

Climate Change Assessment

GOLDEN STATE CORRIDOR DEVELOPMENT

This section includes a discussion of global climate change, its causes and the contribution of human activities, as well as a summary of existing greenhouse gas emissions. This section also describes the criteria for determining the significance of climate change impacts, and estimates the likely greenhouse gas emissions that would result from vehicular traffic and other emission sources related to the project. Where appropriate, mitigation measures are recommended to reduce project-related impacts.

Environmental Setting

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Global Climate Change (GCC) means a shift in the climate of the earth as a whole that occurs naturally as in the case of the ice age. According to the California Air Resources Board (CARB), the climate change that is occurring today differs from previous climate changes in both time and scale.

Gases that catch heat in the atmosphere are regularly called greenhouse gases (GHGs). The Earth's surface temperature would be about 61 degrees Fahrenheit colder than it is currently if it were not for the innate heat trapping effect of GHGs. The buildup of these gases in the earth's atmosphere is considered the source of the observed increase in the earth's temperature (global warming). Some greenhouse gases such as carbon dioxide occur naturally in nature and are emitted to the atmosphere through natural processes and as well as through some anthropocentric activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities.

Since the Industrial Revolution (circa 1750), global concentrations of carbon dioxide (CO₂) have risen about 36%, chiefly due to the burning of fossil fuels. Questions remain about the amount of warming that will occur, how rapidly it will occur, and how the warming will affect the rest of the climate system, including weather events.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Panel concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) CO₂ equivalent concentration is required to keep global mean warming below 3.6° Fahrenheit (2° Celsius). This is presumed necessary to avoid dangerous climate change (Association of Environmental Professionals, 2007).

State law defines greenhouse gases as any of the following compounds: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆) (California Health and Safety Code Section 38505(g).) CO₂, followed by CH₄ and N₂O, are the most common GHGs that result from human activity. The characteristics of state defined GHGs are described below:

- ◆ **Carbon dioxide** – CO₂ results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, CO₂ accounted for approximately 84 percent of total GHG emissions in the State (CEC, 2006);
- ◆ **Methane** – CH₄ can also be divided into anthropogenic (i.e., resulting from human activities and/or processes) and natural sources. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites

and geological sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions; and

- ◆ **Other regulated GHGs include Nitrous Oxide (N₂O), Sulfur Hexafluoride (SF₆), Hydrofluorocarbons (HFC), and Perfluorocarbons (PFC)** - These gases all possess heat-trapping characteristics that are greater than CO₂. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, waste water treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net effect of nitrous oxide emissions relative to CO₂ or CH₄ is relatively small. SF₆, HFC, and PFC emissions occur at even lower rates.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO₂, methane, and N₂O, some gases, like HFCs, PFCs, and SF₆ are completely new to the atmosphere.

Certain other gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change over the long-term. Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36° Fahrenheit) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial ice loss in the Arctic.

However, the understanding of GHG emissions, particulate matter, and aerosols on global climate trends remains uncertain. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the International Panel on Climate Change (IPCC), namely "Climate Change 2001, The Scientific Basis"(2001).

Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. GHGs have the potential to affect the environment because such emissions are believed to contribute cumulatively to global climate change. Although GHG emissions from one single project will not by themselves cause global climate change, it is thought that GHG emissions from multiple projects, past, present and future throughout the world may collectively result in a cumulative impact with respect to global climate change. It is speculated that global climate change could contribute to rising sea levels, which can inundate low-lying areas; impact rainfall and snowfall, which could change water supply; affect habitat, which could affect biological resources, along with other unknown effects.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change. In addition, alternative fuels like natural gas including CNG and liquefied natural gas (LNG), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Changes in California's climate and ecosystems are occurring at a time when the State's population is expected to increase from 34 to 59 million by 2040, according to the California Energy Commission (CEC). As such, the number of people potentially affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase. Climate models indicate that temperatures in California may rise by 4.7°F to 10.5°F by the end of the century if GHG emissions continue to proceed at a medium or high rate (CEC, 2006). Lower emission rates would reduce the projected warming to 3.0°F to 5.6° Fahrenheit. Almost all climate scenarios include a continuing trend of warming through the end of the century given the amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. Total GHG emissions in California have been approximated by CARB, which found that 468 MMT of CO₂E GHG emissions were produced in California in 2004. CARB also found transportation to be the source of 38 percent of the State's GHG emissions, followed by electricity generation at 25 percent and industrial sources at 20 percent.

The IPCC was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information to further understand climate change, its potential impacts, and options for adaptation and mitigation. The IPCC predicts substantial increases in temperatures globally of between 1.1 to 6.4 degrees Celsius, depending on the scenario studied. This may impact California's natural environment in the following ways:

- ◆ Rising sea levels along the California coastline, particularly in the San Francisco Bay Area and within the San Joaquin Delta because of ocean expansion;
- ◆ Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- ◆ An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- ◆ Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- ◆ Potential increases in the severity of winter storms, affecting peak stream flows and flooding;
- ◆ Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield;
- ◆ Changes in the distribution of plant and wildlife species because of changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects;
- ◆ Increases in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- ◆ High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

The State of California GHG Inventory performed by CARB compiled statewide human sources of GHG emissions. It includes estimates for carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. The current inventory covers the years 1990 to 2004, and is summarized in Table 1. When accounting for GHGs, all types of GHG emissions are expressed in terms of CO₂ equivalents (CO₂E) and are typically

quantified in metric tons (MT) or millions of metric tons (MMT). Data sources used to calculate this GHG inventory include California state and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the IPCC. The 1990 emissions level is the sum total of sources from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories. These sectors include: agriculture; commercial; electricity generation; forestry; industrial; residential; and transportation. Emissions of carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

TABLE 1
State of California GHG Inventory (1990-2004)

SECTOR	TOTAL 1990 EMISSIONS (MMT CO ₂ E ²)	PERCENT OF TOTAL 1990 EMISSIONS	TOTAL 2004 EMISSIONS (MMT CO ₂ E)	PERCENT OF TOTAL 2004 EMISSIONS
Agriculture	23.4	5%	27.9	6%
Commercial	14.4	3%	12.8	3%
Electricity Generation	110.6	26%	119.8	25%
Forestry	0.2	<1%	0.2	<1%
Industrial	103.0	24%	96.2	20%
Residential	29.7	7%	29.1	6%
Transportation	150.7	35%	182.4	38%
Forestry Sinks (Absorption)	(6.7)		(4.7)	
Total	432	100%	468	100%

¹Source: Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, California Air Resources Board, November 16, 2007.

²MMT CO₂E refers to million metric tons of CO₂ equivalent emissions.

Regulatory

Federal

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to assess the impacts of global warming and to develop strategies that nations could apply to curb global climate change. In 1992, the United States joined other countries around the world in signing the United Nations Framework Convention on Climate Change treaty with the goal of controlling greenhouse gas emissions.

As a result, the Climate Change Action Plan was developed to address reduction of greenhouse gases in the United States. The plan is comprised of more than 50 voluntary programs. Additionally, the Montreal Protocol was first signed in 1987 and considerably amended in 1990 and 1992. The Montreal Protocol instructs that the production and consumption of compounds that deplete ozone in the stratosphere--chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform--were to be phased out by 2000 (2005 for methyl chloroform).

Recently, in *Massachusetts v. EPA* (April 2, 2007), the U.S. Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant" and directed the U. S. Environmental Protection Agency (EPA) to deem whether GHGs are affecting climate change. The EPA must regulate GHG emissions from automobiles under the Federal

Clean Air Act (FCAA) if it is determined GHGs do affect climate change. Currently, the EPA has not yet begun rule-making proceedings to judge whether GHGs are contributing to climate change. In addition, Congress has enlarged the corporate average fuel economy (CAFE) of the U.S. automotive fleet. In December 2007, President George W. Bush signed a bill increasing the minimum average miles per gallon for cars, sport utility vehicles and light trucks to 35 miles per gallon by 2020. This rise in CAFE standards will result in a significant reduction in GHG emissions from automobiles, the largest single emitting GHG group in California.

On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. EPA is proposing to find that greenhouse gases in the atmosphere endanger the public health and welfare of current and future generations. Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past. EPA has stated that these high atmospheric levels are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes. The effects of climate change observed to date and projected to occur in the future – including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems – are effects on public health and welfare within the policies of the FCAA.

The U.S. EPA annually publishes the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* for estimating sources of GHGs that is generally consistent with the IPCC methodology developed in its *Guidelines for National Greenhouse Gas Inventories*.

◆ Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, as a part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

◆ Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

◆ **Energy Policy Act of 2005**

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

◆ **Federal Climate Change Policy**

According to the EPA, “the United States government has established a comprehensive policy to address climate change” that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, “the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science.” The federal government’s goal is to reduce the GHG intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including “ENERGY STAR”, “Climate Leaders”, and Methane Voluntary Programs. In addition, there are other adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the FCAA:

- **Endangerment Finding:** The EPA Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)--in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The EPA Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles. On May 7, 2010, the EPA and the Secretary of Transportation promulgated a joint final rule representing the first substantive federal action to limit emissions of greenhouse gases (“GHGs”). 75 Fed. Reg. 25324 (May 7, 2010). The rule (“GHG Mobile Source Rule”) establishes emissions standards for passenger cars and light trucks under section 202 of the Clean Air Act, 42 U.S.C. § 7521, and corporate average fuel efficiency (“CAFE”) standards under the Energy Policy and Conservation Act. The standards apply to 2012 and later model year vehicles and will require that fuel efficiency increase and GHG emissions decrease through 2016, by which time the projected combined car and truck fleet will need to achieve the equivalent of 35.5 miles per gallon.

State

Various statewide and local initiatives to reduce California’s contribution to GHG emissions have raised awareness that, even though the various contributors to, and consequences of, global climate change are not yet fully understood, global climate change is occurring. Every nation emits GHGs; therefore, global cooperation will be required to reduce the rate of GHG emissions. Currently no state regulations have been adopted in California that establish ambient air quality standards for GHGs; however, California has passed legislation directing CARB to develop actions to reduce GHG emissions.

◆ California Strategy to Reduce Petroleum Dependence (AB 2076)

The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

◆ **Assembly Bill 1493 (Pavley)**

California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicles by an estimated 18 percent in 2020 and by 27 percent in 2030 (AEP 2007). In 2005, the CARB requested a waiver from EPA to enforce the regulation, as required under the Clean Air Act. Despite the fact that no waiver had ever been denied over a 40-year period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December 2007, indicating he had denied the waiver. On March 6, 2008, the waiver denial was formally issued in the *Federal Register*. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009. On June 30, 2009, EPA granted a waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year.

◆ **Executive Order S-3-05**

Governor Schwarzenegger established Executive Order S-3-05 in 2005. This Executive Order set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the Secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Cal/EPA Secretary created the Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006, which proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

◆ **Assembly Bill 32 (California Global Warming Solutions Act of 2006)**

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be

accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

◆ **Assembly Bill 1007**

Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

◆ **Bioenergy Action Plan – Executive Order #S-06-06**

Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

◆ **Executive Order S-1-07**

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure to meet the mandates in AB 32. On April 23, 2009, CARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020, and is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, as well as stimulate the production and use of alternative, low-carbon fuels. The LCFS is designed to provide a durable

framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. This framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

The standards are “back-loaded” meaning that more reductions are required in the last five years than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today’s fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the LCFS will be based on a combination of strategies involving lower carbon fuels and more efficient, advanced-technology vehicles.

◆ **Climate Action Program at Caltrans**

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and CO₂ from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that “the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards).”

Table 2 summarizes the Department and statewide efforts that Caltrans is implementing in order to reduce GHG emissions. For more detailed information about each strategy, please see Climate Action Program at Caltrans (December 2006). It is available at the following web address:

http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

◆ **Senate Bill 97**

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor’s Office of Planning and Research (OPR) to prepare, develop, and transmit to CARB guidelines for the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010. SB 97 also removed, both retroactively and prospectively, the legitimacy of litigation alleging inadequate CEQA analysis of effects of GHG emissions in the environmental review of projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E). This provision was repealed by operation of law on January 1, 2010; at that time, any such projects that remain unapproved would no longer be protected against

TABLE 2
Climate Change Strategies

STRATEGY	PROGRAM	PARTNERSHIP	METHOD/PROCESS	ESTIMATED GHG SAVINGS CUMM.	
				2010	2020
Smart Land Use	IGR	Lead: Department Partner: Local Governments	Review and mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Lead: Department Partner: Local and regional agencies, other stakeholders.	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Lead: Regional Governments Partner: Department	Regional Plans: SCAG, Metropolitan Transportation Commission, SANDAG, SACOG	0.975 MMT	7.8 MMT
Operational Improvements and ITS Deployment	Strategic Growth Plan	Lead: Department Partner: Regions	State ITS Architecture Congestion Management Plan	0.07 MMT	2.17 MMT
TOTAL SAVINGS				1.04 MMT	9.97 MMT

STRATEGY	PROGRAM	PARTNERSHIP	METHOD/PROCESS	ESTIMATED GHG SAVINGS CUMM.	
				2010	2020
Mainstreaming Energy and GHG into plans and projects	Office of Policy Analysis and Research	Interdepartmental effort	Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational and Information program	Office of Policy Analysis and Research	Partner: interdepartmental, CalEPA, CARB, CEC	Analytic report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening and Fuel Diversification	Division of Equipment	Dept of General Service	Fleet replacement		0.0065 MMT
			B20	0.0045MMT	0.045 MMT
			B100		0.0225 MMT
Non-Vehicular Conservation Measures	Energy Conservation Program	Green Action Team	Energy Conservation Opportunities	0.117 MMT	0.340 MMT
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries	2.5% limestone cement mix	1.2MMT/CA (0.144MMT/CT)	4.2MMT/CA (0.50MMT/CT)
			25% fly ash cement mix	0.36 MMT/CT	3.6 MMT/CT
			>50% fly ash/slag mix	Not Estimated	Not Estimated
Goods Movement	Office of Goods Movement	CalEPA, CARB, BTH, MPOs	Goods Movement Action Plan	Not Estimated	Not Estimated
TOTAL SAVINGS				1.68 MMT	8.7 MMT

litigation claims of failure to adequately address climate change issues. In the future, this bill will only protect a handful of public agencies from CEQA challenges on certain types of projects, and only for a few years' time.

As set forth more fully below, in June 2008, OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible (Governor's Office of Planning and Research, 2008). OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance, as described in Section 15064.7 of *CEQA Guidelines* that will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

◆ **Senate Bill 375**

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's Regional Transportation Plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the Regional Transportation Plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

◆ **California Climate Action Registry General Reporting Protocol**

The California Climate Action Registry (CCAR) was established in 2001 by SB 1771 and SB 527 (Chapter 1018, Statutes of 2000, and Chapter 769, Statutes of 2001, respectively) as a nonprofit voluntary registry for GHG emissions. The purpose of the CCAR is to help companies and organizations with operations in the State to establish GHG emissions baselines against which any future GHG emissions reduction requirements may be applied. CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry.

This protocol provides the principles, approach, methodology, and procedures required for participation in CCAR. It is designed to support the complete, transparent, and accurate reporting of an organization's GHG emissions inventory in a fashion that minimizes the reporting burden and maximizes the benefits associated with understanding the connection between fossil fuel consumption, electricity use, and GHG emissions in a quantifiable manner. The most updated version of this protocol was prepared in April 2008. All cabinet-level state agencies and departments have joined the CCAR. Membership in the CCAR means that all members of the Governor's Cabinet will be reporting their GHG emissions on a yearly basis.

◆ **California Code of Regulations Title 24**

Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

◆ **CAPCOA January 2008 CEQA and Climate Change**

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA. The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents.

The CAPCOA white paper addresses what constitutes new emissions, how baseline emissions should be established, what should be considered cumulatively considerable under CEQA, what a business as usual (BAU) scenario means, and whether an analysis should include life-cycle emissions. The CAPCOA white paper also contains a Climate Change Significance Criteria Flow Chart that proposes a tiered approach to determining significance under CEQA. The flow chart would consider a proposed plan's impact to be less than significant if a General Plan for the project area exists that is in compliance with AB 32 (showing that GHG emissions for 2020 would be less than 1990 emissions for the plan area). The flow chart would consider a proposed project's impact to be significant unless one of the following can be demonstrated:

- The project is exempt under SB 97;
- The project is on the "Green List" (or a list of projects that are deemed a positive contribution to California efforts to reduce GHG emissions); A General Plan for the project area exists that is in compliance with AB 32; and/or
- GHG emissions are analyzed and mitigated to less-than-significant.

The CAPCOA white paper considers GHG impacts to be exclusively cumulative impacts.

◆ **CARB Climate Change Proposed Scoping Plan**

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB has estimated that the 1990 GHG emissions level was 427 MMT net CO₂e (CARB 2007b). CARB estimates that a reduction of 173 MMT net CO₂e emissions below BAU would be required by 2020 to meet the 1990 levels

(CARB, 2007b). This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected BAU levels in 2020 (CARB, 2008a).

CARB's Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors, i.e. transportation, electrical power, commercial and residential, industrial etc. CARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32. CARB's Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. CARB's Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMTCO₂E);
- The LCFS (15.0 MMT CO₂E);
- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (26.3 MMT CO₂E); and
- A renewable portfolio standard for electricity production (21.3 MMT CO₂E).

CARB has identified a GHG reduction target of 5 MMT (of the 174 MMT total) for local land use changes (Table 2 of CARB's Scoping Plan), by Implementation of Reduction Strategy T-3 regarding Regional Transportation-Related GHG Targets. Additional land use reductions may be achieved as SB 375 is implemented. CARB's Scoping Plan states that successful implementation of the plan relies on local governments' land use, planning, and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. CARB's Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity. The measures approved by the Board are being developed to be in place by 2012. CARB's Scoping Plan expands the list of nine Discrete Early Action Measures to a list of 39 Recommended Actions contained in Appendices C and E of CARB's Scoping Plan.

◆ OPR June 2008 Technical Advisory on CEQA and Climate Change

SB 97 directs the Governor's Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions or the effects of GHG emissions under CEQA. OPR is required to prepare and transmit these guidelines by July 1, 2009 for certification and adoption by January 1, 2010. In the interim, a June 2008 Technical Advisory provides informal guidance for public agencies as they address the issue of climate change in their CEQA documents. The June 2008 Technical Advisory offers recommendations for identifying GHG emissions, determining significance under CEQA, and mitigating impacts.

The Advisory states that lead agencies under CEQA should develop their own approach to performing a climate change analysis for projects that generate GHG emissions. It also states that the lead agency should assess whether project emissions are individually or cumulatively significant, and implement strategies to avoid, reduce, or otherwise mitigate the impacts of those emissions when impacts are potentially significant. However, CARB's subsequently released draft thresholds acknowledge that the GHG analysis should be on a cumulative basis as GHG is a global phenomenon. Regional agencies can attempt to reduce GHG emissions through their planning

processes. For example, regional transportation planning agencies can adopt plans and programs that address congestion relief and reduce VMT.

In April 2009, OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

- Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan;
- Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment;
- When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts;
- New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions can be found in Appendix F of the CEQA Guidelines;
- OPR is clear to state that “to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation,” and
- OPR emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.

◆ **OPR January 8, 2009 Preliminary Draft CEQA Guideline Amendments for GHG Emissions**

In January 2009, OPR released preliminary proposed amendments to the *CEQA Guidelines* regarding GHG emissions. No significance threshold was included in the draft and the guidelines afford the customary deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommended that CARB set state-wide thresholds of significance. CARB released draft thresholds, as referenced below. OPR emphasized the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead agency determines that GHGs may be generated by a proposed project, the agency is responsible for quantifying estimated GHG emissions by type and source. The guidelines provide the following recommendations for determining the significance of GHG emissions under draft Section 15064.4:

- a. The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:
 1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most

- appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or
2. Rely on a qualitative analysis or performance based standards.
- b. A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:
1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
 2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
 3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The amendments reiterated that the analysis of GHG impacts is cumulative. Section 15130 (f) provides that an EIR shall analyze GHG emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable. On April 13, 2009, OPR submitted its proposed amendments to the State *CEQA Guidelines* for GHG emissions to the Secretary for Natural Resources, as required by Senate Bill 97 (Chapter 185, 2007). The Natural Resources Agency conducted formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by Senate Bill 97. On December 30, 2009, the Resources Agency approved the new GHG guidelines as amendments to the existing CEQA guidelines. The revised guidelines took effect on March 18, 2010.

