucks				Heavy Duty Trucks: Gasoline Trucks			Heavy Duty Trucks: Diesel Trucks	Heavy Duty Trucks: Total HD Trucks	Urban Buses	Motor-cycles	All Vehicles
	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Total					
Vehicles	7181.	139704.	1147.	148033.	4789.	100882.	2357.	108029.	489.	16180.	958.	17627.	1058.	4267.	5324.	2931.	8256.	127.	7457.	289529.
VMT/1000	135.	4870.	30.	5034.	127.	3716.	89.	3932.	12.	704.	39.	755.	12.	124.	135.	223.	359.	17.	58.	10154.
Trips	38492.	1069890.	8157.	1116540.	28022.	821119.	19135.	868276.	10595.	217442.	13621.	241658.	17968.	55981.	73949.	54777.	128726.	508.	10846.	2366550.
Reactive Organic Gas Emissions																				
Run Exh	0.66	1.01	0.01	1.68	0.62	0.90	0.01	1.53	0.08	0.33	0.01	0.42	0.08	0.25	0.33	0.18	0.51	0.04	0.23	4.39
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.03
Start Ex	0.19	1.32	0.00	1.50	0.13	1.01	0.00	1.14	0.06	0.26	0.00	0.32	0.19	0.14	0.33	0.00	0.33	0.00	0.03	3.32
Total Ex	0.85	2.32	0.01	3.18	0.75	1.91	0.01	2.67	0.14	0.59	0.01	0.74	0.27	0.39	0.66	0.19	0.86	0.04	0.26	7.74
Diurnal	0.05	0.23	0.00	0.28	0.03	0.15	0.00	0.19	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.51
Hot Soak	0.12	0.32	0.00	0.43	0.08	0.22	0.00	0.30	0.01	0.03	0.00	0.04	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.80
Running	0.74	1.32	0.00	2.06	0.35	1.03	0.00	1.38	0.05	0.21	0.00	0.26	0.09	0.05	0.14	0.00	0.14	0.00	0.09	3.92
Resting	0.04	0.13	0.00	0.17	0.03	0.09	0.00	0.11	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.30
Total	1.79	4.31	0.01	6.11	1.24	3.40	0.01	4.64	0.21	0.85	0.01	1.07	0.37	0.45	0.82	0.19	1.01	0.04	0.40	13.28
Carbon Monoxide Emissions																				
Run Exh	9.73	27.35	0.02	37.10	9.09	29.44	0.05	38.58	1.64	5.59	0.05	7.28	2.18	4.41	6.59	0.97	7.57	0.21	3.29	94.03
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.02	0.02	0.05	0.07	0.00	0.00	0.10
Start Ex	1.23	13.08	0.00	14.31	0.90	11.54	0.00	12.45	0.52	3.13	0.00	3.64	1.94	2.11	4.05	0.00	4.05	0.01	0.11	34.56
Total Ex	10.96	40.43	0.02	51.41	10.00	40.99	0.05	51.03	2.16	8.74	0.05	10.95	4.13	6.53	10.66	1.02	11.69	0.22	3.40	128.69
Oxides of Nitrogen Emissions																				
Run Exh	0.74	3.44	0.05	4.23	0.68	4.26	0.15	5.08	0.07	0.92	0.27	1.26	0.07	1.01	1.08	4.18	5.26	0.38	0.09	16.30
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.12	0.00	0.00	0.13
Start Ex	0.06	0.80	0.00	0.85	0.04	0.81	0.00	0.86	0.01	0.37	0.00	0.38	0.03	0.30	0.33	0.00	0.33	0.00	0.00	2.42
Total Ex	0.79	4.24	0.05	5.08	0.72	5.07	0.15	5.94	0.08	1.28	0.27	1.64	0.10	1.31	1.41	4.31	5.72	0.38	0.09	18.84
Carbon Dioxide Emissions (000)																				