◆ **CARB Preliminary Draft Staff Proposal, October 2008**

Separate from CARB's Scoping Plan approved in December 2008, CARB issued a Staff Proposal in October 2008, as its first step toward developing recommended statewide interim thresholds of significance for GHGs that may be adopted by local agencies for their own use. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. These draft thresholds are under revision in response to voluminous comments received. Finalized thresholds are expected sometime in 2010.

CARB staff's objective in this proposal is to develop a threshold of significance that would require the vast majority (approximately 90 percent statewide) of GHG emissions from new industrial projects to be subject to CEQA's requirement to impose feasible mitigation. CARB believes this can be accomplished with a threshold that allows small projects to be considered insignificant. CARB staff used existing data for the industrial sector to derive a proposed hybrid threshold. The threshold consists of a quantitative threshold of 7,000 metric tons of CO₂E per year (MT/year CO₂E) for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been developed.

Regional

◆ **San Joaquin Valley Air Pollution Control District**

To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas emissions (GHG) on global climate change, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

Environmental Impacts, Mitigation Measures and Significance After Mitigation

Criteria for Significance

As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact", individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice. The potential effects of a project may be individually limited but cumulatively significant. Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project, encourages reliance on other Environmental Impact Reports that discuss greenhouse gases, and tiering from them. The preliminary draft amendments OPR issued included an introductory letter in which OPR indicated that it intends to rely on CARB to recommend a method for setting significance thresholds.

As described previously, the State Legislature and the global scientific community have found that global climate change poses significant adverse effects to the environment of California and the entire world. To mitigate these adverse effects the State Legislature enacted AB 32 which requires statewide GHG reductions to 1990 levels by 2020.

AB 32 and S-3-05 target the reduction of statewide emissions. It should be made clear that AB 32 and S-3-05 do not specify that the emissions reductions should be achieved through uniform reduction by geographic location or by emission source characteristics. Consistency with AB 32 will be used to assess significance with respect to greenhouse gas (GHG) emissions.

Methodology

Climate change is a significant global cumulative impact that could also have a substantial effect on the natural environment of California and Fresno County. The potential contribution of the proposed project to this cumulative impact is discussed below.

State action on climate change is mandated by AB 32. Fresno COG, along with other regional planning agencies throughout the State, will be monitoring the progress of State agencies in developing approaches to address GHG emissions. As agreed-upon approaches for project-level CEQA analysis and for transportation planning are established, Fresno COG expects that climate change will be a key environmental consideration in future regional transportation planning. Both Fresno COG and other responsible agencies implementing projects will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32.

California's Department of Transportation is implementing the Climate Action Program at Caltrans which was published in December 2006. One of the main strategies identified in the Program to reduce GHG emissions is to make California's transportation system more efficient. The highest levels of CO₂ from mobile sources, such as automobiles, occur at stop-and-go speeds less than 25 mph and speeds over 55 mph. The most severe emissions occur when speeds are less than 25 mph. GHG emissions, particularly CO₂, may be reduced if a project relieves congestion by enhancing operations and improving travel times along a corridor that experiences high congestion.

CO₂ Emissions

The effect of the proposed project on GHG emissions was calculated based on traffic data developed for the project's Traffic Technical Report (VRPA Technologies, Inc., June 2011). The calculations are shown in Table 2 and are based on analysis using the CT-EMFAC Model, Version 2.6. Emissions were calculated for the PM peak hour for each study roadway segment included in the Traffic Technical Report. The analysis is focused on the PM peak hour because that is when Golden State Boulevard is expected to experience the highest traffic volume, and potentially experience the most congestion.

Table 3 indicates that although CO₂ emissions are projected to increase when comparing Future Year 2035 and Existing conditions, emissions are expected to be the same for both No Build and Build scenarios. This is due to the fact that the analysis of CO₂ emissions is based on traffic volumes, which are not expected to differ between the No Build and Build conditions. However, it should be noted that the proposed project is expected to increase the efficiency of the roadway and may attract rerouted trips from elsewhere in the transportation network. This would result in an increase in VMT along the highway corridor and potentially an increase in CO₂ emissions.

It should also be noted that this analysis only looks at emissions within the project study area and not to the regional transportation network where the changes in GHG emissions resulting from the project would be too small to evaluate. The CO₂ emissions shown in Table 3 are only useful for a comparison between scenarios. The numbers are not necessarily an accurate reflection of what the true CO₂ emissions will be because CO₂ emissions are dependent on other factors that are not part of the model.

◆ Construction Emissions

GHG emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can

be mitigated to some degree by longer intervals between maintenance and rehabilitation events. Construction emissions of CO₂ were estimated using the Road Construction Emissions Model, Version 6.3.2. Results of the analysis are shown in Table 4 below.

TABLE 3
Comparison of Peak Hour CO₂ Emissions
(Expressed in US Tons)

Golden State Blvd Segment	Existing		Future Year 2035	
	No Build	Build	No Build	Build
Adams Ave to Merced St	0.088	0.088	0.161	0.161
Merced St to Manning Ave	0.532	0.532 ¹	0.973	0.973 ¹
Manning Ave to Highland Ave	0.722	0.722 ¹	1.328	1.328 ¹
Highland Ave to Floral Ave	0.094	0.094	0.172	0.172
Floral Ave to Thompson Ave	0.166	0.166	0.312	0.312
Thompson Ave to 2nd St	0.162	0.162	0.288	0.288
2nd St to Mountain View Ave	0.407	0.407	0.746	0.746
Mountain View Ave to Sierra St	0.447	0.447	0.821	0.821
Sierra St to Draper St	0.061	0.061	0.112	0.112

¹ Although the analysis indicates CO₂ emissions would be the same for both Build and No Build conditions, project improvements at the study intersections are anticipated to improve the traffic flow and efficiency of the roadway which would decrease idling and congestion, thereby reducing CO₂ emissions.

TABLE 4
Project Construction CO₂ Emissions

Summary Report	CO ₂
Total Construction Emissions	2.66 tons
Construction Emissions Per Year	0.89 tons/year

In order to reduce GHG emissions during construction, the project may implement the following measures:

- Prepare and implement a transportation management plan (TMP). Among other benefits, the TMP will reduce traffic congestion during construction.
- Strictly prohibit unnecessary idling of internal combustion engines.

◆ **Greenhouse Gas Reduction**

Fresno COG used the best available information to determine whether the 2011 RTP is consistent with the State's achievement of the AB 32 GHG emission reductions. In light of the uncertainty in the regulatory and technological environment, the 2011 RTP incorporates all feasible mitigation measures, which are identified below, to reduce the impacts of the proposed RTP projects, of which the proposed Project is included, on global climate change. The RTP EIR also includes a requirement that RTP projects incorporate the SJVAPCD's Best Performance Standards for reducing GHG. The RTP also incorporates numerous policies, action items and funding priorities to develop and improve alternative modes of transportation throughout the County and the incorporated cities in Fresno County.

The measures included in the RTP are consistent with the GHG mitigation approaches outlined by the California Attorney General's Office in the May 21, 2008 report titled: *The California Environmental Quality Act, Addressing Global Warming Impacts at the Local Agency Level: Global Warming Measures*. The mitigation measures outlined below, and the policies and action items included in the 2011 RTP update are also consistent with the May 29, 2008 Addendum to the 2007 Regional Transportation Guidelines prepared by the California Transportation Commission: *Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process*.

◆ **SJVAPCD Best Performance Standards (BPS)**

The SJVAPCD published *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* in December 2009. This guidance document defines Best Performance Standards (BPS) as the most effective achieved in-practice means of reducing or limiting GHG emissions from a GHG emissions source. The document includes BPSs for both traditional stationary source projects, and development projects. For stationary sources, BPSs includes equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category. For development projects, BPS focuses on measures that improve energy efficiency and those that reduce vehicle miles traveled.

CEQA Significance

An increase in GHG emissions is not anticipated with construction of the proposed project when compared to the No Build conditions. Nonetheless, further measures can be implemented to help reduce energy consumption and GHG emissions. These measures are outlined below. The absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a determination regarding the project's direct impact and its contribution on the cumulative scale to climate change.

Measures to Reduce GHG Emissions

To the extent feasible, Fresno COG in association with the Cities of Fowler, Selma, and Kingsburg can implement the following measures to reduce the GHG emissions related to traffic operations along Golden State Boulevard:

- Implement intelligent transportation systems (ITS) to help manage the efficiency of the corridor.
- Provide improved mass transit that will reduce the demand of automobiles along the corridor.
- Provide landscaping along the corridor that will reduce surface warming, and through photosynthesis, decrease CO₂. The proposed project already includes landscaping.
- Incorporate the use of energy efficient lighting, such as LED traffic signals. LED bulbs (or balls) cost \$60 to \$70 apiece for stoplights but last five (5) to six (6) years, compared to the one (1) year average lifespan of

the incandescent bulbs previously used. The LED bulbs themselves consume 10% of the electricity of traditional lights, which will also help reduce CO₂ emissions.

APPENDIX A
CT-EMFAC Model Output

Existing MSAT - 2nd to Mountain View

Title : Existing MSAT - 2nd to Mountain View
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:41 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 552
 Volume (vph) : 1.75
 Road Length(mi) :
 Number of Hours : 1
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 85 5 % 10

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	0.00
0.00	0.000000	
40	0.140204	0.00
0.00	0.000000	
45	0.135563	0.00
0.00	0.000000	
50	0.138677	96.60

Existing MSAT - 2nd to Mountain View

Speed (mph)	MSAT	Weighted MSAT	VMT
10.00	13.396198		
55	0.149341		821.10
85.00	122.623895		
60	0.170551		48.30
5.00	8.237613		
65	0.202915		0.00
0.00	0.000000		
70	0.231494		0.00
0.00	0.000000		
75	0.273901		0.00
0.00	0.000000		

Total	100.00	144.257707	966.00

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010953		0.00
0.00	0.000000		
10	0.008595		0.00
0.00	0.000000		
15	0.007064		0.00
0.00	0.000000		
20	0.005110		0.00
0.00	0.000000		
25	0.004375		0.00
0.00	0.000000		
30	0.004521		0.00
0.00	0.000000		
35	0.003465		0.00
0.00	0.000000		
40	0.003465		0.00
0.00	0.000000		
45	0.003579		0.00
0.00	0.000000		
50	0.003579		96.60
10.00	0.345731		
55	0.003579		821.10
85.00	2.938717		
60	0.003427		48.30
5.00	0.165524		
65	0.004714		0.00
0.00	0.000000		
70	0.004521		0.00
0.00	0.000000		
75	0.004350		0.00
0.00	0.000000		

Total	100.00	3.449972	966.00

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.046606		0.00
0.00	0.000000		

Existing MSAT - 2nd to Mountain View

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	0.00
0.00		0.000000	
40		0.009801	0.00
0.00		0.000000	
45		0.009685	0.00
0.00		0.000000	
50		0.010186	96.60
10.00		0.983968	
55		0.011199	821.10
85.00		9.195499	
60		0.012961	48.30
5.00		0.626016	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	10.805483	966.00

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	0.00	
0.00	0.000000		
35	0.022626	0.00	
0.00	0.000000		
40	0.020332	0.00	
0.00	0.000000		
45	0.020134	0.00	
0.00	0.000000		
50	0.019701	96.60	
10.00	1.903117		
55	0.021498	821.10	
85.00	17.652008		
60	0.024417	48.30	
5.00	1.179341		
65	0.028253	0.00	

Existing MSAT - 2nd to Mountain View

	0.00	0.000000	
70	0.00	0.029829	0.00
75	0.00	0.033661	0.00
	0.00	0.000000	

Total	100.00	20.734466	966.00

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.125053	0.00	0.00
0.00	0.000000		
10	0.083944	0.00	0.00
0.00	0.000000		
15	0.058164	0.00	0.00
0.00	0.000000		
20	0.042180	0.00	0.00
0.00	0.000000		
25	0.033617	0.00	0.00
0.00	0.000000		
30	0.027819	0.00	0.00
0.00	0.000000		
35	0.023780	0.00	0.00
0.00	0.000000		
40	0.021516	0.00	0.00
0.00	0.000000		
45	0.021227	0.00	0.00
0.00	0.000000		
50	0.021909	96.60	96.60
10.00	2.116409		
55	0.023269	821.10	821.10
85.00	19.106176		
60	0.025367	48.30	48.30
5.00	1.225226		
65	0.029506	0.00	0.00
0.00	0.000000		
70	0.033579	0.00	0.00
0.00	0.000000		
75	0.036169	0.00	0.00
0.00	0.000000		

Total	100.00	22.447811	966.00

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1.252436	0.00	0.00
0.00	0.000000		
10	0.972427	0.00	0.00
0.00	0.000000		
15	0.790534	0.00	0.00
0.00	0.000000		
20	0.699718	0.00	0.00
0.00	0.000000		

Existing MSAT - 2nd to Mountain View

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	0.00
0.00		0.000000	
40		0.601492	0.00
0.00		0.000000	
45		0.606208	0.00
0.00		0.000000	
50		0.621801	96.60
10.00		60.065977	
55		0.649943	821.10
85.00		533.668197	
60		0.695067	48.30
5.00		33.571736	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	627.305910	966.00

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	0.00	
0.00	0.000000		
35	0.005424	0.00	
0.00	0.000000		
40	0.004894	0.00	
0.00	0.000000		
45	0.004685	0.00	
0.00	0.000000		
50	0.004760	96.60	
10.00	0.459816		
55	0.005154	821.10	
85.00	4.231949		
60	0.005895	48.30	
5.00	0.284729		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Existing MSAT - 2nd to Mountain View

Total 100.00 4.976494 966.00

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1,126.224879	0.00
0.00	0.000000	
10	858.457476	0.00
0.00	0.000000	
15	678.179737	0.00
0.00	0.000000	
20	556.043565	0.00
0.00	0.000000	
25	475.994821	0.00
0.00	0.000000	
30	421.934514	0.00
0.00	0.000000	
35	386.971628	0.00
0.00	0.000000	
40	366.997347	0.00
0.00	0.000000	
45	359.825507	0.00
0.00	0.000000	
50	364.751578	96.60
10.00	35,235.002435	
55	382.414289	821.10
85.00	314,000.372698	
60	414.925071	48.30
5.00	20,040.880929	
65	466.284807	0.00
0.00	0.000000	
70	469.756332	0.00
0.00	0.000000	
75	475.060541	0.00
0.00	0.000000	

Total	369,276.256062	966.00
100.00		

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	6.401178	0.00
0.00	0.000000	
10	5.303987	0.00
0.00	0.000000	
15	4.524254	0.00
0.00	0.000000	
20	3.959841	0.00
0.00	0.000000	
25	3.550922	0.00
0.00	0.000000	
30	3.242218	0.00
0.00	0.000000	
35	3.014628	0.00
0.00	0.000000	

Existing MSAT - 2nd to Mountain View

40		2.856859	0.00
0.00		0.000000	
45		2.770133	0.00
0.00		0.000000	
50		2.757814	96.60
10.00		266.404832	
55		2.843012	821.10
85.00		2,334.397153	
60		3.059510	48.30
5.00		147.774333	
65		3.478650	0.00
0.00		0.000000	
70		3.951430	0.00
0.00		0.000000	
75		4.776375	0.00
0.00		0.000000	

Total	100.00	2,748.576319	966.00

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.003853	0.00	
0.00	0.000000		
10	0.002614	0.00	
0.00	0.000000		
15	0.001851	0.00	
0.00	0.000000		
20	0.001395	0.00	
0.00	0.000000		
25	0.001123	0.00	
0.00	0.000000		
30	0.000950	0.00	
0.00	0.000000		
35	0.000845	0.00	
0.00	0.000000		
40	0.000787	0.00	
0.00	0.000000		
45	0.000775	0.00	
0.00	0.000000		
50	0.000800	96.60	
10.00	0.077280		
55	0.000871	821.10	
85.00	0.715178		
60	0.000998	48.30	
5.00	0.048203		
65	0.001207	0.00	
0.00	0.000000		
70	0.001399	0.00	
0.00	0.000000		
75	0.001705	0.00	
0.00	0.000000		

Total	100.00	0.840662	966.00

Pollutant Name : BENZENE

Existing MSAT - 2nd to Mountain View

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.019285		0.00
0.00	0.000000		
10	0.012799		0.00
0.00	0.000000		
15	0.008764		0.00
0.00	0.000000		
20	0.006463		0.00
0.00	0.000000		
25	0.005204		0.00
0.00	0.000000		
30	0.004388		0.00
0.00	0.000000		
35	0.003882		0.00
0.00	0.000000		
40	0.003597		0.00
0.00	0.000000		
45	0.003527		0.00
0.00	0.000000		
50	0.003627		96.60
10.00	0.350368		
55	0.003941		821.10
85.00	3.235955		
60	0.004502		48.30
5.00	0.217447		
65	0.005432		0.00
0.00	0.000000		
70	0.006282		0.00
0.00	0.000000		
75	0.007621		0.00
0.00	0.000000		

Total			966.00
	100.00	3.803770	

Pollutant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000810		0.00
0.00	0.000000		
10	0.000559		0.00
0.00	0.000000		
15	0.000407		0.00
0.00	0.000000		
20	0.000311		0.00
0.00	0.000000		
25	0.000250		0.00
0.00	0.000000		
30	0.000212		0.00
0.00	0.000000		
35	0.000188		0.00
0.00	0.000000		
40	0.000176		0.00
0.00	0.000000		
45	0.000173		0.00
0.00	0.000000		
50	0.000179		96.60
10.00	0.017291		

Existing MSAT - 2nd to Mountain View

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	85.00	0.000195	0.160115	821.10
60	5.00	0.000223	0.010771	48.30
65	0.00	0.000269	0.000000	0.00
70	0.00	0.000310	0.000000	0.00
75	0.00	0.000377	0.000000	0.00
Total				966.00
100.00		0.188177		

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.018245	0.00
10	0.010699	0.00
15	0.005798	0.00
20	0.003565	0.00
25	0.002900	0.00
30	0.002409	0.00
35	0.002062	0.00
40	0.001843	0.00
45	0.001750	0.00
50	0.001771	96.60
55	0.001917	821.10
60	0.002197	48.30
65	0.002634	0.00
70	0.003168	0.00
75	0.003909	0.00
Total		
100.00	1.851242	966.00

Idling Emissions (grams) (Currently NOT Available)

Existing MSAT - 2nd to Mountain View

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
55.699065 0.052548 17.67

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 17.67

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.004240 0.000004 17.67

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.555422 0.000524 17.67

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 17.67

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 17.67

Existing MSAT - 2nd to Mountain View

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	199.956771	0.199957
0.000220415		
S02	3.449972	0.003450
0.000003803		
Di esel _PM	10.805483	0.010805
0.000011911		
PM2.5	20.734466	0.020734
0.000022856		
PM10	22.447811	0.022448
0.000024744		
NOX	627.305910	0.627306
0.000691486		
FORMALDEHYDE	4.976494	0.004976
0.000005486		
C02	369,276.256062	369.276256
0.407057394		
CO	2,748.576319	2.748576
0.003029787		
BUTADIENE	0.844901	0.000845
0.000000931		
BENZENE	4.359192	0.004359
0.000004805		
ACROLEIN	0.188177	0.000188
0.000000207		
ACETALDEHYDE	1.851242	0.001851
0.000002041		

END

Existing MSAT - Adams to Merced

Title : Existing MSAT - Adams to Merced
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:11 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Number of Hours : Total VMT Volume (vph) Road Length(mi)
 1 : 438 0.5

VMT Distribution(%) by Speed(mph)
 (mph) 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 % 10 85

Offpeak User Input:
 Number of Hours : Total VMT Volume (vph) Road Length(mi)

VMT Distribution(%) by Speed(mph)
 (mph) 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	0.00
0.00	0.000000	
40	0.140204	0.00
0.00	0.000000	
45	0.135563	21.90
10.00	2.968830	
50	0.138677	186.15

Existing MSAT - Adams to Merced

Speed (mph)	MSAT	Weighted MSAT	Weighted MSAT
85.00	25.814724	0.149341	10.95
55	1.635284	0.170551	0.00
60	0.000000	0.202915	0.00
65	0.000000	0.231494	0.00
70	0.000000	0.273901	0.00
75	0.000000		
0.00	0.000000		

Total	100.00	30.418837	219.00

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010953	0.000000	0.00
0.00	0.008595	0.000000	0.00
10	0.007064	0.000000	0.00
0.00	0.005110	0.000000	0.00
20	0.004375	0.000000	0.00
0.00	0.004521	0.000000	0.00
25	0.003465	0.000000	0.00
0.00	0.003465	0.000000	0.00
40	0.003579	0.078380	21.90
45	0.003579	0.666231	186.15
10.00	0.003579	0.039190	10.95
50	0.003427	0.000000	0.00
85.00	0.004714	0.000000	0.00
55	0.004521	0.000000	0.00
5.00	0.004521	0.000000	0.00
60	0.004350	0.000000	0.00
0.00	0.000000		
65			
0.00			
70			
0.00			
75			
0.00			

Total	100.00	0.783801	219.00

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.046606	0.000000	0.00
0.00			

Existing MSAT - Adams to Merced

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	0.00
0.00		0.000000	
40		0.009801	0.00
0.00		0.000000	
45		0.009685	21.90
10.00		0.212102	
50		0.010186	186.15
85.00		1.896124	
55		0.011199	10.95
5.00		0.122629	
60		0.012961	0.00
0.00		0.000000	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	2.230854	219.00

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	0.00	
0.00	0.000000		
35	0.022626	0.00	
0.00	0.000000		
40	0.020332	0.00	
0.00	0.000000		
45	0.020134	21.90	
10.00	0.440935		
50	0.019701	186.15	
85.00	3.667341		
55	0.021498	10.95	
5.00	0.235403		
60	0.024417	0.00	
0.00	0.000000		
65	0.028253	0.00	

Existing MSAT - Adams to Merced

Speed (mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
70	0.00	0.029829	0.000000	0.00
75	0.00	0.033661	0.000000	0.00

Total	100.00		4.343679	219.00

Pollutant Name : PM10

speed(mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
5	0.00	0.125053	0.000000	0.00
10	0.00	0.083944	0.000000	0.00
15	0.00	0.058164	0.000000	0.00
20	0.00	0.042180	0.000000	0.00
25	0.00	0.033617	0.000000	0.00
30	0.00	0.027819	0.000000	0.00
35	0.00	0.023780	0.000000	0.00
40	0.00	0.021516	0.000000	0.00
45	0.00	0.021227	0.000000	0.00
50	10.00	0.464871	4.648710	21.90
55	85.00	0.021909	1.861515	186.15
60	5.00	0.023269	0.116345	10.95
65	0.00	0.025367	0.000000	0.00
70	0.00	0.029506	0.000000	0.00
75	0.00	0.033579	0.000000	0.00
75	0.00	0.036169	0.000000	0.00

Total	100.00		4.798027	219.00

Pollutant Name : NOX

speed(mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
5	0.00	1.252436	0.000000	0.00
10	0.00	0.972427	0.000000	0.00
15	0.00	0.790534	0.000000	0.00
20	0.00	0.699718	0.000000	0.00

Existing MSAT - Adams to Merced

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	0.00
0.00		0.000000	
40		0.601492	0.00
0.00		0.000000	
45		0.606208	21.90
10.00		13.275955	
50		0.621801	186.15
85.00		115.748256	
55		0.649943	10.95
5.00		7.116876	
60		0.695067	0.00
0.00		0.000000	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	136.141087	219.00

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	0.00	
0.00	0.000000		
35	0.005424	0.00	
0.00	0.000000		
40	0.004894	0.00	
0.00	0.000000		
45	0.004685	21.90	
10.00	0.102602		
50	0.004760	186.15	
85.00	0.886074		
55	0.005154	10.95	
5.00	0.056436		
60	0.005895	0.00	
0.00	0.000000		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Total Existing MSAT - Adams to Merced 219.00
 100.00 1.045112

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1,126.224879	0.00
0.00	0.000000	
10	858.457476	0.00
0.00	0.000000	
15	678.179737	0.00
0.00	0.000000	
20	556.043565	0.00
0.00	0.000000	
25	475.994821	0.00
0.00	0.000000	
30	421.934514	0.00
0.00	0.000000	
35	386.971628	0.00
0.00	0.000000	
40	366.997347	0.00
0.00	0.000000	
45	359.825507	21.90
10.00	7,880.178603	
50	364.751578	186.15
85.00	67,898.506245	
55	382.414289	10.95
5.00	4,187.436465	
60	414.925071	0.00
0.00	0.000000	
65	466.284807	0.00
0.00	0.000000	
70	469.756332	0.00
0.00	0.000000	
75	475.060541	0.00
0.00	0.000000	

Total	79,966.121313	219.00
100.00		

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	6.401178	0.00
0.00	0.000000	
10	5.303987	0.00
0.00	0.000000	
15	4.524254	0.00
0.00	0.000000	
20	3.959841	0.00
0.00	0.000000	
25	3.550922	0.00
0.00	0.000000	
30	3.242218	0.00
0.00	0.000000	
35	3.014628	0.00
0.00	0.000000	

Existing MSAT - Adams to Merced

Speed (mph)	VT (hours)	MSAT (grams/mile)	VT * MSAT
40	0.00	2.856859	0.00
45	10.00	2.770133	21.90
50	85.00	2.757814	186.15
55	5.00	2.843012	10.95
60	0.00	3.059510	0.00
65	0.00	3.478650	0.00
70	0.00	3.951430	0.00
75	0.00	4.776375	0.00
----- Total			219.00
	100.00	605.163970	

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	VT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.003853	0.00
10	0.002614	0.00
15	0.001851	0.00
20	0.001395	0.00
25	0.001123	0.00
30	0.000950	0.00
35	0.000845	0.00
40	0.000787	0.00
45	0.000775	21.90
50	0.000800	186.15
55	0.000871	10.95
60	0.000998	0.00
65	0.001207	0.00
70	0.001399	0.00
75	0.001705	0.00
----- Total		
100.00	0.175430	219.00

Pollutant Name : BENZENE

Existing MSAT - Adams to Merced

speed(mph)	Emi ssi on	Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed		
5		0.019285	0.00
0.00		0.000000	
10		0.012799	0.00
0.00		0.000000	
15		0.008764	0.00
0.00		0.000000	
20		0.006463	0.00
0.00		0.000000	
25		0.005204	0.00
0.00		0.000000	
30		0.004388	0.00
0.00		0.000000	
35		0.003882	0.00
0.00		0.000000	
40		0.003597	0.00
0.00		0.000000	
45		0.003527	21.90
10.00		0.077241	
50		0.003627	186.15
85.00		0.675166	
55		0.003941	10.95
5.00		0.043154	
60		0.004502	0.00
0.00		0.000000	
65		0.005432	0.00
0.00		0.000000	
70		0.006282	0.00
0.00		0.000000	
75		0.007621	0.00
0.00		0.000000	

Total			219.00
	100.00	0.795561	

Po ll utant Name : ACROLEIN

speed(mph)	Emi ssi on	Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed		
5		0.000810	0.00
0.00		0.000000	
10		0.000559	0.00
0.00		0.000000	
15		0.000407	0.00
0.00		0.000000	
20		0.000311	0.00
0.00		0.000000	
25		0.000250	0.00
0.00		0.000000	
30		0.000212	0.00
0.00		0.000000	
35		0.000188	0.00
0.00		0.000000	
40		0.000176	0.00
0.00		0.000000	
45		0.000173	21.90
10.00		0.003789	
50		0.000179	186.15
85.00		0.033321	

Existing MSAT - Adams to Merced

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	5.00	0.000195	0.002135	10.95
60	0.00	0.000223	0.000000	0.00
65	0.00	0.000269	0.000000	0.00
70	0.00	0.000310	0.000000	0.00
75	0.00	0.000377	0.000000	0.00

Total	100.00		0.039245	219.00

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.018245	0.00
10	0.010699	0.00
15	0.005798	0.00
20	0.003565	0.00
25	0.002900	0.00
30	0.002409	0.00
35	0.002062	0.00
40	0.001843	0.00
45	0.001750	21.90
50	0.001771	186.15
55	0.001917	10.95
60	0.002197	0.00
65	0.002634	0.00
70	0.003168	0.00
75	0.003909	0.00

Total		219.00
100.00	0.388988	

 Idling Emissions (grams) (Currently NOT Available)

Existing MSAT - Adams to Merced

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
13.900284 0.052548 4.41

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 4.41

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.001058 0.000004 4.41

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.138611 0.000524 4.41

Pollutant Name : ACRYLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 4.41

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 4.41

Existing MSAT - Adams to Merced

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	44.319121	0.044319
0.000048853		
S02	0.783801	0.000784
0.000000864		
Di esel _PM	2.230854	0.002231
0.000002459		
PM2.5	4.343679	0.004344
0.000004788		
PM10	4.798027	0.004798
0.000005289		
NOX	136.141087	0.136141
0.000150070		
FORMALDEHYDE	1.045112	0.001045
0.000001152		
CO2	79,966.121313	79.966121
0.088147560		
CO	605.163970	0.605164
0.000667079		
BUTADIENE	0.176488	0.000176
0.000000195		
BENZENE	0.934173	0.000934
0.000001030		
ACROLEIN	0.039245	0.000039
0.000000043		
ACETALDEHYDE	0.388988	0.000389
0.000000429		

END

Existing MSAT - Floral to Thompson

Title : Existing MSAT - Floral to Thompson
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:37 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 817
 Volume (vph) : 0.5
 Road Length(mi) : 0.5
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55							10	85	5	
60										
65										
70										
>75										

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55										
60										
65										
70										
>75										

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	40.85
10.00	6.210426	
40	0.140204	347.23
85.00	48.682334	
45	0.135563	20.43
5.00	2.768874	
50	0.138677	0.00

Existing MSAT - Floral to Thompson

Speed (mph)	MSAT	Factor	VMT
55	0.00	0.149341	0.00
60	0.00	0.170551	0.00
65	0.00	0.202915	0.00
70	0.00	0.231494	0.00
75	0.00	0.273901	0.00

Total	100.00	57.661634	408.50

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.010953	0.00
10	0.008595	0.00
15	0.007064	0.00
20	0.005110	0.00
25	0.004375	0.00
30	0.004521	0.00
35	0.003465	40.85
40	0.003465	347.23
45	0.003579	20.43
50	0.003579	0.00
55	0.003579	0.00
60	0.003427	0.00
65	0.004714	0.00
70	0.004521	0.00
75	0.004350	0.00

Total	1.417781	408.50

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.046606	0.00
10	0.000000	

Existing MSAT - Floral to Thompson

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	40.85
10.00		0.422757	
40		0.009801	347.23
85.00		3.403152	
45		0.009685	20.43
5.00		0.197816	
50		0.010186	0.00
0.00		0.000000	
55		0.011199	0.00
0.00		0.000000	
60		0.012961	0.00
0.00		0.000000	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	4.023725	408.50

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.115192	0.00
0.00	0.000000	
10	0.076943	0.00
0.00	0.000000	
15	0.053130	0.00
0.00	0.000000	
20	0.038388	0.00
0.00	0.000000	
25	0.031273	0.00
0.00	0.000000	
30	0.026027	0.00
0.00	0.000000	
35	0.022626	40.85
10.00	0.924272	
40	0.020332	347.23
85.00	7.059779	
45	0.020134	20.43
5.00	0.411237	
50	0.019701	0.00
0.00	0.000000	
55	0.021498	0.00
0.00	0.000000	
60	0.024417	0.00
0.00	0.000000	
65	0.028253	0.00

Existing MSAT - Floral to Thompson

0.00	0.000000	
70	0.029829	0.00
0.00	0.000000	
75	0.033661	0.00
0.00	0.000000	

Total	8.395288	408.50
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.125053	0.00
0.00	0.000000	
10	0.083944	0.00
0.00	0.000000	
15	0.058164	0.00
0.00	0.000000	
20	0.042180	0.00
0.00	0.000000	
25	0.033617	0.00
0.00	0.000000	
30	0.027819	0.00
0.00	0.000000	
35	0.023780	40.85
10.00	0.971413	
40	0.021516	347.23
85.00	7.470893	
45	0.021227	20.43
5.00	0.433561	
50	0.021909	0.00
0.00	0.000000	
55	0.023269	0.00
0.00	0.000000	
60	0.025367	0.00
0.00	0.000000	
65	0.029506	0.00
0.00	0.000000	
70	0.033579	0.00
0.00	0.000000	
75	0.036169	0.00
0.00	0.000000	

Total	8.875868	408.50
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.252436	0.00
0.00	0.000000	
10	0.972427	0.00
0.00	0.000000	
15	0.790534	0.00
0.00	0.000000	
20	0.699718	0.00
0.00	0.000000	

Existing MSAT - Floral to Thompson

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	40.85
10.00		24.869929	
40		0.601492	347.23
85.00		208.853060	
45		0.606208	20.43
5.00		12.381798	
50		0.621801	0.00
0.00		0.000000	
55		0.649943	0.00
0.00		0.000000	
60		0.695067	0.00
0.00		0.000000	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	246.104787	408.50

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	0.00	
0.00	0.000000		
35	0.005424	40.85	
10.00	0.221570		
40	0.004894	347.23	
85.00	1.699319		
45	0.004685	20.43	
5.00	0.095691		
50	0.004760	0.00	
0.00	0.000000		
55	0.005154	0.00	
0.00	0.000000		
60	0.005895	0.00	
0.00	0.000000		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Existing MSAT - Floral to Thompson

Total	100.00	2.016581	408.50
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Pollutant Name : CO2

speed(mph)	Emission Factor(grams/mile)	Emissions by Speed	VMT by Speed
VMT-Speed Distribution (%)			
5	1,126.224879		0.00
0.00	0.000000		
10	858.457476		0.00
0.00	0.000000		
15	678.179737		0.00
0.00	0.000000		
20	556.043565		0.00
0.00	0.000000		
25	475.994821		0.00
0.00	0.000000		
30	421.934514		0.00
0.00	0.000000		
35	386.971628		40.85
10.00	15,807.791004		
40	366.997347		347.23
85.00	127,430.653812		
45	359.825507		20.43
5.00	7,349.435980		
50	364.751578		0.00
0.00	0.000000		
55	382.414289		0.00
0.00	0.000000		
60	414.925071		0.00
0.00	0.000000		
65	466.284807		0.00
0.00	0.000000		
70	469.756332		0.00
0.00	0.000000		
75	475.060541		0.00
0.00	0.000000		
<hr style="border-top: 1px dashed black;"/>			
Total	100.00	150,587.880796	408.50

Pollutant Name : CO

speed(mph)	Emission Factor(grams/mile)	Emissions by Speed	VMT by Speed
VMT-Speed Distribution (%)			
5	6.401178		0.00
0.00	0.000000		
10	5.303987		0.00
0.00	0.000000		
15	4.524254		0.00
0.00	0.000000		
20	3.959841		0.00
0.00	0.000000		
25	3.550922		0.00
0.00	0.000000		
30	3.242218		0.00
0.00	0.000000		
35	3.014628		40.85
10.00	123.147554		

Existing MSAT - Floral to Thompson

40		2.856859	347.23
85.00		991.972866	
45		2.770133	20.43
5.00		56.579967	
50		2.757814	0.00
0.00		0.000000	
55		2.843012	0.00
0.00		0.000000	
60		3.059510	0.00
0.00		0.000000	
65		3.478650	0.00
0.00		0.000000	
70		3.951430	0.00
0.00		0.000000	
75		4.776375	0.00
0.00		0.000000	

Total	100.00	1,171.700387	408.50

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.003853	0.00	0.00
0.00	0.000000		
10	0.002614	0.00	0.00
0.00	0.000000		
15	0.001851	0.00	0.00
0.00	0.000000		
20	0.001395	0.00	0.00
0.00	0.000000		
25	0.001123	0.00	0.00
0.00	0.000000		
30	0.000950	0.00	0.00
0.00	0.000000		
35	0.000845	40.85	40.85
10.00	0.034518		
40	0.000787	347.23	347.23
85.00	0.273266		
45	0.000775	20.43	20.43
5.00	0.015829		
50	0.000800	0.00	0.00
0.00	0.000000		
55	0.000871	0.00	0.00
0.00	0.000000		
60	0.000998	0.00	0.00
0.00	0.000000		
65	0.001207	0.00	0.00
0.00	0.000000		
70	0.001399	0.00	0.00
0.00	0.000000		
75	0.001705	0.00	0.00
0.00	0.000000		

Total	100.00	0.323614	408.50

Pollutant Name : BENZENE

Existing MSAT - Floral to Thompson

speed(mph)	Emi ssi on	Factor(grams/mi le)	VMT by Speed
VMT-Speed	Di stri buti on (%)	Emi ssi ons by Speed	
5		0.019285	0.00
0.00		0.000000	
10		0.012799	0.00
0.00		0.000000	
15		0.008764	0.00
0.00		0.000000	
20		0.006463	0.00
0.00		0.000000	
25		0.005204	0.00
0.00		0.000000	
30		0.004388	0.00
0.00		0.000000	
35		0.003882	40.85
10.00		0.158580	
40		0.003597	347.23
85.00		1.248968	
45		0.003527	20.43
5.00		0.072039	
50		0.003627	0.00
0.00		0.000000	
55		0.003941	0.00
0.00		0.000000	
60		0.004502	0.00
0.00		0.000000	
65		0.005432	0.00
0.00		0.000000	
70		0.006282	0.00
0.00		0.000000	
75		0.007621	0.00
0.00		0.000000	

Total			408.50
	100.00	1.479587	

Pollutant Name : ACROLEIN

speed(mph)	Emi ssi on	Factor(grams/mi le)	VMT by Speed
VMT-Speed	Di stri buti on (%)	Emi ssi ons by Speed	
5		0.000810	0.00
0.00		0.000000	
10		0.000559	0.00
0.00		0.000000	
15		0.000407	0.00
0.00		0.000000	
20		0.000311	0.00
0.00		0.000000	
25		0.000250	0.00
0.00		0.000000	
30		0.000212	0.00
0.00		0.000000	
35		0.000188	40.85
10.00		0.007680	
40		0.000176	347.23
85.00		0.061112	
45		0.000173	20.43
5.00		0.003534	
50		0.000179	0.00
0.00		0.000000	

Existing MSAT - Floral to Thompson

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	0.00	0.000195	0.000000	0.00
60	0.00	0.000223	0.000000	0.00
65	0.00	0.000269	0.000000	0.00
70	0.00	0.000310	0.000000	0.00
75	0.00	0.000377	0.000000	0.00
----- Total			0.072325	408.50

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.018245	0.00
10	0.010699	0.00
15	0.005798	0.00
20	0.003565	0.00
25	0.002900	0.00
30	0.002409	0.00
35	0.002062	40.85
40	0.001843	347.23
45	0.001750	20.43
50	0.001771	0.00
55	0.001917	0.00
60	0.002197	0.00
65	0.002634	0.00
70	0.003168	0.00
75	0.003909	0.00
----- Total		408.50
100.00	0.759912	

Idling Emissions (grams) (Currentl y NOT Avai l abl e)

Existing MSAT - Floral to Thompson

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
32.479888 0.052548 10.30

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.30

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.002472 0.000004 10.30

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.323884 0.000524 10.30

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.30

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.30

Existing MSAT - Floral to Thompson

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	90.141521	0.090142
0.000099364		
S02	1.417781	0.001418
0.000001563		
Di esel _PM	4.023725	0.004024
0.000004435		
PM2.5	8.395288	0.008395
0.000009254		
PM10	8.875868	0.008876
0.000009784		
NOX	246.104787	0.246105
0.000271284		
FORMALDEHYDE	2.016581	0.002017
0.000002223		
CO2	150,587.880796	150.587881
0.165994724		
CO	1,171.700387	1.171700
0.001291579		
BUTADIENE	0.326086	0.000326
0.000000359		
BENZENE	1.803471	0.001803
0.000001988		
ACROLEIN	0.072325	0.000072
0.000000080		
ACETALDEHYDE	0.759912	0.000760
0.000000838		

END

Existing MSAT - Highland to Floral

Title : Existing MSAT - Highland to Floral
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:35 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 462
 Volume (vph) : 0.5
 Road Length(mi) : 0.5
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55							10	85	5	
60										
65										
70										
>75										

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55										
60										
65										
70										
>75										

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	23.10
10.00	3.511893	
40	0.140204	196.35
85.00	27.529055	
45	0.135563	11.55
5.00	1.565753	
50	0.138677	0.00

Existing MSAT - Highland to Floral

Speed (mph)	MSAT	Factor	MSAT * Factor
55	0.00	0.149341	0.000000
60	0.00	0.170551	0.000000
65	0.00	0.202915	0.000000
70	0.00	0.231494	0.000000
75	0.00	0.273901	0.000000
----- Total			231.00
	100.00	32.606701	