Run Exh	0.07	1.84	0.01	1.92	0.06	1.67	0.03	1.76	0.01	0.49	0.02	0.52	0.01	0.09	0.10	0.39	0.48	0.04	0.01	4.74
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01
Start Ex	0.01	0.09	0.00	0.10	0.01	0.08	0.00	0.09	0.00	0.02	0.00	0.02	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.21
Total Ex	0.07	1.93	0.01	2.02	0.07	1.75	0.03	1.85	0.01	0.51	0.02	0.55	0.01	0.09	0.10	0.40	0.50	0.04	0.01	4.97
PM10 Emissions																				
Run Exh	0.00	0.05	0.00	0.05	0.00	0.05	0.01	0.06	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.16	0.16	0.01	0.00	0.30
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Ex	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Total Ex	0.00	0.05	0.00	0.06	0.00	0.06	0.01	0.07	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.16	0.16	0.01	0.00	0.32
TireWear	0.00	0.04	0.00	0.04	0.00	0.03	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.09
BrakeWr	0.00	0.07	0.00	0.07	0.00	0.05	0.00	0.05	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.14
Total	0.01	0.16	0.01	0.18	0.01	0.14	0.01	0.16	0.00	0.03	0.01	0.04	0.00	0.01	0.01	0.17	0.17	0.01	0.00	0.56
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	0.00	0.03	0.00	0.03	0.00	0.03	0.00	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.04	0.04	0.00	0.00	0.11
Fuel Consumption (000 gallons)																				
Gasoline	9.65	205.01	0.00	214.66	8.81	186.30	0.00	195.11	1.65	53.94	0.00	55.59	2.07	10.44	12.51	0.00	12.51	0.30	1.34	479.50
Diesel	0.00	0.00	1.08	1.08	0.00	0.00	3.10	3.10	0.00	0.00	2.08	2.08	0.00	0.00	0.00	35.71	35.71	3.78	0.00	45.76

Title : 2007 Plan - Summer 2010 Emissions
Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
Run Date : 2007/01/17 14:18:00
Scen Year: 2010 -- All model years in the range 1966 to 2010 selected
Season : Summer
Area : Santa Barbara (SCC)
I/M Stat : Enhanced Basic (2005)
Emissions: Tons Per Day

	Light Duty Passenger Cars				Light Duty Trucks				Medium Duty Trucks				Heavy Duty Trucks						
	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Gasoline Trucks Non-cat	Gasoline Trucks Cat	Gasoline Trucks Total	Diesel Trucks	Total HD Trucks	Urban Buses	Motor-cycles	All Vehicles
Vehicles	2577.	168709.	679.	171965.	2019.	126896.	2222.	131137.	208.	31689.	2811.	34707.	385.	4741.	5125.	4607.	9733.	201.	13017.	360760.
VMT/1000	44.	5853.	16.	5913.	51.	4464.	72.	4587.	5.	1285.	123.	1412.	4.	111.	115.	352.	467.	28.	122.	12529.
Trips	11050.	1144930.	4038.	1160020.	9381.	906849.	15541.	931771.	2843.	379311.	36776.	418929.	6664.	57961.	64625.	88815.	153440.	805.	16896.	2681860.