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.010953	0.00
10	0.008595	0.00
15	0.007064	0.00
20	0.005110	0.00
25	0.004375	0.00
30	0.004521	0.00
35	0.003465	23.10
40	0.003465	196.35
45	0.003579	11.55
50	0.003579	0.00
55	0.003579	0.00
60	0.003427	0.00
65	0.004714	0.00
70	0.004521	0.00
75	0.004350	0.00
----- Total		
	0.801732	231.00
100.00		

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.046606	0.00
10	0.000000	

Existing MSAT - Highland to Floral

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	23.10
10.00		0.239062	
40		0.009801	196.35
85.00		1.924426	
45		0.009685	11.55
5.00		0.111862	
50		0.010186	0.00
0.00		0.000000	
55		0.011199	0.00
0.00		0.000000	
60		0.012961	0.00
0.00		0.000000	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	2.275350	231.00

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	0.00	
0.00	0.000000		
35	0.022626	23.10	
10.00	0.522661		
40	0.020332	196.35	
85.00	3.992188		
45	0.020134	11.55	
5.00	0.232548		
50	0.019701	0.00	
0.00	0.000000		
55	0.021498	0.00	
0.00	0.000000		
60	0.024417	0.00	
0.00	0.000000		
65	0.028253	0.00	

Existing MSAT - Highland to Floral

0.00	0.000000	
70	0.029829	0.00
0.00	0.000000	
75	0.033661	0.00
0.00	0.000000	

Total	4.747397	231.00
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.125053	0.00
0.00	0.000000	
10	0.083944	0.00
0.00	0.000000	
15	0.058164	0.00
0.00	0.000000	
20	0.042180	0.00
0.00	0.000000	
25	0.033617	0.00
0.00	0.000000	
30	0.027819	0.00
0.00	0.000000	
35	0.023780	23.10
10.00	0.549318	
40	0.021516	196.35
85.00	4.224667	
45	0.021227	11.55
5.00	0.245172	
50	0.021909	0.00
0.00	0.000000	
55	0.023269	0.00
0.00	0.000000	
60	0.025367	0.00
0.00	0.000000	
65	0.029506	0.00
0.00	0.000000	
70	0.033579	0.00
0.00	0.000000	
75	0.036169	0.00
0.00	0.000000	

Total	5.019156	231.00
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.252436	0.00
0.00	0.000000	
10	0.972427	0.00
0.00	0.000000	
15	0.790534	0.00
0.00	0.000000	
20	0.699718	0.00
0.00	0.000000	

Existing MSAT - Highland to Floral

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	23.10
10.00		14.063534	
40		0.601492	196.35
85.00		118.102954	
45		0.606208	11.55
5.00		7.001702	
50		0.621801	0.00
0.00		0.000000	
55		0.649943	0.00
0.00		0.000000	
60		0.695067	0.00
0.00		0.000000	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	139.168191	231.00

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	0.00	
0.00	0.000000		
35	0.005424	23.10	
10.00	0.125294		
40	0.004894	196.35	
85.00	0.960937		
45	0.004685	11.55	
5.00	0.054112		
50	0.004760	0.00	
0.00	0.000000		
55	0.005154	0.00	
0.00	0.000000		
60	0.005895	0.00	
0.00	0.000000		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Existing MSAT - Highland to Floral

Total	100.00	1.140343	231.00
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Pollutant Name : CO2

speed(mph)	Emission Factor(grams/mile)	Emissions by Speed	VMT by Speed
VMT-Speed Distribution (%)			
5	1,126.224879		0.00
0.00	0.000000		
10	858.457476		0.00
0.00	0.000000		
15	678.179737		0.00
0.00	0.000000		
20	556.043565		0.00
0.00	0.000000		
25	475.994821		0.00
0.00	0.000000		
30	421.934514		0.00
0.00	0.000000		
35	386.971628		23.10
10.00	8,939.044607		
40	366.997347		196.35
85.00	72,059.929083		
45	359.825507		11.55
5.00	4,155.984606		
50	364.751578		0.00
0.00	0.000000		
55	382.414289		0.00
0.00	0.000000		
60	414.925071		0.00
0.00	0.000000		
65	466.284807		0.00
0.00	0.000000		
70	469.756332		0.00
0.00	0.000000		
75	475.060541		0.00
0.00	0.000000		
<hr style="border-top: 1px dashed black;"/>			
Total		85,154.958296	231.00
	100.00		

Pollutant Name : CO

speed(mph)	Emission Factor(grams/mile)	Emissions by Speed	VMT by Speed
VMT-Speed Distribution (%)			
5	6.401178		0.00
0.00	0.000000		
10	5.303987		0.00
0.00	0.000000		
15	4.524254		0.00
0.00	0.000000		
20	3.959841		0.00
0.00	0.000000		
25	3.550922		0.00
0.00	0.000000		
30	3.242218		0.00
0.00	0.000000		
35	3.014628		23.10
10.00	69.637907		

Existing MSAT - Highland to Floral

40		2.856859	196.35
85.00		560.944265	
45		2.770133	11.55
5.00		31.995036	
50		2.757814	0.00
0.00		0.000000	
55		2.843012	0.00
0.00		0.000000	
60		3.059510	0.00
0.00		0.000000	
65		3.478650	0.00
0.00		0.000000	
70		3.951430	0.00
0.00		0.000000	
75		4.776375	0.00
0.00		0.000000	

Total	100.00	662.577208	231.00

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.003853	0.00	0.00
0.00	0.000000		
10	0.002614	0.00	0.00
0.00	0.000000		
15	0.001851	0.00	0.00
0.00	0.000000		
20	0.001395	0.00	0.00
0.00	0.000000		
25	0.001123	0.00	0.00
0.00	0.000000		
30	0.000950	0.00	0.00
0.00	0.000000		
35	0.000845	23.10	23.10
10.00	0.019520		
40	0.000787	196.35	196.35
85.00	0.154527		
45	0.000775	11.55	11.55
5.00	0.008951		
50	0.000800	0.00	0.00
0.00	0.000000		
55	0.000871	0.00	0.00
0.00	0.000000		
60	0.000998	0.00	0.00
0.00	0.000000		
65	0.001207	0.00	0.00
0.00	0.000000		
70	0.001399	0.00	0.00
0.00	0.000000		
75	0.001705	0.00	0.00
0.00	0.000000		

Total	100.00	0.182998	231.00

Pollutant Name : BENZENE

Existing MSAT - Highland to Floral

speed(mph)	Emi ssi on	Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed		
5		0.019285	0.00
0.00		0.000000	
10		0.012799	0.00
0.00		0.000000	
15		0.008764	0.00
0.00		0.000000	
20		0.006463	0.00
0.00		0.000000	
25		0.005204	0.00
0.00		0.000000	
30		0.004388	0.00
0.00		0.000000	
35		0.003882	23.10
10.00		0.089674	
40		0.003597	196.35
85.00		0.706271	
45		0.003527	11.55
5.00		0.040737	
50		0.003627	0.00
0.00		0.000000	
55		0.003941	0.00
0.00		0.000000	
60		0.004502	0.00
0.00		0.000000	
65		0.005432	0.00
0.00		0.000000	
70		0.006282	0.00
0.00		0.000000	
75		0.007621	0.00
0.00		0.000000	

Total			231.00
	100.00	0.836682	

Pollutant Name : ACROLEIN

speed(mph)	Emi ssi on	Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed		
5		0.000810	0.00
0.00		0.000000	
10		0.000559	0.00
0.00		0.000000	
15		0.000407	0.00
0.00		0.000000	
20		0.000311	0.00
0.00		0.000000	
25		0.000250	0.00
0.00		0.000000	
30		0.000212	0.00
0.00		0.000000	
35		0.000188	23.10
10.00		0.004343	
40		0.000176	196.35
85.00		0.034558	
45		0.000173	11.55
5.00		0.001998	
50		0.000179	0.00
0.00		0.000000	

Existing MSAT - Highland to Floral

Speed (mph)	Percentage	MSAT	Value
55	0.00	0.000195	0.00
60	0.00	0.000223	0.00
65	0.00	0.000269	0.00
70	0.00	0.000310	0.00
75	0.00	0.000377	0.00
----- Total			231.00
	100.00	0.040899	

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.018245	0.000000	0.00
10	0.010699	0.000000	0.00
15	0.005798	0.000000	0.00
20	0.003565	0.000000	0.00
25	0.002900	0.000000	0.00
30	0.002409	0.000000	0.00
35	0.002062	0.047632	23.10
40	0.001843	0.361873	196.35
45	0.001750	0.020213	11.55
50	0.001771	0.000000	0.00
55	0.001917	0.000000	0.00
60	0.002197	0.000000	0.00
65	0.002634	0.000000	0.00
70	0.003168	0.000000	0.00
75	0.003909	0.000000	0.00
----- Total			231.00
	100.00	0.429718	

Idling Emi ssi ons (grams) (Currentl y NOT Avai l abl e)

Existing MSAT - Highland to Floral

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
18.366840 0.052548 5.83

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 5.83

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.001398 0.000004 5.83

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.183151 0.000524 5.83

Pollutant Name : ACRYLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 5.83

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 5.83

Existing MSAT - Highland to Floral

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	50.973541	0.050974
0.000056189		
S02	0.801732	0.000802
0.000000884		
Di esel _PM	2.275350	0.002275
0.000002508		
PM2.5	4.747397	0.004747
0.000005233		
PM10	5.019156	0.005019
0.000005533		
NOX	139.168191	0.139168
0.000153407		
FORMALDEHYDE	1.140343	0.001140
0.000001257		
C02	85,154.958296	85.154958
0.093867274		
CO	662.577208	0.662577
0.000730366		
BUTADIENE	0.184396	0.000184
0.000000203		
BENZENE	1.019833	0.001020
0.000001124		
ACROLEIN	0.040899	0.000041
0.000000045		
ACETALDEHYDE	0.429718	0.000430
0.000000474		

END

Existing MSAT - Manning to Highland

Title : Existing MSAT - Manning to Highland
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:32 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 807
 Volume (vph) : 2.25
 Road Length(mi) :
 Number of Hours : 1
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 % 10 85 5

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	0.00
0.00	0.000000	
40	0.140204	181.58
10.00	25.457541	
45	0.135563	1,543.39
85.00	209.226240	
50	0.138677	90.79

Existing MSAT - Manning to Highland

Speed (mph)	MSAT	Factor	MT
5	0.00	12.590138	0.00
55	0.00	0.149341	0.00
60	0.00	0.000000	0.00
65	0.00	0.170551	0.00
65	0.00	0.000000	0.00
70	0.00	0.202915	0.00
70	0.00	0.000000	0.00
75	0.00	0.231494	0.00
75	0.00	0.000000	0.00
75	0.00	0.273901	0.00
75	0.00	0.000000	0.00
----- Total			1,815.75
	100.00	247.273919	

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010953	0.00	0.00
5	0.000000	0.00	0.00
10	0.008595	0.00	0.00
10	0.000000	0.00	0.00
15	0.007064	0.00	0.00
15	0.000000	0.00	0.00
20	0.005110	0.00	0.00
20	0.000000	0.00	0.00
25	0.004375	0.00	0.00
25	0.000000	0.00	0.00
30	0.004521	0.00	0.00
30	0.000000	0.00	0.00
35	0.003465	0.00	0.00
35	0.000000	0.00	0.00
40	0.003465	181.58	181.58
40	0.629157	1,543.39	1,543.39
45	0.003579	90.79	90.79
45	5.523784	90.79	90.79
50	0.003579	0.00	0.00
50	0.324928	0.00	0.00
55	0.003579	0.00	0.00
55	0.000000	0.00	0.00
60	0.003427	0.00	0.00
60	0.000000	0.00	0.00
65	0.004714	0.00	0.00
65	0.000000	0.00	0.00
70	0.004521	0.00	0.00
70	0.000000	0.00	0.00
75	0.004350	0.00	0.00
75	0.000000	0.00	0.00
----- Total			1,815.75
	100.00	6.477870	

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.046606	0.00	0.00
5	0.000000	0.00	0.00

Existing MSAT - Manning to Highland

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	0.00
0.00		0.000000	
40		0.009801	181.58
10.00		1.779617	
45		0.009685	1,543.39
85.00		14.947708	
50		0.010186	90.79
5.00		0.924761	
55		0.011199	0.00
0.00		0.000000	
60		0.012961	0.00
0.00		0.000000	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	17.652086	1,815.75

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	0.00	
0.00	0.000000		
35	0.022626	0.00	
0.00	0.000000		
40	0.020332	181.58	
10.00	3.691783		
45	0.020134	1,543.39	
85.00	31.074564		
50	0.019701	90.79	
5.00	1.788605		
55	0.021498	0.00	
0.00	0.000000		
60	0.024417	0.00	
0.00	0.000000		
65	0.028253	0.00	

Existing MSAT - Manning to Highland

0.00	0.000000	
70	0.029829	0.00
0.00	0.000000	
75	0.033661	0.00
0.00	0.000000	

Total	36.554951	1,815.75
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.125053	0.00
0.00	0.000000	
10	0.083944	0.00
0.00	0.000000	
15	0.058164	0.00
0.00	0.000000	
20	0.042180	0.00
0.00	0.000000	
25	0.033617	0.00
0.00	0.000000	
30	0.027819	0.00
0.00	0.000000	
35	0.023780	0.00
0.00	0.000000	
40	0.021516	181.58
10.00	3.906768	
45	0.021227	1,543.39
85.00	32.761486	
50	0.021909	90.79
5.00	1.989063	
55	0.023269	0.00
0.00	0.000000	
60	0.025367	0.00
0.00	0.000000	
65	0.029506	0.00
0.00	0.000000	
70	0.033579	0.00
0.00	0.000000	
75	0.036169	0.00
0.00	0.000000	

Total	38.657318	1,815.75
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.252436	0.00
0.00	0.000000	
10	0.972427	0.00
0.00	0.000000	
15	0.790534	0.00
0.00	0.000000	
20	0.699718	0.00
0.00	0.000000	

Existing MSAT - Manning to Highland

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	0.00
0.00		0.000000	
40		0.601492	181.58
10.00		109.215910	
45		0.606208	1,543.39
85.00		935.613850	
50		0.621801	90.79
5.00		56.451758	
55		0.649943	0.00
0.00		0.000000	
60		0.695067	0.00
0.00		0.000000	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	1,101.281518	1,815.75

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	0.00	
0.00	0.000000		
35	0.005424	0.00	
0.00	0.000000		
40	0.004894	181.58	
10.00	0.888628		
45	0.004685	1,543.39	
85.00	7.230770		
50	0.004760	90.79	
5.00	0.432149		
55	0.005154	0.00	
0.00	0.000000		
60	0.005895	0.00	
0.00	0.000000		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Total Existing MSAT - Manning to Highl and 1,815.75
 100.00 8.551547

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1,126.224879		0.00
0.00	0.000000		
10	858.457476		0.00
0.00	0.000000		
15	678.179737		0.00
0.00	0.000000		
20	556.043565		0.00
0.00	0.000000		
25	475.994821		0.00
0.00	0.000000		
30	421.934514		0.00
0.00	0.000000		
35	386.971628		0.00
0.00	0.000000		
40	366.997347		181.58
10.00	66,637.543282		
45	359.825507		1,543.39
85.00	555,350.189685		
50	364.751578		90.79
5.00	33,114.883888		
55	382.414289		0.00
0.00	0.000000		
60	414.925071		0.00
0.00	0.000000		
65	466.284807		0.00
0.00	0.000000		
70	469.756332		0.00
0.00	0.000000		
75	475.060541		0.00
0.00	0.000000		

Total		655,102.616854	1,815.75
100.00			

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	6.401178		0.00
0.00	0.000000		
10	5.303987		0.00
0.00	0.000000		
15	4.524254		0.00
0.00	0.000000		
20	3.959841		0.00
0.00	0.000000		
25	3.550922		0.00
0.00	0.000000		
30	3.242218		0.00
0.00	0.000000		
35	3.014628		0.00
0.00	0.000000		

Existing MSAT - Manning to Highland

40		2.856859	181.58
10.00		518.734173	
45		2.770133	1,543.39
85.00		4,275.388646	
50		2.757814	90.79
5.00		250.375039	
55		2.843012	0.00
0.00		0.000000	
60		3.059510	0.00
0.00		0.000000	
65		3.478650	0.00
0.00		0.000000	
70		3.951430	0.00
0.00		0.000000	
75		4.776375	0.00
0.00		0.000000	

Total	100.00	5,044.497857	1,815.75

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.003853	0.00	0.00
0.00	0.000000		
10	0.002614	0.00	0.00
0.00	0.000000		
15	0.001851	0.00	0.00
0.00	0.000000		
20	0.001395	0.00	0.00
0.00	0.000000		
25	0.001123	0.00	0.00
0.00	0.000000		
30	0.000950	0.00	0.00
0.00	0.000000		
35	0.000845	0.00	0.00
0.00	0.000000		
40	0.000787	181.58	
10.00	0.142900		
45	0.000775	1,543.39	
85.00	1.196125		
50	0.000800	90.79	
5.00	0.072630		
55	0.000871	0.00	
0.00	0.000000		
60	0.000998	0.00	
0.00	0.000000		
65	0.001207	0.00	
0.00	0.000000		
70	0.001399	0.00	
0.00	0.000000		
75	0.001705	0.00	
0.00	0.000000		

Total	100.00	1.411655	1,815.75

Pollutant Name : BENZENE

Existing MSAT - Manning to Highl and

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.019285		0.00
0.00	0.000000		
10	0.012799		0.00
0.00	0.000000		
15	0.008764		0.00
0.00	0.000000		
20	0.006463		0.00
0.00	0.000000		
25	0.005204		0.00
0.00	0.000000		
30	0.004388		0.00
0.00	0.000000		
35	0.003882		0.00
0.00	0.000000		
40	0.003597		181.58
10.00	0.653125		
45	0.003527		1,543.39
85.00	5.443528		
50	0.003627		90.79
5.00	0.329286		
55	0.003941		0.00
0.00	0.000000		
60	0.004502		0.00
0.00	0.000000		
65	0.005432		0.00
0.00	0.000000		
70	0.006282		0.00
0.00	0.000000		
75	0.007621		0.00
0.00	0.000000		

Total			1,815.75
	100.00	6.425939	

Po ll utant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000810		0.00
0.00	0.000000		
10	0.000559		0.00
0.00	0.000000		
15	0.000407		0.00
0.00	0.000000		
20	0.000311		0.00
0.00	0.000000		
25	0.000250		0.00
0.00	0.000000		
30	0.000212		0.00
0.00	0.000000		
35	0.000188		0.00
0.00	0.000000		
40	0.000176		181.58
10.00	0.031957		
45	0.000173		1,543.39
85.00	0.267006		
50	0.000179		90.79
5.00	0.016251		

Existing MSAT - Manning to Highland

55		0.000195	0.00
0.00		0.000000	
60		0.000223	0.00
0.00		0.000000	
65		0.000269	0.00
0.00		0.000000	
70		0.000310	0.00
0.00		0.000000	
75		0.000377	0.00
0.00		0.000000	
<hr/>			
Total	100.00	0.315214	1,815.75

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.018245	0.00	0.00
0.00	0.000000		
10	0.010699	0.00	0.00
0.00	0.000000		
15	0.005798	0.00	0.00
0.00	0.000000		
20	0.003565	0.00	0.00
0.00	0.000000		
25	0.002900	0.00	0.00
0.00	0.000000		
30	0.002409	0.00	0.00
0.00	0.000000		
35	0.002062	0.00	0.00
0.00	0.000000		
40	0.001843	181.58	
10.00	0.334643		
45	0.001750	1,543.39	
85.00	2.700928		
50	0.001771	90.79	
5.00	0.160785		
55	0.001917	0.00	0.00
0.00	0.000000		
60	0.002197	0.00	0.00
0.00	0.000000		
65	0.002634	0.00	0.00
0.00	0.000000		
70	0.003168	0.00	0.00
0.00	0.000000		
75	0.003909	0.00	0.00
0.00	0.000000		
<hr/>			
Total	100.00	3.196356	1,815.75

Idling Emi ssi ons (grams) (Currentl y NOT Avai l abl e)

Existing MSAT - Manning to High and

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
128.172848 0.052548 40.65

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 40.65

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.009757 0.000004 40.65

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
1.278119 0.000524 40.65

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 40.65

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 40.65

Existing MSAT - Manning to Highland

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	375.446767	0.375447
0.000413859		
S02	6.477870	0.006478
0.000007141		
Di esel _PM	17.652086	0.017652
0.000019458		
PM2.5	36.554951	0.036555
0.000040295		
PM10	38.657318	0.038657
0.000042612		
NOX	1,101.281518	1.101282
0.001213955		
FORMALDEHYDE	8.551547	0.008552
0.000009426		
C02	655,102.616854	655.102617
0.722127024		
CO	5,044.497857	5.044498
0.005560607		
BUTADIENE	1.421411	0.001421
0.000001567		
BENZENE	7.704058	0.007704
0.000008492		
ACROLEIN	0.315214	0.000315
0.000000347		
ACETALDEHYDE	3.196356	0.003196
0.000003523		

END

Existing MSAT - Merced to Manning

Title : Existing MSAT - Merced to Manning
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:29 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 587
 Volume (vph) : 2.25
 Road Length(mi) : 1

VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 % 10 85

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours : 5

VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	0.00
0.00	0.000000	
40	0.140204	0.00
0.00	0.000000	
45	0.135563	132.08
10.00	17.904483	
50	0.138677	1,122.64

Existing MSAT - Merced to Manning

Speed (mph)	MSAT	Factor	MSAT * Factor
85.00	155.684001		
55	0.149341		66.04
5.00	9.862106		
60	0.170551		0.00
0.00	0.000000		
65	0.202915		0.00
0.00	0.000000		
70	0.231494		0.00
0.00	0.000000		
75	0.273901		0.00
0.00	0.000000		
<hr/>			
Total	100.00	183.450590	1,320.75

Pollutant Name : S02

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010953		0.00
0.00	0.000000		
10	0.008595		0.00
0.00	0.000000		
15	0.007064		0.00
0.00	0.000000		
20	0.005110		0.00
0.00	0.000000		
25	0.004375		0.00
0.00	0.000000		
30	0.004521		0.00
0.00	0.000000		
35	0.003465		0.00
0.00	0.000000		
40	0.003465		0.00
0.00	0.000000		
45	0.003579		132.08
10.00	0.472696		
50	0.003579		1,122.64
85.00	4.017920		
55	0.003579		66.04
5.00	0.236348		
60	0.003427		0.00
0.00	0.000000		
65	0.004714		0.00
0.00	0.000000		
70	0.004521		0.00
0.00	0.000000		
75	0.004350		0.00
0.00	0.000000		
<hr/>			
Total	100.00	4.726964	1,320.75

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.046606		0.00
0.00	0.000000		

Existing MSAT - Merced to Manning

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	0.00
0.00		0.000000	
40		0.009801	0.00
0.00		0.000000	
45		0.009685	132.08
10.00		1.279146	
50		0.010186	1,122.64
85.00		11.435186	
55		0.011199	66.04
5.00		0.739554	
60		0.012961	0.00
0.00		0.000000	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	13.453886	1,320.75

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	0.00	
0.00	0.000000		
35	0.022626	0.00	
0.00	0.000000		
40	0.020332	0.00	
0.00	0.000000		
45	0.020134	132.08	
10.00	2.659198		
50	0.019701	1,122.64	
85.00	22.117081		
55	0.021498	66.04	
5.00	1.419674		
60	0.024417	0.00	
0.00	0.000000		
65	0.028253	0.00	

Existing MSAT - Merced to Manning

0.00	0.000000	
70	0.029829	0.00
0.00	0.000000	
75	0.033661	0.00
0.00	0.000000	

Total	26.195954	1,320.75
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.125053	0.00
0.00	0.000000	
10	0.083944	0.00
0.00	0.000000	
15	0.058164	0.00
0.00	0.000000	
20	0.042180	0.00
0.00	0.000000	
25	0.033617	0.00
0.00	0.000000	
30	0.027819	0.00
0.00	0.000000	
35	0.023780	0.00
0.00	0.000000	
40	0.021516	0.00
0.00	0.000000	
45	0.021227	132.08
10.00	2.803556	
50	0.021909	1,122.64
85.00	24.595865	
55	0.023269	66.04
5.00	1.536627	
60	0.025367	0.00
0.00	0.000000	
65	0.029506	0.00
0.00	0.000000	
70	0.033579	0.00
0.00	0.000000	
75	0.036169	0.00
0.00	0.000000	

Total	28.936048	1,320.75
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.252436	0.00
0.00	0.000000	
10	0.972427	0.00
0.00	0.000000	
15	0.790534	0.00
0.00	0.000000	
20	0.699718	0.00
0.00	0.000000	

Existing MSAT - Merced to Manning

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	0.00
0.00		0.000000	
40		0.601492	0.00
0.00		0.000000	
45		0.606208	132.08
10.00		80.064922	
50		0.621801	1,122.64
85.00		698.057120	
55		0.649943	66.04
5.00		42.920611	
60		0.695067	0.00
0.00		0.000000	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	821.042653	1,320.75

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	0.00	
0.00	0.000000		
35	0.005424	0.00	
0.00	0.000000		
40	0.004894	0.00	
0.00	0.000000		
45	0.004685	132.08	
10.00	0.618771		
50	0.004760	1,122.64	
85.00	5.343755		
55	0.005154	66.04	
5.00	0.340357		
60	0.005895	0.00	
0.00	0.000000		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Existing MSAT - Merced to Manning

Total	100.00	6.302883	1,320.75
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Pollutant Name : CO2

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	1,126.224879	0.00
0.00	0.000000	
10	858.457476	0.00
0.00	0.000000	
15	678.179737	0.00
0.00	0.000000	
20	556.043565	0.00
0.00	0.000000	
25	475.994821	0.00
0.00	0.000000	
30	421.934514	0.00
0.00	0.000000	
35	386.971628	0.00
0.00	0.000000	
40	366.997347	0.00
0.00	0.000000	
45	359.825507	132.08
10.00	47,523.953837	
50	364.751578	1,122.64
85.00	409,483.799647	
55	382.414289	66.04
5.00	25,253.683610	
60	414.925071	0.00
0.00	0.000000	
65	466.284807	0.00
0.00	0.000000	
70	469.756332	0.00
0.00	0.000000	
75	475.060541	0.00
0.00	0.000000	
<hr style="border-top: 1px dashed black;"/>		
Total	482,261.437094	1,320.75
	100.00	

Pollutant Name : CO

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	6.401178	0.00
0.00	0.000000	
10	5.303987	0.00
0.00	0.000000	
15	4.524254	0.00
0.00	0.000000	
20	3.959841	0.00
0.00	0.000000	
25	3.550922	0.00
0.00	0.000000	
30	3.242218	0.00
0.00	0.000000	
35	3.014628	0.00
0.00	0.000000	

Existing MSAT - Merced to Manning

40		2.856859	0.00
0.00		0.000000	
45		2.770133	132.08
10.00		365.865316	
50		2.757814	1,122.64
85.00		3,096.025414	
55		2.843012	66.04
5.00		187.745405	
60		3.059510	0.00
0.00		0.000000	
65		3.478650	0.00
0.00		0.000000	
70		3.951430	0.00
0.00		0.000000	
75		4.776375	0.00
0.00		0.000000	

Total	100.00	3,649.636135	1,320.75

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.003853	0.00	0.00
0.00	0.000000		
10	0.002614	0.00	0.00
0.00	0.000000		
15	0.001851	0.00	0.00
0.00	0.000000		
20	0.001395	0.00	0.00
0.00	0.000000		
25	0.001123	0.00	0.00
0.00	0.000000		
30	0.000950	0.00	0.00
0.00	0.000000		
35	0.000845	0.00	0.00
0.00	0.000000		
40	0.000787	0.00	0.00
0.00	0.000000		
45	0.000775	132.08	132.08
10.00	0.102358		
50	0.000800	1,122.64	1,122.64
85.00	0.898110		
55	0.000871	66.04	66.04
5.00	0.057519		
60	0.000998	0.00	0.00
0.00	0.000000		
65	0.001207	0.00	0.00
0.00	0.000000		
70	0.001399	0.00	0.00
0.00	0.000000		
75	0.001705	0.00	0.00
0.00	0.000000		

Total	100.00	1.057987	1,320.75

Pollutant Name : BENZENE

Existing MSAT - Merced to Manning		VMT by Speed	
speed(mph)	Emission Factor(grams/mile)	Emissions by Speed	VMT by Speed
VMT-Speed Distribution (%)			
5	0.019285	0.000000	0.00
0.00	0.000000		
10	0.012799	0.000000	0.00
0.00	0.000000		
15	0.008764	0.000000	0.00
0.00	0.000000		
20	0.006463	0.000000	0.00
0.00	0.000000		
25	0.005204	0.000000	0.00
0.00	0.000000		
30	0.004388	0.000000	0.00
0.00	0.000000		
35	0.003882	0.000000	0.00
0.00	0.000000		
40	0.003597	0.000000	0.00
0.00	0.000000		
45	0.003527	0.465829	132.08
10.00	0.003627		
50	4.071806	1,122.64	
85.00	0.003941		
55	0.260254	66.04	
5.00	0.004502		
60	0.000000	0.00	
0.00	0.000000		
65	0.005432	0.00	
0.00	0.000000		
70	0.006282	0.00	
0.00	0.000000		
75	0.007621	0.00	
0.00	0.000000		

Total		4.797889	1,320.75
100.00			

Pollutant Name : ACROLEIN

Existing MSAT - Merced to Manning		VMT by Speed	
speed(mph)	Emission Factor(grams/mile)	Emissions by Speed	VMT by Speed
VMT-Speed Distribution (%)			
5	0.000810	0.000000	0.00
0.00	0.000000		
10	0.000559	0.000000	0.00
0.00	0.000000		
15	0.000407	0.000000	0.00
0.00	0.000000		
20	0.000311	0.000000	0.00
0.00	0.000000		
25	0.000250	0.000000	0.00
0.00	0.000000		
30	0.000212	0.000000	0.00
0.00	0.000000		
35	0.000188	0.000000	0.00
0.00	0.000000		
40	0.000176	0.000000	0.00
0.00	0.000000		
45	0.000173	0.022849	132.08
10.00	0.000179		
50	0.200952	1,122.64	
85.00			

Existing MSAT - Merced to Manning

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	5.00	0.000195	0.012877	66.04
60	0.00	0.000223	0.000000	0.00
65	0.00	0.000269	0.000000	0.00
70	0.00	0.000310	0.000000	0.00
75	0.00	0.000377	0.000000	0.00
Total				1,320.75
100.00		0.236678		

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.018245	0.00
10	0.010699	0.00
15	0.005798	0.00
20	0.003565	0.00
25	0.002900	0.00
30	0.002409	0.00
35	0.002062	0.00
40	0.001843	0.00
45	0.001750	132.08
50	0.001771	1,122.64
55	0.001917	66.04
60	0.002197	0.00
65	0.002634	0.00
70	0.003168	0.00
75	0.003909	0.00
Total		
100.00	2.345916	1,320.75

Idling Emissions (grams) (Currently NOT Available)

Existing MSAT - Merced to Manning

 Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
 Emission Factor(grams/min) total running time(hrs)
 Emissions
 83.830135 0.052548 26.59

Pollutant Name : FORMALDEHYDE
 Emission Factor(grams/min) total running time(hrs)
 Emissions
 0.000000 0.000000 26.59

Pollutant Name : BUTADIENE
 Emission Factor(grams/min) total running time(hrs)
 Emissions
 0.006381 0.000004 26.59

Pollutant Name : BENZENE
 Emission Factor(grams/min) total running time(hrs)
 Emissions
 0.835940 0.000524 26.59

Pollutant Name : ACROLEIN
 Emission Factor(grams/min) total running time(hrs)
 Emissions
 0.000000 0.000000 26.59

Pollutant Name : ACETALDEHYDE
 Emission Factor(grams/min) total running time(hrs)
 Emissions
 0.000000 0.000000 26.59

Existing MSAT - Merced to Manning

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	267.280725	0.267281
0.000294627		
S02	4.726964	0.004727
0.000005211		
Di esel _PM	13.453886	0.013454
0.000014830		
PM2.5	26.195954	0.026196
0.000028876		
PM10	28.936048	0.028936
0.000031897		
NOX	821.042653	0.821043
0.000905045		
FORMALDEHYDE	6.302883	0.006303
0.000006948		
C02	482,261.437094	482.261437
0.531602237		
CO	3,649.636135	3.649636
0.004023035		
BUTADIENE	1.064368	0.001064
0.000001173		
BENZENE	5.633829	0.005634
0.000006210		
ACROLEIN	0.236678	0.000237
0.000000261		
ACETALDEHYDE	2.345916	0.002346
0.000002586		

END

Existing MSAT - Mountain View to Sierra

Title : Existing MSAT - Mountain View to Sierra
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:43 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 386
 Volume (vph) : 2.75
 Road Length(mi) :
 Number of Hours : 1
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 85 5

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 85 5

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	0.00
0.00	0.000000	
40	0.140204	0.00
0.00	0.000000	
45	0.135563	0.00
0.00	0.000000	
50	0.138677	106.15

Existing MSAT - Mountain View to Sierra

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
10	0.00	0.149341	0.000000	0.00
55	85.00	134.746651	902.28	902.28
60	5.00	9.051994	53.08	53.08
65	0.00	0.202915	0.00	0.00
70	0.00	0.000000	0.00	0.00
75	0.00	0.231494	0.00	0.00
	0.00	0.000000	0.00	0.00
----- Total			158.519209	1,061.50

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010953	0.00	0.00
0.00	0.000000		
10	0.008595	0.00	0.00
0.00	0.000000		
15	0.007064	0.00	0.00
0.00	0.000000		
20	0.005110	0.00	0.00
0.00	0.000000		
25	0.004375	0.00	0.00
0.00	0.000000		
30	0.004521	0.00	0.00
0.00	0.000000		
35	0.003465	0.00	0.00
0.00	0.000000		
40	0.003465	0.00	0.00
0.00	0.000000		
45	0.003579	0.00	0.00
0.00	0.000000		
50	0.003579	106.15	106.15
10.00	0.379911		
55	0.003579	902.28	902.28
85.00	3.229242		
60	0.003427	53.08	53.08
5.00	0.181888		
65	0.004714	0.00	0.00
0.00	0.000000		
70	0.004521	0.00	0.00
0.00	0.000000		
75	0.004350	0.00	0.00
0.00	0.000000		
----- Total			3.791041

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.046606	0.00	0.00
0.00	0.000000		

Existing MSAT - Mountain View to Sierra

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	0.00
0.00		0.000000	
40		0.009801	0.00
0.00		0.000000	
45		0.009685	0.00
0.00		0.000000	
50		0.010186	106.15
10.00		1.081244	
55		0.011199	902.28
85.00		10.104578	
60		0.012961	53.08
5.00		0.687905	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	11.873727	1,061.50

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	0.00	
0.00	0.000000		
35	0.022626	0.00	
0.00	0.000000		
40	0.020332	0.00	
0.00	0.000000		
45	0.020134	0.00	
0.00	0.000000		
50	0.019701	106.15	
10.00	2.091261		
55	0.021498	902.28	
85.00	19.397108		
60	0.024417	53.08	
5.00	1.295932		
65	0.028253	0.00	

Existing MSAT - Mountain View to Sierra

0.00	0.000000	
70	0.029829	0.00
0.00	0.000000	
75	0.033661	0.00
0.00	0.000000	

Total	22.784301	1,061.50
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.125053	0.00
0.00	0.000000	
10	0.083944	0.00
0.00	0.000000	
15	0.058164	0.00
0.00	0.000000	
20	0.042180	0.00
0.00	0.000000	
25	0.033617	0.00
0.00	0.000000	
30	0.027819	0.00
0.00	0.000000	
35	0.023780	0.00
0.00	0.000000	
40	0.021516	0.00
0.00	0.000000	
45	0.021227	0.00
0.00	0.000000	
50	0.021909	106.15
10.00	2.325640	
55	0.023269	902.28
85.00	20.995037	
60	0.025367	53.08
5.00	1.346354	
65	0.029506	0.00
0.00	0.000000	
70	0.033579	0.00
0.00	0.000000	
75	0.036169	0.00
0.00	0.000000	

Total	24.667031	1,061.50
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.252436	0.00
0.00	0.000000	
10	0.972427	0.00
0.00	0.000000	
15	0.790534	0.00
0.00	0.000000	
20	0.699718	0.00
0.00	0.000000	

Existing MSAT - Mountain View to Sierra

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	0.00
0.00		0.000000	
40		0.601492	0.00
0.00		0.000000	
45		0.606208	0.00
0.00		0.000000	
50		0.621801	106.15
10.00		66.004176	
55		0.649943	902.28
85.00		586.427320	
60		0.695067	53.08
5.00		36.890681	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	689.322178	1,061.50

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	0.00	
0.00	0.000000		
35	0.005424	0.00	
0.00	0.000000		
40	0.004894	0.00	
0.00	0.000000		
45	0.004685	0.00	
0.00	0.000000		
50	0.004760	106.15	
10.00	0.505274		
55	0.005154	902.28	
85.00	4.650325		
60	0.005895	53.08	
5.00	0.312877		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Existing MSAT - Mountain View to Sierra

Total 100.00 5.468476 1,061.50

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1,126.224879		0.00
0.00	0.000000		
10	858.457476		0.00
0.00	0.000000		
15	678.179737		0.00
0.00	0.000000		
20	556.043565		0.00
0.00	0.000000		
25	475.994821		0.00
0.00	0.000000		
30	421.934514		0.00
0.00	0.000000		
35	386.971628		0.00
0.00	0.000000		
40	366.997347		0.00
0.00	0.000000		
45	359.825507		0.00
0.00	0.000000		
50	364.751578		106.15
10.00	38,718.380005		
55	382.414289		902.28
85.00	345,042.852607		
60	414.925071		53.08
5.00	22,022.148143		
65	466.284807		0.00
0.00	0.000000		
70	469.756332		0.00
0.00	0.000000		
75	475.060541		0.00
0.00	0.000000		

Total		405,783.380756	1,061.50
100.00			

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	6.401178		0.00
0.00	0.000000		
10	5.303987		0.00
0.00	0.000000		
15	4.524254		0.00
0.00	0.000000		
20	3.959841		0.00
0.00	0.000000		
25	3.550922		0.00
0.00	0.000000		
30	3.242218		0.00
0.00	0.000000		
35	3.014628		0.00
0.00	0.000000		

Existing MSAT - Mountain View to Sierra

40		2.856859	0.00
0.00		0.000000	
45		2.770133	0.00
0.00		0.000000	
50		2.757814	106.15
10.00		292.741956	
55		2.843012	902.28
85.00		2,565.178652	
60		3.059510	53.08
5.00		162.383493	
65		3.478650	0.00
0.00		0.000000	
70		3.951430	0.00
0.00		0.000000	
75		4.776375	0.00
0.00		0.000000	

Total	100.00	3,020.304102	1,061.50

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.003853	0.00	0.00
0.00	0.000000		
10	0.002614	0.00	0.00
0.00	0.000000		
15	0.001851	0.00	0.00
0.00	0.000000		
20	0.001395	0.00	0.00
0.00	0.000000		
25	0.001123	0.00	0.00
0.00	0.000000		
30	0.000950	0.00	0.00
0.00	0.000000		
35	0.000845	0.00	0.00
0.00	0.000000		
40	0.000787	0.00	0.00
0.00	0.000000		
45	0.000775	0.00	0.00
0.00	0.000000		
50	0.000800	106.15	106.15
10.00	0.084920		
55	0.000871	902.28	902.28
85.00	0.785882		
60	0.000998	53.08	53.08
5.00	0.052969		
65	0.001207	0.00	0.00
0.00	0.000000		
70	0.001399	0.00	0.00
0.00	0.000000		
75	0.001705	0.00	0.00
0.00	0.000000		

Total	100.00	0.923770	1,061.50

Pollutant Name : BENZENE

Existing MSAT - Mountain View to Sierra

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.019285	0.00
0.00	0.000000	
10	0.012799	0.00
0.00	0.000000	
15	0.008764	0.00
0.00	0.000000	
20	0.006463	0.00
0.00	0.000000	
25	0.005204	0.00
0.00	0.000000	
30	0.004388	0.00
0.00	0.000000	
35	0.003882	0.00
0.00	0.000000	
40	0.003597	0.00
0.00	0.000000	
45	0.003527	0.00
0.00	0.000000	
50	0.003627	106.15
10.00	0.385006	
55	0.003941	902.28
85.00	3.555866	
60	0.004502	53.08
5.00	0.238944	
65	0.005432	0.00
0.00	0.000000	
70	0.006282	0.00
0.00	0.000000	
75	0.007621	0.00
0.00	0.000000	