Reactive Organic Gas Emissions																				
Run Exh	0.23	0.48	0.00	0.71	0.27	0.60	0.01	0.88	0.03	0.21	0.03	0.27	0.03	0.14	0.17	0.20	0.37	0.04	0.40	2.66
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.03
Start Ex	0.06	0.68	0.00	0.74	0.05	0.66	0.00	0.71	0.02	0.23	0.00	0.25	0.06	0.11	0.18	0.00	0.18	0.00	0.04	1.91
Total Ex	0.29	1.16	0.00	1.45	0.32	1.26	0.01	1.59	0.05	0.44	0.03	0.52	0.09	0.26	0.35	0.22	0.57	0.04	0.44	4.60
Diurnal	0.02	0.19	0.00	0.21	0.02	0.16	0.00	0.18	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.44
Hot Soak	0.03	0.24	0.00	0.28	0.03	0.22	0.00	0.25	0.00	0.03	0.00	0.04	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.57
Running	0.21	0.64	0.00	0.84	0.10	1.00	0.00	1.10	0.01	0.24	0.00	0.26	0.03	0.04	0.07	0.00	0.07	0.00	0.04	2.32
Resting	0.02	0.13	0.00	0.15	0.01	0.12	0.00	0.13	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.31
Total	0.57	2.35	0.00	2.92	0.48	2.76	0.01	3.24	0.06	0.76	0.03	0.85	0.13	0.31	0.43	0.22	0.65	0.04	0.54	8.24
Carbon Monoxide Emissions																				
Run Exh	3.15	16.06	0.01	19.22	3.68	21.09	0.04	24.80	0.60	4.46	0.15	5.21	0.70	2.43	3.13	1.09	4.22	0.21	4.80	58.45
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.02	0.02	0.07	0.09	0.00	0.00	0.14
Start Ex	0.36	7.28	0.00	7.64	0.31	7.90	0.00	8.21	0.14	2.57	0.00	2.71	0.72	1.66	2.39	0.00	2.39	0.01	0.16	21.12
Total Ex	3.51	23.34	0.01	26.86	3.98	28.99	0.04	33.01	0.73	7.09	0.15	7.97	1.43	4.11	5.54	1.15	6.69	0.22	4.96	79.71
Oxides of Nitrogen Emissions																				
Run Exh	0.23	1.75	0.03	2.01	0.26	2.83	0.12	3.21	0.03	0.75	0.60	1.38	0.02	0.55	0.57	4.12	4.69	0.34	0.17	11.80
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.21	0.21	0.00	0.00	0.22
Start Ex	0.02	0.55	0.00	0.57	0.01	0.68	0.00	0.69	0.00	0.53	0.00	0.53	0.01	0.25	0.26	0.00	0.26	0.00	0.01	2.06
Total Ex	0.25	2.30	0.03	2.58	0.28	3.51	0.12	3.91	0.03	1.28	0.61	1.92	0.03	0.80	0.83	4.33	5.16	0.34	0.18	14.09
Carbon Dioxide Emissions (000)																				
Run Exh	0.02	2.16	0.01	2.19	0.03	2.04	0.03	2.09	0.00	0.92	0.07	0.99	0.00	0.08	0.08	0.63	0.72	0.06	0.02	6.07
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02
Start Ex	0.00	0.09	0.00	0.09	0.00	0.09	0.00	0.09	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
Total Ex	0.02	2.25	0.01	2.28	0.03	2.13	0.03	2.18	0.00	0.95	0.07	1.03	0.00	0.08	0.09	0.64	0.73	0.06	0.02	6.31
PM10 Emissions																				
Run Exh	0.00	0.06	0.00	0.06	0.00	0.08	0.00	0.09	0.00	0.03	0.01	0.03	0.00	0.00	0.00	0.14	0.15	0.01	0.00	0.34
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Ex	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Total Ex	0.00	0.07	0.00	0.07	0.00	0.09	0.00	0.10	0.00	0.03	0.01	0.04	0.00	0.00	0.00	0.15	0.15	0.01	0.00	0.36
TireWear	0.00	0.05	0.00	0.05	0.00	0.04	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.12
BrakeWr	0.00	0.08	0.00	0.08	0.00	0.06	0.00	0.06	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.18
Total	0.00	0.20	0.00	0.20	0.00	0.19	0.01	0.20	0.00	0.06	0.01	0.07	0.00	0.00	0.00	0.16	0.17	0.01	0.01	0.65
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.06
Fuel Consumption (000 gallons)																				
Gasoline	3.12	234.65	0.00	237.77	3.54	222.98	0.00	226.51	0.55	98.91	0.00	99.46	0.71	9.37	10.08	0.00	10.08	0.73	2.85	577.41
Diesel	0.00	0.00	0.59	0.59	0.00	0.00	2.48	2.48	0.00	0.00	6.37	6.37	0.00	0.00	0.00	57.98	57.98	4.88	0.00	72.30

Title : 2007 Plan - Summer 2015 Emissions
Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
Run Date : 2007/01/17 14:26:21
Scen Year: 2015 -- All model years in the range 1971 to 2015 selected
Season : Summer
Area : Santa Barbara (SCC)
I/M Stat : Enhanced Basic (2005)
Emissions: Tons Per Day

	Light Duty Passenger Cars				Light Duty Trucks				Medium Duty Trucks				Heavy Duty Trucks: Gasoline Trucks			Diesel Trucks	Total HD Trucks	Urban Buses	Motor-cycles	All Vehicles
	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Total					
Vehicles	576.	187233.	385.	188194.	733.	140491.	1720.	142944.	94.	34883.	3031.	38008.	125.	5137.	5262.	5199.	10460.	217.	14228.	394052.