Total		1,061.50
100.00	4.179815	

Pollutant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.000810	0.00
0.00	0.000000	
10	0.000559	0.00
0.00	0.000000	
15	0.000407	0.00
0.00	0.000000	
20	0.000311	0.00
0.00	0.000000	
25	0.000250	0.00
0.00	0.000000	
30	0.000212	0.00
0.00	0.000000	
35	0.000188	0.00
0.00	0.000000	
40	0.000176	0.00
0.00	0.000000	
45	0.000173	0.00
0.00	0.000000	
50	0.000179	106.15
10.00	0.019001	

Existing MSAT - Mountain View to Sierra

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	85.00	0.000195	0.175944	902.28
60	5.00	0.000223	0.011836	53.08
65	0.00	0.000269	0.000000	0.00
70	0.00	0.000310	0.000000	0.00
75	0.00	0.000377	0.000000	0.00
Total				1,061.50
100.00		0.206780		

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.018245	0.00
10	0.010699	0.00
15	0.005798	0.00
20	0.003565	0.00
25	0.002900	0.00
30	0.002409	0.00
35	0.002062	0.00
40	0.001843	0.00
45	0.001750	0.00
50	0.001771	106.15
55	0.001917	902.28
60	0.002197	53.08
65	0.002634	0.00
70	0.003168	0.00
75	0.003909	0.00
Total		
100.00	2.034259	1,061.50

Idling Emissions (grams) (Currently NOT Available)

Existing MSAT - Mountain View to Sierra

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
61.205546 0.052548 19.41

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 19.41

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.004659 0.000004 19.41

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.610332 0.000524 19.41

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 19.41

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 19.41

Existing MSAT - Mountain View to Sierra
 Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	219.724754	0.219725
0.000242205		
S02	3.791041	0.003791
0.000004179		
Di esel _PM	11.873727	0.011874
0.000013089		
PM2.5	22.784301	0.022784
0.000025115		
PM10	24.667031	0.024667
0.000027191		
NOX	689.322178	0.689322
0.000759848		
FORMALDEHYDE	5.468476	0.005468
0.000006028		
C02	405,783.380756	405.783381
0.447299610		
CO	3,020.304102	3.020304
0.003329315		
BUTADIENE	0.928429	0.000928
0.000001023		
BENZENE	4.790147	0.004790
0.000005280		
ACROLEIN	0.206780	0.000207
0.000000228		
ACETALDEHYDE	2.034259	0.002034
0.000002242		

END

Existing MSAT - Sierra to Draper

Title : Existing MSAT - Sierra to Draper
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:45 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 286
 Volume (vph) : 0.5
 Road Length(mi) : 0.5
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55							10	85	5	
60										
65										
70										
>75										

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55										
60										
65										
70										
>75										

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed	Di stributi on (%)	Emi ssi ons by Speed
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	14.30
10.00	2.478204	
35	0.152030	121.55
85.00	18.479247	
40	0.140204	7.15
5.00	1.002459	
45	0.135563	0.00
0.00	0.000000	
50	0.138677	0.00

Existing MSAT - Sierra to Draper

Speed (mph)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.149341	0.000000	0.00			
60	0.00	0.170551	0.000000	0.00			
65	0.00	0.202915	0.000000	0.00			
70	0.00	0.231494	0.000000	0.00			
75	0.00	0.273901	0.000000	0.00			

Total	100.00	21.959909		143.00			

Pollutant Name : S02

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010953	0.00	0.00
0.00	0.000000		
10	0.008595	0.00	0.00
0.00	0.000000		
15	0.007064	0.00	0.00
0.00	0.000000		
20	0.005110	0.00	0.00
0.00	0.000000		
25	0.004375	0.00	0.00
0.00	0.000000		
30	0.004521	14.30	14.30
10.00	0.064650		
35	0.003465	121.55	121.55
85.00	0.421171		
40	0.003465	7.15	7.15
5.00	0.024775		
45	0.003579	0.00	0.00
0.00	0.000000		
50	0.003579	0.00	0.00
0.00	0.000000		
55	0.003579	0.00	0.00
0.00	0.000000		
60	0.003427	0.00	0.00
0.00	0.000000		
65	0.004714	0.00	0.00
0.00	0.000000		
70	0.004521	0.00	0.00
0.00	0.000000		
75	0.004350	0.00	0.00
0.00	0.000000		

Total	100.00	0.510596	143.00

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.046606	0.00	0.00
0.00	0.000000		

Existing MSAT - Sierra to Draper

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	14.30
10.00		0.166366	
35		0.010349	121.55
85.00		1.257921	
40		0.009801	7.15
5.00		0.070077	
45		0.009685	0.00
0.00		0.000000	
50		0.010186	0.00
0.00		0.000000	
55		0.011199	0.00
0.00		0.000000	
60		0.012961	0.00
0.00		0.000000	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	1.494364	143.00

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	14.30	
10.00	0.372186		
35	0.022626	121.55	
85.00	2.750190		
40	0.020332	7.15	
5.00	0.145374		
45	0.020134	0.00	
0.00	0.000000		
50	0.019701	0.00	
0.00	0.000000		
55	0.021498	0.00	
0.00	0.000000		
60	0.024417	0.00	
0.00	0.000000		
65	0.028253	0.00	

Existing MSAT - Sierra to Draper

0.00	0.000000	
70	0.029829	0.00
0.00	0.000000	
75	0.033661	0.00
0.00	0.000000	

Total	3.267750	143.00
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.125053	0.00
0.00	0.000000	
10	0.083944	0.00
0.00	0.000000	
15	0.058164	0.00
0.00	0.000000	
20	0.042180	0.00
0.00	0.000000	
25	0.033617	0.00
0.00	0.000000	
30	0.027819	14.30
10.00	0.397812	
35	0.023780	121.55
85.00	2.890459	
40	0.021516	7.15
5.00	0.153839	
45	0.021227	0.00
0.00	0.000000	
50	0.021909	0.00
0.00	0.000000	
55	0.023269	0.00
0.00	0.000000	
60	0.025367	0.00
0.00	0.000000	
65	0.029506	0.00
0.00	0.000000	
70	0.033579	0.00
0.00	0.000000	
75	0.036169	0.00
0.00	0.000000	

Total	3.442110	143.00
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.252436	0.00
0.00	0.000000	
10	0.972427	0.00
0.00	0.000000	
15	0.790534	0.00
0.00	0.000000	
20	0.699718	0.00
0.00	0.000000	

Existing MSAT - Sierra to Draper

25		0.656037	0.00
0.00		0.000000	
30		0.625757	14.30
10.00		8.948325	
35		0.608811	121.55
85.00		74.000977	
40		0.601492	7.15
5.00		4.300668	
45		0.606208	0.00
0.00		0.000000	
50		0.621801	0.00
0.00		0.000000	
55		0.649943	0.00
0.00		0.000000	
60		0.695067	0.00
0.00		0.000000	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	87.249970	143.00

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	
0.00	0.000000		
10	0.025319	0.00	
0.00	0.000000		
15	0.014437	0.00	
0.00	0.000000		
20	0.009295	0.00	
0.00	0.000000		
25	0.007537	0.00	
0.00	0.000000		
30	0.006283	14.30	
10.00	0.089847		
35	0.005424	121.55	
85.00	0.659287		
40	0.004894	7.15	
5.00	0.034992		
45	0.004685	0.00	
0.00	0.000000		
50	0.004760	0.00	
0.00	0.000000		
55	0.005154	0.00	
0.00	0.000000		
60	0.005895	0.00	
0.00	0.000000		
65	0.007074	0.00	
0.00	0.000000		
70	0.008391	0.00	
0.00	0.000000		
75	0.010277	0.00	
0.00	0.000000		

Existing MSAT - Sierra to Draper

Total 100.00 0.784126 143.00

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1,126.224879		0.00
0.00	0.000000		
10	858.457476		0.00
0.00	0.000000		
15	678.179737		0.00
0.00	0.000000		
20	556.043565		0.00
0.00	0.000000		
25	475.994821		0.00
0.00	0.000000		
30	421.934514		14.30
10.00	6,033.663550		
35	386.971628		121.55
85.00	47,036.401383		
40	366.997347		7.15
5.00	2,624.031031		
45	359.825507		0.00
0.00	0.000000		
50	364.751578		0.00
0.00	0.000000		
55	382.414289		0.00
0.00	0.000000		
60	414.925071		0.00
0.00	0.000000		
65	466.284807		0.00
0.00	0.000000		
70	469.756332		0.00
0.00	0.000000		
75	475.060541		0.00
0.00	0.000000		

Total	55,694.095965		143.00
100.00			

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	6.401178		0.00
0.00	0.000000		
10	5.303987		0.00
0.00	0.000000		
15	4.524254		0.00
0.00	0.000000		
20	3.959841		0.00
0.00	0.000000		
25	3.550922		0.00
0.00	0.000000		
30	3.242218		14.30
10.00	46.363717		
35	3.014628		121.55
85.00	366.428033		

Existing MSAT - Sierra to Draper

Speed (mph)	VT	MSAT	VT * MSAT
40	5.00	2.856859	7.15
45	0.00	20.426542	0.00
50	0.00	2.770133	0.00
55	0.00	0.000000	0.00
60	0.00	2.757814	0.00
65	0.00	0.000000	0.00
70	0.00	2.843012	0.00
75	0.00	0.000000	0.00
	0.00	3.059510	0.00
	0.00	0.000000	0.00
	0.00	3.478650	0.00
	0.00	0.000000	0.00
	0.00	3.951430	0.00
	0.00	0.000000	0.00
	0.00	4.776375	0.00
	0.00	0.000000	0.00
----- Total			143.00
	100.00	433.218293	

Pollutant Name : BUTADIENE

speed(mph)	VT	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)				
5	0.00	0.003853	0.000000	0.00
10	0.00	0.002614	0.000000	0.00
15	0.00	0.001851	0.000000	0.00
20	0.00	0.001395	0.000000	0.00
25	0.00	0.001123	0.000000	0.00
30	10.00	0.000950	0.013585	14.30
35	85.00	0.000845	0.102710	121.55
40	5.00	0.000787	0.005627	7.15
45	0.00	0.000775	0.000000	0.00
50	0.00	0.000800	0.000000	0.00
55	0.00	0.000871	0.000000	0.00
60	0.00	0.000998	0.000000	0.00
65	0.00	0.001207	0.000000	0.00
70	0.00	0.001399	0.000000	0.00
75	0.00	0.001705	0.000000	0.00
	0.00	0.000000	0.000000	0.00
----- Total			0.121922	143.00
	100.00			

Pollutant Name : BENZENE

Existing MSAT - Sierra to Draper

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.019285	0.000000	0.00
0.00	0.000000		
10	0.012799	0.000000	0.00
0.00	0.000000		
15	0.008764	0.000000	0.00
0.00	0.000000		
20	0.006463	0.000000	0.00
0.00	0.000000		
25	0.005204	0.000000	0.00
0.00	0.000000		
30	0.004388	0.062748	14.30
10.00	0.062748		
35	0.003882	0.471857	121.55
85.00	0.471857		
40	0.003597	0.025719	7.15
5.00	0.025719		
45	0.003527	0.000000	0.00
0.00	0.000000		
50	0.003627	0.000000	0.00
0.00	0.000000		
55	0.003941	0.000000	0.00
0.00	0.000000		
60	0.004502	0.000000	0.00
0.00	0.000000		
65	0.005432	0.000000	0.00
0.00	0.000000		
70	0.006282	0.000000	0.00
0.00	0.000000		
75	0.007621	0.000000	0.00
0.00	0.000000		

Total		0.560324	143.00
100.00			

Po ll utant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000810	0.000000	0.00
0.00	0.000000		
10	0.000559	0.000000	0.00
0.00	0.000000		
15	0.000407	0.000000	0.00
0.00	0.000000		
20	0.000311	0.000000	0.00
0.00	0.000000		
25	0.000250	0.000000	0.00
0.00	0.000000		
30	0.000212	0.003032	14.30
10.00	0.003032		
35	0.000188	0.022851	121.55
85.00	0.022851		
40	0.000176	0.001258	7.15
5.00	0.001258		
45	0.000173	0.000000	0.00
0.00	0.000000		
50	0.000179	0.000000	0.00
0.00	0.000000		

Existing MSAT - Sierra to Draper

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	0.00	0.000195	0.000000	0.00
60	0.00	0.000223	0.000000	0.00
65	0.00	0.000269	0.000000	0.00
70	0.00	0.000310	0.000000	0.00
75	0.00	0.000377	0.000000	0.00
<hr/>				
Total	100.00		0.027141	143.00

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.018245	0.00
10	0.010699	0.00
15	0.005798	0.00
20	0.003565	0.00
25	0.002900	0.00
30	0.002409	14.30
35	0.002062	121.55
40	0.001843	7.15
45	0.001750	0.00
50	0.001771	0.00
55	0.001917	0.00
60	0.002197	0.00
65	0.002634	0.00
70	0.003168	0.00
75	0.003909	0.00
<hr/>		
Total		143.00
100.00	0.298262	

Idling Emissions (grams) (Currently NOT Available)

Existing MSAT - Sierra to Draper

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
13.015952 0.052548 4.13

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 4.13

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000991 0.000004 4.13

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.129793 0.000524 4.13

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 4.13

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 4.13

Existing MSAT - Sierra to Draper

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	34.975861	0.034976
0.000038554		
S02	0.510596	0.000511
0.000000563		
Di esel _PM	1.494364	0.001494
0.000001647		
PM2.5	3.267750	0.003268
0.000003602		
PM10	3.442110	0.003442
0.000003794		
NOX	87.249970	0.087250
0.000096177		
FORMALDEHYDE	0.784126	0.000784
0.000000864		
C02	55,694.095965	55.694096
0.061392232		
CO	433.218293	0.433218
0.000477541		
BUTADIENE	0.122913	0.000123
0.000000135		
BENZENE	0.690117	0.000690
0.000000761		
ACROLEIN	0.027141	0.000027
0.000000030		
ACETALDEHYDE	0.298262	0.000298
0.000000329		

END

Existing MSAT - Thompson to 2nd

Title : Existing MSAT - Thompson to 2nd
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:39 AM
 Scen Year : 2011
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 799
 Volume (vph) :
 Road Length(mi) : 0.5
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 (mph) 70 >75
 % 10 85 5

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 (mph) 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.806639	0.00
0.00	0.000000	
10	0.528407	0.00
0.00	0.000000	
15	0.355751	0.00
0.00	0.000000	
20	0.258521	0.00
0.00	0.000000	
25	0.206724	0.00
0.00	0.000000	
30	0.173301	0.00
0.00	0.000000	
35	0.152030	39.95
10.00	6.073599	
40	0.140204	339.58
85.00	47.609773	
45	0.135563	19.98
5.00	2.707871	
50	0.138677	0.00

Existing MSAT - Thompson to 2nd

Speed (mph)	VT (hours)	MSAT (grams/mile)	MSAT (grams/mile)
55	0.00	0.149341	0.00
60	0.00	0.170551	0.00
65	0.00	0.202915	0.00
70	0.00	0.231494	0.00
75	0.00	0.273901	0.00

Total	100.00	56.391243	399.50

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VT (hours)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)				
5	0.010953	0.00	0.000000	0.00
10	0.008595	0.00	0.000000	0.00
15	0.007064	0.00	0.000000	0.00
20	0.005110	0.00	0.000000	0.00
25	0.004375	0.00	0.000000	0.00
30	0.004521	0.00	0.000000	0.00
35	0.003465	10.00	0.138427	39.95
40	0.003465	85.00	1.176627	339.58
45	0.003579	5.00	0.071491	19.98
50	0.003579	0.00	0.000000	0.00
55	0.003579	0.00	0.000000	0.00
60	0.003427	0.00	0.000000	0.00
65	0.004714	0.00	0.000000	0.00
70	0.004521	0.00	0.000000	0.00
75	0.004350	0.00	0.000000	0.00

Total	100.00	1.386545		399.50

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VT (hours)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)				
5	0.046606	0.00	0.000000	0.00

Existing MSAT - Thompson to 2nd

10		0.032404	0.00
0.00		0.000000	
15		0.022310	0.00
0.00		0.000000	
20		0.016145	0.00
0.00		0.000000	
25		0.013456	0.00
0.00		0.000000	
30		0.011634	0.00
0.00		0.000000	
35		0.010349	39.95
10.00		0.413443	
40		0.009801	339.58
85.00		3.328175	
45		0.009685	19.98
5.00		0.193458	
50		0.010186	0.00
0.00		0.000000	
55		0.011199	0.00
0.00		0.000000	
60		0.012961	0.00
0.00		0.000000	
65		0.015129	0.00
0.00		0.000000	
70		0.017884	0.00
0.00		0.000000	
75		0.021029	0.00
0.00		0.000000	

Total	100.00	3.935075	399.50

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.115192	0.00	
0.00	0.000000		
10	0.076943	0.00	
0.00	0.000000		
15	0.053130	0.00	
0.00	0.000000		
20	0.038388	0.00	
0.00	0.000000		
25	0.031273	0.00	
0.00	0.000000		
30	0.026027	0.00	
0.00	0.000000		
35	0.022626	39.95	
10.00	0.903909		
40	0.020332	339.58	
85.00	6.904239		
45	0.020134	19.98	
5.00	0.402177		
50	0.019701	0.00	
0.00	0.000000		
55	0.021498	0.00	
0.00	0.000000		
60	0.024417	0.00	
0.00	0.000000		
65	0.028253	0.00	

Existing MSAT - Thompson to 2nd

0.00	0.000000	
70	0.029829	0.00
0.00	0.000000	
75	0.033661	0.00
0.00	0.000000	

Total	8.210324	399.50
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.125053	0.00
0.00	0.000000	
10	0.083944	0.00
0.00	0.000000	
15	0.058164	0.00
0.00	0.000000	
20	0.042180	0.00
0.00	0.000000	
25	0.033617	0.00
0.00	0.000000	
30	0.027819	0.00
0.00	0.000000	
35	0.023780	39.95
10.00	0.950011	
40	0.021516	339.58
85.00	7.306296	
45	0.021227	19.98
5.00	0.424009	
50	0.021909	0.00
0.00	0.000000	
55	0.023269	0.00
0.00	0.000000	
60	0.025367	0.00
0.00	0.000000	
65	0.029506	0.00
0.00	0.000000	
70	0.033579	0.00
0.00	0.000000	
75	0.036169	0.00
0.00	0.000000	

Total	8.680316	399.50
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.252436	0.00
0.00	0.000000	
10	0.972427	0.00
0.00	0.000000	
15	0.790534	0.00
0.00	0.000000	
20	0.699718	0.00
0.00	0.000000	

Existing MSAT - Thompson to 2nd

25		0.656037	0.00
0.00		0.000000	
30		0.625757	0.00
0.00		0.000000	
35		0.608811	39.95
10.00		24.321999	
40		0.601492	339.58
85.00		204.251646	
45		0.606208	19.98
5.00		12.109005	
50		0.621801	0.00
0.00		0.000000	
55		0.649943	0.00
0.00		0.000000	
60		0.695067	0.00
0.00		0.000000	
65		0.761951	0.00
0.00		0.000000	
70		0.830852	0.00
0.00		0.000000	
75		0.934533	0.00
0.00		0.000000	

Total	100.00	240.682650	399.50

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.042182	0.00	0.00
0.00	0.000000		
10	0.025319	0.00	0.00
0.00	0.000000		
15	0.014437	0.00	0.00
0.00	0.000000		
20	0.009295	0.00	0.00
0.00	0.000000		
25	0.007537	0.00	0.00
0.00	0.000000		
30	0.006283	0.00	0.00
0.00	0.000000		
35	0.005424	39.95	39.95
10.00	0.216689		
40	0.004894	339.58	339.58
85.00	1.661880		
45	0.004685	19.98	19.98
5.00	0.093583		
50	0.004760	0.00	0.00
0.00	0.000000		
55	0.005154	0.00	0.00
0.00	0.000000		
60	0.005895	0.00	0.00
0.00	0.000000		
65	0.007074	0.00	0.00
0.00	0.000000		
70	0.008391	0.00	0.00
0.00	0.000000		
75	0.010277	0.00	0.00
0.00	0.000000		