VMT/1000	9.	6497.	9.	6515.	18.	4899.	52.	4970.	2.	1336.	123.	1461.	1.	111.	112.	398.	510.	30.	132.	13618.
Trips	2316.	1222400.	2122.	1226840.	3143.	959273.	11157.	973573.	1032.	401594.	38477.	441102.	2372.	56904.	59276.	101000.	160276.	869.	17847.	2820510.
Reactive Organic Gas Emissions																				
Run Exh	0.05	0.30	0.00	0.35	0.10	0.45	0.00	0.55	0.01	0.10	0.02	0.12	0.01	0.06	0.06	0.12	0.18	0.04	0.38	1.62
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.03
Start Ex	0.01	0.40	0.00	0.42	0.02	0.47	0.00	0.48	0.01	0.18	0.00	0.19	0.02	0.09	0.11	0.00	0.11	0.00	0.04	1.24
Total Ex	0.06	0.70	0.00	0.77	0.12	0.92	0.00	1.04	0.02	0.28	0.02	0.32	0.03	0.15	0.18	0.14	0.31	0.04	0.41	2.89
Diurnal	0.00	0.15	0.00	0.15	0.01	0.16	0.00	0.16	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.37
Hot Soak	0.01	0.22	0.00	0.23	0.01	0.24	0.00	0.25	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.53
Running	0.04	0.48	0.00	0.52	0.02	0.94	0.00	0.96	0.00	0.24	0.00	0.25	0.01	0.04	0.04	0.00	0.04	0.00	0.03	1.80
Resting	0.00	0.12	0.00	0.12	0.00	0.13	0.00	0.13	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.29
Total	0.12	1.67	0.00	1.79	0.16	2.37	0.00	2.54	0.02	0.61	0.02	0.64	0.04	0.19	0.23	0.14	0.36	0.04	0.50	5.87
Carbon Monoxide Emissions																				
Run Exh	0.65	11.17	0.01	11.83	1.28	16.71	0.03	18.02	0.23	3.18	0.09	3.50	0.17	1.22	1.39	0.76	2.15	0.16	3.72	39.38
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.06	0.00	0.02	0.02	0.07	0.09	0.00	0.00	0.14
Start Ex	0.07	4.73	0.00	4.81	0.10	5.89	0.00	6.00	0.05	2.01	0.00	2.06	0.22	1.29	1.51	0.00	1.51	0.01	0.18	14.57
Total Ex	0.72	15.91	0.01	16.63	1.39	22.60	0.03	24.02	0.28	5.24	0.09	5.62	0.39	2.53	2.92	0.83	3.75	0.17	3.89	54.09
Oxides of Nitrogen Emissions																				
Run Exh	0.05	1.13	0.01	1.20	0.09	2.12	0.08	2.29	0.01	0.57	0.46	1.05	0.01	0.34	0.34	2.70	3.05	0.31	0.17	8.06
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.24	0.24	0.00	0.00	0.25
Start Ex	0.00	0.36	0.00	0.36	0.00	0.52	0.00	0.53	0.00	0.51	0.00	0.51	0.00	0.20	0.20	0.00	0.20	0.00	0.01	1.61
Total Ex	0.05	1.50	0.01	1.56	0.09	2.64	0.08	2.82	0.01	1.08	0.47	1.56	0.01	0.53	0.54	2.94	3.48	0.31	0.18	9.92
Carbon Dioxide Emissions (000)																				
Run Exh	0.00	2.38	0.00	2.39	0.01	2.25	0.02	2.28	0.00	0.83	0.07	0.90	0.00	0.07	0.07	0.70	0.77	0.06	0.02	6.42
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02
Start Ex	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23
Total Ex	0.01	2.48	0.00	2.49	0.01	2.35	0.02	2.38	0.00	0.87	0.07	0.94	0.00	0.07	0.07	0.72	0.79	0.06	0.02	6.67
PM10 Emissions																				
Run Exh	0.00	0.06	0.00	0.07	0.00	0.10	0.00	0.10	0.00	0.03	0.00	0.03	0.00	0.00	0.00	0.09	0.10	0.01	0.00	0.30
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Ex	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Total Ex	0.00	0.07	0.00	0.07	0.00	0.11	0.00	0.11	0.00	0.03	0.00	0.04	0.00	0.00	0.00	0.10	0.10	0.01	0.00	0.33
TireWear	0.00	0.06	0.00	0.06	0.00	0.04	0.00	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.13
BrakeWr	0.00	0.09	0.00	0.09	0.00	0.07	0.00	0.07	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.19
Total	0.00	0.22	0.00	0.22	0.00	0.22	0.00	0.23	0.00	0.06	0.01	0.07	0.00	0.00	0.00	0.11	0.12	0.01	0.01	0.65
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.06
Fuel Consumption (000 gallons)																				
Gasoline	0.67	256.48	0.00	257.15	1.26	244.11	0.00	245.37	0.20	89.79	0.00	89.99	0.20	7.48	7.68	0.00	7.68	0.87	3.09	604.15
Diesel	0.00	0.00	0.31	0.31	0.00	0.00	1.80	1.80	0.00	0.00	6.38	6.38	0.00	0.00	0.00	64.42	64.42	4.89	0.00	77.82

Title : 2007 Plan - Summer 2020 Emissions
Version : Emfac2007 V2.3 Nov 1 2006 ** WIS Enabled **
Run Date : 2007/01/17 14:33:28
Scen Year: 2020 -- All model years in the range 1976 to 2020 selected
Season : Summer
Area : Santa Barbara (SCC)
I/M Stat : Enhanced Basic (2005)
Emissions: Tons Per Day

	Light Duty Passenger Cars				Light Duty Trucks				Medium Duty Trucks				Heavy Duty Trucks						
	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Non-cat	Cat	Diesel	Total	Gasoline Trucks Non-cat	Gasoline Trucks Cat	Gasoline Trucks Total	Diesel Trucks	Total HD Trucks	Urban Buses	Motor-cycles	All Vehicles
Vehicles	28.	203473.	203.	203704.	61.	152954.	1097.	154113.	25.	37956.	3186.	41167.	10.	5505.	5515.	5738.	11253.	235.	15383.	425854.
VMT/1000	0.	7025.	4.	7030.	2.	5359.	32.	5392.	0.	1432.	125.	1558.	0.	115.	115.	432.	548.	32.	142.	14702.
Trips	108.	1288720.	1075.	1289900.	254.	1011090.	6630.	1017980.	155.	424733.	39550.	464439.	173.	56935.	57107.	112683.	169790.	938.	18786.	2961830.