		Existing MSAT - Thompson to 2nd	
Total	100.00	1.972152	399.50

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1,126.224879		0.00
0.00	0.000000		
10	858.457476		0.00
0.00	0.000000		
15	678.179737		0.00
0.00	0.000000		
20	556.043565		0.00
0.00	0.000000		
25	475.994821		0.00
0.00	0.000000		
30	421.934514		0.00
0.00	0.000000		
35	386.971628		39.95
10.00	15,459.516539		
40	366.997347		339.58
85.00	124,623.124108		
45	359.825507		19.98
5.00	7,187.514502		
50	364.751578		0.00
0.00	0.000000		
55	382.414289		0.00
0.00	0.000000		
60	414.925071		0.00
0.00	0.000000		
65	466.284807		0.00
0.00	0.000000		
70	469.756332		0.00
0.00	0.000000		
75	475.060541		0.00
0.00	0.000000		

Total	100.00	147,270.155148	399.50

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	6.401178		0.00
0.00	0.000000		
10	5.303987		0.00
0.00	0.000000		
15	4.524254		0.00
0.00	0.000000		
20	3.959841		0.00
0.00	0.000000		
25	3.550922		0.00
0.00	0.000000		
30	3.242218		0.00
0.00	0.000000		
35	3.014628		39.95
10.00	120.434389		

Existing MSAT - Thompson to 2nd

Speed (mph)	Percentage	MSAT	Value
40	85.00	2.856859	339.58
45	5.00	2.770133	19.98
50	0.00	2.757814	0.00
55	0.00	2.843012	0.00
60	0.00	3.059510	0.00
65	0.00	3.478650	0.00
70	0.00	3.951430	0.00
75	0.00	4.776375	0.00
----- Total			399.50
	100.00	1,145.885690	

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.003853	0.00	0.00
10	0.002614	0.00	0.00
15	0.001851	0.00	0.00
20	0.001395	0.00	0.00
25	0.001123	0.00	0.00
30	0.000950	0.00	0.00
35	0.000845	39.95	39.95
40	0.000787	339.58	339.58
45	0.000775	19.98	19.98
50	0.000800	0.00	0.00
55	0.000871	0.00	0.00
60	0.000998	0.00	0.00
65	0.001207	0.00	0.00
70	0.001399	0.00	0.00
75	0.001705	0.00	0.00
----- Total			399.50
	100.00	0.316484	

Pollutant Name : BENZENE

Existing MSAT - Thompson to 2nd

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.019285	0.000000	0.00
0.00	0.000000		
10	0.012799	0.000000	0.00
0.00	0.000000		
15	0.008764	0.000000	0.00
0.00	0.000000		
20	0.006463	0.000000	0.00
0.00	0.000000		
25	0.005204	0.000000	0.00
0.00	0.000000		
30	0.004388	0.000000	0.00
0.00	0.000000		
35	0.003882	39.95	39.95
10.00	0.155086		
40	0.003597	339.58	339.58
85.00	1.221451		
45	0.003527	19.98	19.98
5.00	0.070452		
50	0.003627	0.00	0.00
0.00	0.000000		
55	0.003941	0.00	0.00
0.00	0.000000		
60	0.004502	0.00	0.00
0.00	0.000000		
65	0.005432	0.00	0.00
0.00	0.000000		
70	0.006282	0.00	0.00
0.00	0.000000		
75	0.007621	0.00	0.00
0.00	0.000000		

Total		1.446989	399.50
100.00			

Pollutant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000810	0.000000	0.00
0.00	0.000000		
10	0.000559	0.000000	0.00
0.00	0.000000		
15	0.000407	0.000000	0.00
0.00	0.000000		
20	0.000311	0.000000	0.00
0.00	0.000000		
25	0.000250	0.000000	0.00
0.00	0.000000		
30	0.000212	0.000000	0.00
0.00	0.000000		
35	0.000188	39.95	39.95
10.00	0.007511		
40	0.000176	339.58	339.58
85.00	0.059765		
45	0.000173	19.98	19.98
5.00	0.003456		
50	0.000179	0.00	0.00
0.00	0.000000		

Existing MSAT - Thompson to 2nd

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	0.00	0.000195	0.000000	0.00
60	0.00	0.000223	0.000000	0.00
65	0.00	0.000269	0.000000	0.00
70	0.00	0.000310	0.000000	0.00
75	0.00	0.000377	0.000000	0.00
<hr/>				
Total	100.00		0.070731	399.50

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.018245	0.00
10	0.010699	0.00
15	0.005798	0.00
20	0.003565	0.00
25	0.002900	0.00
30	0.002409	0.00
35	0.002062	39.95
40	0.001843	339.58
45	0.001750	19.98
50	0.001771	0.00
55	0.001917	0.00
60	0.002197	0.00
65	0.002634	0.00
70	0.003168	0.00
75	0.003909	0.00
<hr/>		
Total		399.50
100.00	0.743170	

Idling Emissions (grams) (Currently NOT Available)

Existing MSAT - Thompson to 2nd

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
31.764296 0.052548 10.07

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.07

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.002418 0.000004 10.07

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.316748 0.000524 10.07

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.07

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.07

Existing MSAT - Thompson to 2nd

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	88.155539	0.088156
0.000097175		
SO2	1.386545	0.001387
0.000001528		
Diesel_PM	3.935075	0.003935
0.000004338		
PM2.5	8.210324	0.008210
0.000009050		
PM10	8.680316	0.008680
0.000009568		
NOX	240.682650	0.240683
0.000265307		
FORMALDEHYDE	1.972152	0.001972
0.000002174		
CO2	147,270.155148	147.270155
0.162337558		
CO	1,145.885690	1.145886
0.001263123		
BUTADIENE	0.318902	0.000319
0.000000352		
BENZENE	1.763737	0.001764
0.000001944		
ACROLEIN	0.070731	0.000071
0.000000078		
ACETALDEHYDE	0.743170	0.000743
0.000000819		

END

Future - 2nd to Mountain View

Title : Future - 2nd to Mountain View
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 11:09 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT Volume (vph) Road Length(mi)
 Number of Hours 1024 1.75

VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 (mph) %
 85 5

Offpeak User Input:
 Total VMT Volume (vph) Road Length(mi)
 Number of Hours

VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 (mph) %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	0.00
0.00	0.000000	
40	0.040738	0.00
0.00	0.000000	
45	0.040036	0.00
0.00	0.000000	
50	0.043542	179.20

Future - 2nd to Mountain View

Speed (mph)	VT-Mileage	Emission Factor (grams/mile)	VT-Mileage
10.00	7.802726		
55	0.047415		1,523.20
85.00	72.222528		
60	0.056848		89.60
5.00	5.093581		
65	0.070315		0.00
70	0.000000		0.00
0.00	0.090057		0.00
0.00	0.000000		0.00
75	0.121861		0.00
0.00	0.000000		0.00
<hr/>			
Total	100.00	85.118835	1,792.00

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VT-Mileage
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	VMT by Speed
5	0.011305	0.00
0.00	0.000000	0.00
10	0.007585	0.00
0.00	0.000000	0.00
15	0.006023	0.00
0.00	0.000000	0.00
20	0.005348	0.00
0.00	0.000000	0.00
25	0.004568	0.00
0.00	0.000000	0.00
30	0.003424	0.00
0.00	0.000000	0.00
35	0.003643	0.00
0.00	0.000000	0.00
40	0.003643	0.00
0.00	0.000000	0.00
45	0.003764	0.00
0.00	0.000000	0.00
50	0.003741	179.20
10.00	0.670387	
55	0.003741	1,523.20
85.00	5.698291	
60	0.003620	89.60
5.00	0.324352	
65	0.004862	0.00
0.00	0.000000	0.00
70	0.004710	0.00
0.00	0.000000	0.00
75	0.004505	0.00
0.00	0.000000	0.00
<hr/>		
Total	100.00	6.693030

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VT-Mileage
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	VMT by Speed
5	0.005185	0.00
0.00	0.000000	0.00

Future - 2nd to Mountain View

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	0.00
0.00		0.000000	
35		0.002409	0.00
0.00		0.000000	
40		0.002284	0.00
0.00		0.000000	
45		0.002434	0.00
0.00		0.000000	
50		0.002609	179.20
10.00		0.467533	
55		0.002752	1,523.20
85.00		4.191846	
60		0.003118	89.60
5.00		0.279373	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	4.938752	1,792.00

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	0.00
0.00	0.000000		
10	0.053692	0.00	0.00
0.00	0.000000		
15	0.037357	0.00	0.00
0.00	0.000000		
20	0.026983	0.00	0.00
0.00	0.000000		
25	0.021476	0.00	0.00
0.00	0.000000		
30	0.017483	0.00	0.00
0.00	0.000000		
35	0.014311	0.00	0.00
0.00	0.000000		
40	0.012928	0.00	0.00
0.00	0.000000		
45	0.012433	0.00	0.00
0.00	0.000000		
50	0.012848	179.20	179.20
10.00	2.302362		
55	0.012818	1,523.20	1,523.20
85.00	19.524378		
60	0.014948	89.60	89.60
5.00	1.339341		
65	0.016518	0.00	0.00

Future - 2nd to Mountain View

0.00	0.000000	
70	0.018259	0.00
0.00	0.000000	
75	0.018453	0.00
0.00	0.000000	

Total	23.166080	1,792.00
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.087119	0.00
0.00	0.000000	
10	0.056770	0.00
0.00	0.000000	
15	0.039822	0.00
0.00	0.000000	
20	0.029525	0.00
0.00	0.000000	
25	0.022813	0.00
0.00	0.000000	
30	0.017789	0.00
0.00	0.000000	
35	0.015837	0.00
0.00	0.000000	
40	0.014463	0.00
0.00	0.000000	
45	0.014028	0.00
0.00	0.000000	
50	0.014323	179.20
10.00	2.566682	
55	0.014216	1,523.20
85.00	21.653811	
60	0.016159	89.60
5.00	1.447846	
65	0.018798	0.00
0.00	0.000000	
70	0.019122	0.00
0.00	0.000000	
75	0.020425	0.00
0.00	0.000000	

Total	25.668339	1,792.00
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.245623	0.00
0.00	0.000000	
10	0.198626	0.00
0.00	0.000000	
15	0.165577	0.00
0.00	0.000000	
20	0.143331	0.00
0.00	0.000000	

Future - 2nd to Mountain View

25		0.132483	0.00
0.00		0.000000	
30		0.123366	0.00
0.00		0.000000	
35		0.117415	0.00
0.00		0.000000	
40		0.114461	0.00
0.00		0.000000	
45		0.113507	0.00
0.00		0.000000	
50		0.116617	179.20
10.00		20.897766	
55		0.121114	1,523.20
85.00		184.480845	
60		0.130276	89.60
5.00		11.672730	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	217.051341	1,792.00

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	0.00
0.00	0.000000		
10	0.006173	0.00	0.00
0.00	0.000000		
15	0.003611	0.00	0.00
0.00	0.000000		
20	0.002499	0.00	0.00
0.00	0.000000		
25	0.002125	0.00	0.00
0.00	0.000000		
30	0.001855	0.00	0.00
0.00	0.000000		
35	0.001668	0.00	0.00
0.00	0.000000		
40	0.001549	0.00	0.00
0.00	0.000000		
45	0.001482	0.00	0.00
0.00	0.000000		
50	0.001490	179.20	179.20
10.00	0.267008		
55	0.001571	1,523.20	1,523.20
85.00	2.392947		
60	0.001751	89.60	89.60
5.00	0.156890		
65	0.002070	0.00	0.00
0.00	0.000000		
70	0.002555	0.00	0.00
0.00	0.000000		
75	0.003351	0.00	0.00
0.00	0.000000		

Future - 2nd to Mountain View

Total	100.00	2.816845	1,792.00
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Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1,120.506181	0.00
0.00	0.000000	
10	852.755297	0.00
0.00	0.000000	
15	672.761381	0.00
0.00	0.000000	
20	550.898472	0.00
0.00	0.000000	
25	470.771042	0.00
0.00	0.000000	
30	416.722639	0.00
0.00	0.000000	
35	381.825650	0.00
0.00	0.000000	
40	361.951439	0.00
0.00	0.000000	
45	354.906995	0.00
0.00	0.000000	
50	359.987591	179.20
10.00	64,509.776307	
55	377.841830	1,523.20
85.00	575,528.675456	
60	410.603543	89.60
5.00	36,790.077453	
65	462.317805	0.00
0.00	0.000000	
70	466.031341	0.00
0.00	0.000000	
75	471.722636	0.00
0.00	0.000000	
<hr style="border-top: 1px dashed black;"/>		
Total	676,828.529216	1,792.00
100.00		

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.443585	0.00
0.00	0.000000	
10	1.248371	0.00
0.00	0.000000	
15	1.103416	0.00
0.00	0.000000	
20	0.994387	0.00
0.00	0.000000	
25	0.913522	0.00
0.00	0.000000	
30	0.848160	0.00
0.00	0.000000	
35	0.797444	0.00
0.00	0.000000	

Future - 2nd to Mountain View			
40		0.760222	0.00
0.00		0.000000	
45		0.737532	0.00
0.00		0.000000	
50		0.733530	179.20
10.00		131.448576	
55		0.753438	1,523.20
85.00		1,147.636762	
60		0.809441	89.60
5.00		72.525914	
65		0.924364	0.00
0.00		0.000000	
70		1.162411	0.00
0.00		0.000000	
75		1.580251	0.00
0.00		0.000000	

Total	100.00	1,351.611251	1,792.00

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000896	0.00	0.00
0.00	0.000000		
10	0.000615	0.00	0.00
0.00	0.000000		
15	0.000442	0.00	0.00
0.00	0.000000		
20	0.000344	0.00	0.00
0.00	0.000000		
25	0.000287	0.00	0.00
0.00	0.000000		
30	0.000252	0.00	0.00
0.00	0.000000		
35	0.000233	0.00	0.00
0.00	0.000000		
40	0.000229	0.00	0.00
0.00	0.000000		
45	0.000233	0.00	0.00
0.00	0.000000		
50	0.000254	179.20	179.20
10.00	0.045517		
55	0.000290	1,523.20	1,523.20
85.00	0.441728		
60	0.000351	89.60	89.60
5.00	0.031450		
65	0.000446	0.00	0.00
0.00	0.000000		
70	0.000583	0.00	0.00
0.00	0.000000		
75	0.000807	0.00	0.00
0.00	0.000000		

Total	100.00	0.518694	1,792.00

Pollutant Name : BENZENE

Future - 2nd to Mountain View		Emissions by Speed	
speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004540	0.000000	0.00
0.00	0.000000	0.000000	0.00
10	0.003034	0.000000	0.00
0.00	0.000000	0.000000	0.00
15	0.002108	0.000000	0.00
0.00	0.000000	0.000000	0.00
20	0.001610	0.000000	0.00
0.00	0.000000	0.000000	0.00
25	0.001343	0.000000	0.00
0.00	0.000000	0.000000	0.00
30	0.001175	0.000000	0.00
0.00	0.000000	0.000000	0.00
35	0.001082	0.000000	0.00
0.00	0.000000	0.000000	0.00
40	0.001053	0.000000	0.00
0.00	0.000000	0.000000	0.00
45	0.001062	0.000000	0.00
0.00	0.000000	0.000000	0.00
50	0.001143	0.204826	179.20
10.00	0.204826	0.000000	1,523.20
55	0.001294	1.971021	89.60
85.00	1.971021	0.000000	0.00
60	0.001548	0.138701	0.00
5.00	0.138701	0.000000	0.00
65	0.001955	0.000000	0.00
0.00	0.000000	0.000000	0.00
70	0.002535	0.000000	0.00
0.00	0.000000	0.000000	0.00
75	0.003480	0.000000	0.00
0.00	0.000000	0.000000	0.00

Total		2.314547	1,792.00
100.00			

Pollutant Name : ACROLEIN

Future - 2nd to Mountain View		Emissions by Speed	
speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000187	0.000000	0.00
0.00	0.000000	0.000000	0.00
10	0.000131	0.000000	0.00
0.00	0.000000	0.000000	0.00
15	0.000097	0.000000	0.00
0.00	0.000000	0.000000	0.00
20	0.000076	0.000000	0.00
0.00	0.000000	0.000000	0.00
25	0.000063	0.000000	0.00
0.00	0.000000	0.000000	0.00
30	0.000055	0.000000	0.00
0.00	0.000000	0.000000	0.00
35	0.000051	0.000000	0.00
0.00	0.000000	0.000000	0.00
40	0.000051	0.000000	0.00
0.00	0.000000	0.000000	0.00
45	0.000052	0.000000	0.00
0.00	0.000000	0.000000	0.00
50	0.000057	0.010214	179.20
10.00	0.010214	0.000000	

Future - 2nd to Mountain View

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
55	0.000065		1,523.20
85.00	0.099008		
60	0.000079		89.60
5.00	0.007078		
65	0.000101		0.00
0.00	0.000000		
70	0.000132		0.00
0.00	0.000000		
75	0.000183		0.00
0.00	0.000000		

Total	100.00	0.116301	1,792.00

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
5	0.004466		0.00
0.00	0.000000		
10	0.002624		0.00
0.00	0.000000		
15	0.001467		0.00
0.00	0.000000		
20	0.000985		0.00
0.00	0.000000		
25	0.000844		0.00
0.00	0.000000		
30	0.000737		0.00
0.00	0.000000		
35	0.000658		0.00
0.00	0.000000		
40	0.000602		0.00
0.00	0.000000		
45	0.000566		0.00
0.00	0.000000		
50	0.000555		179.20
10.00	0.099456		
55	0.000568		1,523.20
85.00	0.865178		
60	0.000612		89.60
5.00	0.054835		
65	0.000700		0.00
0.00	0.000000		
70	0.000843		0.00
0.00	0.000000		
75	0.001078		0.00
0.00	0.000000		

Total	100.00	1.019469	1,792.00

 Idling Emi ssi ons (grams) (Currentl y NOT Avai l abl e)

Future - 2nd to Mountain View

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
33.564958 0.017070 32.77

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 32.77

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.001966 0.000001 32.77

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.351970 0.000179 32.77

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 32.77

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 32.77

Future - 2nd to Mountain View

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	118.683793	0.118684
0.000130826		
S02	6.693030	0.006693
0.000007378		
Di esel _PM	4.938752	0.004939
0.000005444		
PM2.5	23.166080	0.023166
0.000025536		
PM10	25.668339	0.025668
0.000028295		
NOX	217.051341	0.217051
0.000239258		
FORMALDEHYDE	2.816845	0.002817
0.000003105		
C02	676,828.529216	676.828529
0.746075743		
CO	1,351.611251	1.351611
0.001489896		
BUTADIENE	0.520661	0.000521
0.000000574		
BENZENE	2.666517	0.002667
0.000002939		
ACROLEIN	0.116301	0.000116
0.000000128		
ACETALDEHYDE	1.019469	0.001019
0.000001124		

END

Future - Adams to Merced

Title : Future - Adams to Merced
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:54 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 812
 Volume (vph) : 0.5
 Road Length(mi) : 0.5
 Number of Hours : 1
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 % 10 85

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %

 Runni ng Exhaust Emi ssi ons (grams)

Pollutant Name : TOG_exh

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	0.00
0.00	0.000000	
40	0.040738	0.00
0.00	0.000000	
45	0.040036	40.60
10.00	1.625462	
50	0.043542	345.10

Future - Adams to Merced

Speed (mph)	VT (hours)	Emission Factor (grams/mile)	Emissions (grams)
85.00	15.026344		
55	0.047415		20.30
5.00	0.962525		
60	0.056848		0.00
0.00	0.000000		
65	0.070315		0.00
0.00	0.000000		
70	0.090057		0.00
0.00	0.000000		
75	0.121861		0.00
0.00	0.000000		
----- Total			406.00
	100.00	17.614330	

Pollutant Name : S02

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed	
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed		
5	0.011305	0.00	
0.00	0.000000		
10	0.007585	0.00	
0.00	0.000000		
15	0.006023	0.00	
0.00	0.000000		
20	0.005348	0.00	
0.00	0.000000		
25	0.004568	0.00	
0.00	0.000000		
30	0.003424	0.00	
0.00	0.000000		
35	0.003643	0.00	
0.00	0.000000		
40	0.003643	0.00	
0.00	0.000000		
45	0.003764	40.60	
10.00	0.152818		
50	0.003741	345.10	
85.00	1.291019		
55	0.003741	20.30	
5.00	0.075942		
60	0.003620	0.00	
0.00	0.000000		
65	0.004862	0.00	
0.00	0.000000		
70	0.004710	0.00	
0.00	0.000000		
75	0.004505	0.00	
0.00	0.000000		
----- Total			406.00
	100.00	1.519780	