Reactive Organic Gas Emissions																				
Run Exh	0.00	0.19	0.00	0.19	0.00	0.31	0.00	0.31	0.00	0.09	0.02	0.11	0.00	0.04	0.04	0.12	0.16	0.04	0.39	1.21
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.02	0.02	0.00	0.00	0.03
Start Ex	0.00	0.24	0.00	0.24	0.00	0.31	0.00	0.31	0.00	0.14	0.00	0.14	0.00	0.07	0.07	0.00	0.07	0.00	0.04	0.80
Total Ex	0.00	0.43	0.00	0.44	0.00	0.62	0.00	0.62	0.01	0.23	0.02	0.26	0.00	0.11	0.12	0.13	0.25	0.04	0.42	2.03
Diurnal	0.00	0.12	0.00	0.12	0.00	0.14	0.00	0.14	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.31
Hot Soak	0.00	0.19	0.00	0.19	0.00	0.22	0.00	0.22	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.47
Running	0.00	0.39	0.00	0.39	0.00	0.81	0.00	0.81	0.00	0.23	0.00	0.23	0.00	0.03	0.03	0.00	0.03	0.00	0.02	1.49
Resting	0.00	0.10	0.00	0.10	0.00	0.13	0.00	0.13	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.27
Total	0.00	1.23	0.00	1.24	0.01	1.91	0.00	1.92	0.01	0.55	0.02	0.58	0.00	0.15	0.15	0.13	0.28	0.04	0.51	4.58
Carbon Monoxide Emissions																				
Run Exh	0.02	7.89	0.00	7.91	0.11	12.38	0.02	12.51	0.09	2.73	0.14	2.96	0.02	0.73	0.75	0.80	1.55	0.16	3.49	28.58
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.00	0.02	0.02	0.07	0.09	0.00	0.00	0.15
Start Ex	0.00	3.03	0.00	3.04	0.01	4.08	0.00	4.08	0.01	1.58	0.00	1.59	0.02	0.96	0.98	0.00	0.98	0.01	0.19	9.89
Total Ex	0.02	10.92	0.00	10.95	0.11	16.46	0.02	16.59	0.10	4.37	0.15	4.61	0.03	1.70	1.74	0.87	2.61	0.17	3.68	38.62
Oxides of Nitrogen Emissions																				
Run Exh	0.00	0.77	0.01	0.77	0.01	1.51	0.05	1.56	0.00	0.40	0.32	0.73	0.00	0.17	0.17	1.80	1.97	0.29	0.18	5.51
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.26	0.26	0.00	0.00	0.27
Start Ex	0.00	0.22	0.00	0.22	0.00	0.36	0.00	0.36	0.00	0.47	0.00	0.47	0.00	0.15	0.15	0.00	0.15	0.00	0.01	1.19
Total Ex	0.00	0.98	0.01	0.99	0.01	1.87	0.05	1.92	0.01	0.87	0.33	1.20	0.00	0.32	0.32	2.06	2.38	0.30	0.19	6.98
Carbon Dioxide Emissions (000)																				
Run Exh	0.00	2.55	0.00	2.55	0.00	2.46	0.01	2.47	0.00	1.03	0.07	1.10	0.00	0.09	0.09	0.78	0.86	0.07	0.02	7.08
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.02
Start Ex	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.04	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
Total Ex	0.00	2.65	0.00	2.65	0.00	2.56	0.01	2.57	0.00	1.07	0.07	1.14	0.00	0.09	0.09	0.79	0.88	0.07	0.03	7.34
PM10 Emissions																				
Run Exh	0.00	0.07	0.00	0.07	0.00	0.11	0.00	0.11	0.00	0.04	0.01	0.04	0.00	0.00	0.00	0.08	0.08	0.01	0.00	0.31
Idle Exh	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Ex	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03
Total Ex	0.00	0.08	0.00	0.08	0.00	0.12	0.00	0.12	0.00	0.04	0.01	0.05	0.00	0.00	0.00	0.08	0.09	0.01	0.00	0.34
TireWear	0.00	0.06	0.00	0.06	0.00	0.05	0.00	0.05	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.14
BrakeWr	0.00	0.10	0.00	0.10	0.00	0.07	0.00	0.07	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.21
Total	0.00	0.24	0.00	0.24	0.00	0.24	0.00	0.24	0.00	0.07	0.01	0.08	0.00	0.00	0.00	0.10	0.11	0.01	0.00	0.68
Lead	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SOx	0.00	0.03	0.00	0.03	0.00	0.02	0.00	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.07
Fuel Consumption (000 gallons)																				
Gasoline	0.03	273.36	0.00	273.39	0.10	264.76	0.00	264.87	0.06	110.08	0.00	110.14	0.02	9.38	9.39	0.00	9.39	0.99	3.36	662.14
Diesel	0.00	0.00	0.15	0.15	0.00	0.00	1.09	1.09	0.00	0.00	6.49	6.49	0.00	0.00	0.00	71.19	71.19	5.05	0.00	83.97