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.005185	0.00
0.00	0.000000	

Future - Adams to Merced

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	0.00
0.00		0.000000	
35		0.002409	0.00
0.00		0.000000	
40		0.002284	0.00
0.00		0.000000	
45		0.002434	40.60
10.00		0.098820	
50		0.002609	345.10
85.00		0.900366	
55		0.002752	20.30
5.00		0.055866	
60		0.003118	0.00
0.00		0.000000	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	1.055052	406.00

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	
0.00	0.000000		
10	0.053692	0.00	
0.00	0.000000		
15	0.037357	0.00	
0.00	0.000000		
20	0.026983	0.00	
0.00	0.000000		
25	0.021476	0.00	
0.00	0.000000		
30	0.017483	0.00	
0.00	0.000000		
35	0.014311	0.00	
0.00	0.000000		
40	0.012928	0.00	
0.00	0.000000		
45	0.012433	40.60	
10.00	0.504780		
50	0.012848	345.10	
85.00	4.433845		
55	0.012818	20.30	
5.00	0.260205		
60	0.014948	0.00	
0.00	0.000000		
65	0.016518	0.00	

Future - Adams to Merced

0.00	0.000000	
70	0.018259	0.00
0.00	0.000000	
75	0.018453	0.00
0.00	0.000000	

Total	5.198830	406.00
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.087119	0.00
0.00	0.000000	
10	0.056770	0.00
0.00	0.000000	
15	0.039822	0.00
0.00	0.000000	
20	0.029525	0.00
0.00	0.000000	
25	0.022813	0.00
0.00	0.000000	
30	0.017789	0.00
0.00	0.000000	
35	0.015837	0.00
0.00	0.000000	
40	0.014463	0.00
0.00	0.000000	
45	0.014028	40.60
10.00	0.569537	
50	0.014323	345.10
85.00	4.942867	
55	0.014216	20.30
5.00	0.288585	
60	0.016159	0.00
0.00	0.000000	
65	0.018798	0.00
0.00	0.000000	
70	0.019122	0.00
0.00	0.000000	
75	0.020425	0.00
0.00	0.000000	

Total	5.800989	406.00
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.245623	0.00
0.00	0.000000	
10	0.198626	0.00
0.00	0.000000	
15	0.165577	0.00
0.00	0.000000	
20	0.143331	0.00
0.00	0.000000	

Future - Adams to Merced

25		0.132483	0.00
0.00		0.000000	
30		0.123366	0.00
0.00		0.000000	
35		0.117415	0.00
0.00		0.000000	
40		0.114461	0.00
0.00		0.000000	
45		0.113507	40.60
10.00		4.608384	
50		0.116617	345.10
85.00		40.244527	
55		0.121114	20.30
5.00		2.458614	
60		0.130276	0.00
0.00		0.000000	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	47.311525	406.00

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	
0.00	0.000000		
10	0.006173	0.00	
0.00	0.000000		
15	0.003611	0.00	
0.00	0.000000		
20	0.002499	0.00	
0.00	0.000000		
25	0.002125	0.00	
0.00	0.000000		
30	0.001855	0.00	
0.00	0.000000		
35	0.001668	0.00	
0.00	0.000000		
40	0.001549	0.00	
0.00	0.000000		
45	0.001482	40.60	
10.00	0.060169		
50	0.001490	345.10	
85.00	0.514199		
55	0.001571	20.30	
5.00	0.031891		
60	0.001751	0.00	
0.00	0.000000		
65	0.002070	0.00	
0.00	0.000000		
70	0.002555	0.00	
0.00	0.000000		
75	0.003351	0.00	
0.00	0.000000		

Future - Adams to Merced

Total	100.00	0.606260	406.00
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Pollutant Name : CO2

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	1,120.506181	0.00
0.00	0.000000	
10	852.755297	0.00
0.00	0.000000	
15	672.761381	0.00
0.00	0.000000	
20	550.898472	0.00
0.00	0.000000	
25	470.771042	0.00
0.00	0.000000	
30	416.722639	0.00
0.00	0.000000	
35	381.825650	0.00
0.00	0.000000	
40	361.951439	0.00
0.00	0.000000	
45	354.906995	40.60
10.00	14,409.223997	
50	359.987591	345.10
85.00	124,231.717654	
55	377.841830	20.30
5.00	7,670.189149	
60	410.603543	0.00
0.00	0.000000	
65	462.317805	0.00
0.00	0.000000	
70	466.031341	0.00
0.00	0.000000	
75	471.722636	0.00
0.00	0.000000	
<hr style="border-top: 1px dashed black;"/>		
Total	146,311.130800	406.00
	100.00	

Pollutant Name : CO

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	1.443585	0.00
0.00	0.000000	
10	1.248371	0.00
0.00	0.000000	
15	1.103416	0.00
0.00	0.000000	
20	0.994387	0.00
0.00	0.000000	
25	0.913522	0.00
0.00	0.000000	
30	0.848160	0.00
0.00	0.000000	
35	0.797444	0.00
0.00	0.000000	

Future - Adams to Merced			
40		0.760222	0.00
0.00		0.000000	
45		0.737532	40.60
10.00		29.943799	
50		0.733530	345.10
85.00		253.141203	
55		0.753438	20.30
5.00		15.294791	
60		0.809441	0.00
0.00		0.000000	
65		0.924364	0.00
0.00		0.000000	
70		1.162411	0.00
0.00		0.000000	
75		1.580251	0.00
0.00		0.000000	

Total			406.00
	100.00	298.379794	

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000896	0.00	0.00
0.00	0.000000		
10	0.000615	0.00	0.00
0.00	0.000000		
15	0.000442	0.00	0.00
0.00	0.000000		
20	0.000344	0.00	0.00
0.00	0.000000		
25	0.000287	0.00	0.00
0.00	0.000000		
30	0.000252	0.00	0.00
0.00	0.000000		
35	0.000233	0.00	0.00
0.00	0.000000		
40	0.000229	0.00	0.00
0.00	0.000000		
45	0.000233	40.60	40.60
10.00	0.009460		
50	0.000254	345.10	345.10
85.00	0.087655		
55	0.000290	20.30	20.30
5.00	0.005887		
60	0.000351	0.00	0.00
0.00	0.000000		
65	0.000446	0.00	0.00
0.00	0.000000		
70	0.000583	0.00	0.00
0.00	0.000000		
75	0.000807	0.00	0.00
0.00	0.000000		

Total			406.00
	100.00	0.103002	

Pollutant Name : BENZENE

speed(mph)		Future - Adams to Merced		VMT by Speed
EMISSION (%)	EMISSION (%)	Factor(grams/mile)	Emissions by Speed	
5	0.00	0.004540	0.000000	0.00
10	0.00	0.003034	0.000000	0.00
15	0.00	0.002108	0.000000	0.00
20	0.00	0.001610	0.000000	0.00
25	0.00	0.001343	0.000000	0.00
30	0.00	0.001175	0.000000	0.00
35	0.00	0.001082	0.000000	0.00
40	0.00	0.001053	0.000000	0.00
45	10.00	0.001062	0.043117	40.60
50	85.00	0.001143	0.394449	345.10
55	5.00	0.001294	0.026268	20.30
60	0.00	0.001548	0.000000	0.00
65	0.00	0.001955	0.000000	0.00
70	0.00	0.002535	0.000000	0.00
75	0.00	0.003480	0.000000	0.00

Total	100.00		0.463835	406.00

Pollutant Name : ACROLEIN

speed(mph)		Future - Adams to Merced		VMT by Speed
EMISSION (%)	EMISSION (%)	Factor(grams/mile)	Emissions by Speed	
5	0.00	0.000187	0.000000	0.00
10	0.00	0.000131	0.000000	0.00
15	0.00	0.000097	0.000000	0.00
20	0.00	0.000076	0.000000	0.00
25	0.00	0.000063	0.000000	0.00
30	0.00	0.000055	0.000000	0.00
35	0.00	0.000051	0.000000	0.00
40	0.00	0.000051	0.000000	0.00
45	10.00	0.000052	0.002111	40.60
50	85.00	0.000057	0.019671	345.10

Future - Adams to Merced

Speed (mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	5.00	0.000065	0.001320	20.30
60	0.00	0.000079	0.000000	0.00
65	0.00	0.000101	0.000000	0.00
70	0.00	0.000132	0.000000	0.00
75	0.00	0.000183	0.000000	0.00

Total			0.023101	406.00
	100.00			

Pollutant Name : ACETALDEHYDE

speed(mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
5	0.00	0.004466	0.000000	0.00
10	0.00	0.002624	0.000000	0.00
15	0.00	0.001467	0.000000	0.00
20	0.00	0.000985	0.000000	0.00
25	0.00	0.000844	0.000000	0.00
30	0.00	0.000737	0.000000	0.00
35	0.00	0.000658	0.000000	0.00
40	0.00	0.000602	0.000000	0.00
45	10.00	0.000566	0.022980	40.60
50	85.00	0.000555	0.191531	345.10
55	5.00	0.000568	0.011530	20.30
60	0.00	0.000612	0.000000	0.00
65	0.00	0.000700	0.000000	0.00
70	0.00	0.000843	0.000000	0.00
75	0.00	0.001078	0.000000	0.00

Total			0.226041	406.00
	100.00			

 Idling Emissions (grams) (Currently NOT Available)

Future - Adams to Merced

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
8.371107 0.017070 8.17

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 8.17

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000490 0.000001 8.17

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.087781 0.000179 8.17

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 8.17

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 8.17

Future - Adams to Merced

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	25.985438	0.025985
0.000028644		
S02	1.519780	0.001520
0.000001675		
Di esel _PM	1.055052	0.001055
0.000001163		
PM2.5	5.198830	0.005199
0.000005731		
PM10	5.800989	0.005801
0.000006394		
NOX	47.311525	0.047312
0.000052152		
FORMALDEHYDE	0.606260	0.000606
0.000000668		
CO2	146,311.130800	146.311131
0.161280414		
CO	298.379794	0.298380
0.000328907		
BUTADIENE	0.103493	0.000103
0.000000114		
BENZENE	0.551616	0.000552
0.000000608		
ACROLEIN	0.023101	0.000023
0.000000025		
ACETALDEHYDE	0.226041	0.000226
0.000000249		

END-----

Future - Floral to Thompson

Title : Future - Floral to Thompson
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 11:05 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 1557
 Volume (vph) : 0.5
 Road Length(mi) :
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55							10	85	5	
60										
65										
70										
>75										

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55										
60										
65										
70										
>75										

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	77.85
10.00	3.264095	
40	0.040738	661.73
85.00	26.957353	
45	0.040036	38.93
5.00	1.558401	
50	0.043542	0.00

Future - Floral to Thompson

	0.00	0.000000	
55	0.00	0.047415	0.00
60	0.00	0.056848	0.00
65	0.00	0.070315	0.00
70	0.00	0.090057	0.00
75	0.00	0.121861	0.00
	0.00	0.000000	

Total	100.00	31.779849	778.50

Pollutant Name : S02

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.011305	0.00	0.00
0.00	0.000000		
10	0.007585	0.00	0.00
0.00	0.000000		
15	0.006023	0.00	0.00
0.00	0.000000		
20	0.005348	0.00	0.00
0.00	0.000000		
25	0.004568	0.00	0.00
0.00	0.000000		
30	0.003424	0.00	0.00
0.00	0.000000		
35	0.003643	77.85	
10.00	0.283608		
40	0.003643	661.73	
85.00	2.410664		
45	0.003764	38.93	
5.00	0.146514		
50	0.003741	0.00	
0.00	0.000000		
55	0.003741	0.00	
0.00	0.000000		
60	0.003620	0.00	
0.00	0.000000		
65	0.004862	0.00	
0.00	0.000000		
70	0.004710	0.00	
0.00	0.000000		
75	0.004505	0.00	
0.00	0.000000		

Total	100.00	2.840785	778.50

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.005185	0.00	0.00
0.00	0.000000		

Future - Floral to Thompson

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	0.00
0.00		0.000000	
35		0.002409	77.85
10.00		0.187541	
40		0.002284	661.73
85.00		1.511380	
45		0.002434	38.93
5.00		0.094743	
50		0.002609	0.00
0.00		0.000000	
55		0.002752	0.00
0.00		0.000000	
60		0.003118	0.00
0.00		0.000000	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	1.793664	778.50

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	0.00
0.00	0.000000		
10	0.053692	0.00	0.00
0.00	0.000000		
15	0.037357	0.00	0.00
0.00	0.000000		
20	0.026983	0.00	0.00
0.00	0.000000		
25	0.021476	0.00	0.00
0.00	0.000000		
30	0.017483	0.00	0.00
0.00	0.000000		
35	0.014311	77.85	77.85
10.00	1.114111		
40	0.012928	661.73	661.73
85.00	8.554781		
45	0.012433	38.93	38.93
5.00	0.483955		
50	0.012848	0.00	0.00
0.00	0.000000		
55	0.012818	0.00	0.00
0.00	0.000000		
60	0.014948	0.00	0.00
0.00	0.000000		
65	0.016518	0.00	0.00

Future - Floral to Thompson

	0.00	0.000000	
70	0.018259	0.000000	0.00
75	0.018453	0.000000	0.00
	0.00	0.000000	

Total	100.00	10.152847	778.50

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.087119	0.000000	0.00
10	0.056770	0.000000	0.00
15	0.039822	0.000000	0.00
20	0.029525	0.000000	0.00
25	0.022813	0.000000	0.00
30	0.017789	0.000000	0.00
35	0.015837	0.000000	77.85
40	0.014463	1.232910	661.73
45	0.014028	9.570529	38.93
50	0.014323	0.546040	0.00
55	0.014216	0.000000	0.00
60	0.016159	0.000000	0.00
65	0.018798	0.000000	0.00
70	0.019122	0.000000	0.00
75	0.020425	0.000000	0.00
	0.00	0.000000	

Total	100.00	11.349479	778.50

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.245623	0.000000	0.00
10	0.198626	0.000000	0.00
15	0.165577	0.000000	0.00
20	0.143331	0.000000	0.00
	0.00	0.000000	

Future - Floral to Thompson

25		0.132483	0.00
0.00		0.000000	
30		0.123366	0.00
0.00		0.000000	
35		0.117415	77.85
10.00		9.140758	
40		0.114461	661.73
85.00		75.741705	
45		0.113507	38.93
5.00		4.418260	
50		0.116617	0.00
0.00		0.000000	
55		0.121114	0.00
0.00		0.000000	
60		0.130276	0.00
0.00		0.000000	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	89.300723	778.50

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	
0.00	0.000000		
10	0.006173	0.00	
0.00	0.000000		
15	0.003611	0.00	
0.00	0.000000		
20	0.002499	0.00	
0.00	0.000000		
25	0.002125	0.00	
0.00	0.000000		
30	0.001855	0.00	
0.00	0.000000		
35	0.001668	77.85	
10.00	0.129854		
40	0.001549	661.73	
85.00	1.025012		
45	0.001482	38.93	
5.00	0.057687		
50	0.001490	0.00	
0.00	0.000000		
55	0.001571	0.00	
0.00	0.000000		
60	0.001751	0.00	
0.00	0.000000		
65	0.002070	0.00	
0.00	0.000000		
70	0.002555	0.00	
0.00	0.000000		
75	0.003351	0.00	
0.00	0.000000		

Future - Floral to Thompson

Total	100.00	1.212553	778.50
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Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1,120.506181	0.00
0.00	0.000000	
10	852.755297	0.00
0.00	0.000000	
15	672.761381	0.00
0.00	0.000000	
20	550.898472	0.00
0.00	0.000000	
25	470.771042	0.00
0.00	0.000000	
30	416.722639	0.00
0.00	0.000000	
35	381.825650	77.85
10.00	29,725.126853	
40	361.951439	661.73
85.00	239,512.315972	
45	354.906995	38.93
5.00	13,814.754780	
50	359.987591	0.00
0.00	0.000000	
55	377.841830	0.00
0.00	0.000000	
60	410.603543	0.00
0.00	0.000000	
65	462.317805	0.00
0.00	0.000000	
70	466.031341	0.00
0.00	0.000000	
75	471.722636	0.00
0.00	0.000000	
<hr style="border-top: 1px dashed black;"/>		
Total	283,052.197605	778.50
100.00		

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.443585	0.00
0.00	0.000000	
10	1.248371	0.00
0.00	0.000000	
15	1.103416	0.00
0.00	0.000000	
20	0.994387	0.00
0.00	0.000000	
25	0.913522	0.00
0.00	0.000000	
30	0.848160	0.00
0.00	0.000000	
35	0.797444	77.85
10.00	62.081015	

Future - Floral to Thompson		
40	0.760222	661.73
85.00	503.057903	
45	0.737532	38.93
5.00	28.708433	
50	0.733530	0.00
0.00	0.000000	
55	0.753438	0.00
0.00	0.000000	
60	0.809441	0.00
0.00	0.000000	
65	0.924364	0.00
0.00	0.000000	
70	1.162411	0.00
0.00	0.000000	
75	1.580251	0.00
0.00	0.000000	

Total	593.847351	778.50
100.00		

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.000896	0.00
0.00	0.000000	
10	0.000615	0.00
0.00	0.000000	
15	0.000442	0.00
0.00	0.000000	
20	0.000344	0.00
0.00	0.000000	
25	0.000287	0.00
0.00	0.000000	
30	0.000252	0.00
0.00	0.000000	
35	0.000233	77.85
10.00	0.018139	
40	0.000229	661.73
85.00	0.151535	
45	0.000233	38.93
5.00	0.009070	
50	0.000254	0.00
0.00	0.000000	
55	0.000290	0.00
0.00	0.000000	
60	0.000351	0.00
0.00	0.000000	
65	0.000446	0.00
0.00	0.000000	
70	0.000583	0.00
0.00	0.000000	
75	0.000807	0.00
0.00	0.000000	

Total	0.178744	778.50
100.00		

Pollutant Name : BENZENE

Future - Floral to Thompson

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004540	0.000000	0.00
0.00		0.000000	
10	0.003034	0.000000	0.00
0.00		0.000000	
15	0.002108	0.000000	0.00
0.00		0.000000	
20	0.001610	0.000000	0.00
0.00		0.000000	
25	0.001343	0.000000	0.00
0.00		0.000000	
30	0.001175	0.000000	0.00
0.00		0.000000	
35	0.001082	0.084234	77.85
10.00		0.084234	
40	0.001053	0.696796	661.73
85.00		0.696796	
45	0.001062	0.041338	38.93
5.00		0.041338	
50	0.001143	0.000000	0.00
0.00		0.000000	
55	0.001294	0.000000	0.00
0.00		0.000000	
60	0.001548	0.000000	0.00
0.00		0.000000	
65	0.001955	0.000000	0.00
0.00		0.000000	
70	0.002535	0.000000	0.00
0.00		0.000000	
75	0.003480	0.000000	0.00
0.00		0.000000	

Total		0.822368	778.50
	100.00		

Po ll utant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000187	0.000000	0.00
0.00		0.000000	
10	0.000131	0.000000	0.00
0.00		0.000000	
15	0.000097	0.000000	0.00
0.00		0.000000	
20	0.000076	0.000000	0.00
0.00		0.000000	
25	0.000063	0.000000	0.00
0.00		0.000000	
30	0.000055	0.000000	0.00
0.00		0.000000	
35	0.000051	0.000000	77.85
10.00		0.003970	
40	0.000051	0.033748	661.73
85.00		0.033748	
45	0.000052	0.002024	38.93
5.00		0.002024	
50	0.000057	0.000000	0.00
0.00		0.000000	

Future - Floral to Thompson

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	0.00	0.000065	0.000000	0.00
60	0.00	0.000079	0.000000	0.00
65	0.00	0.000101	0.000000	0.00
70	0.00	0.000132	0.000000	0.00
75	0.00	0.000183	0.000000	0.00
----- Total			0.039742	778.50

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.004466	0.00
10	0.002624	0.00
15	0.001467	0.00
20	0.000985	0.00
25	0.000844	0.00
30	0.000737	0.00
35	0.000658	77.85
40	0.000602	661.73
45	0.000566	38.93
50	0.000555	0.00
55	0.000568	0.00
60	0.000612	0.00
65	0.000700	0.00
70	0.000843	0.00
75	0.001078	0.00
----- Total		778.50

Idling Emissions (grams) (Currentl y NOT Avai labl e)

Future - Floral to Thompson

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
20.107515 0.017070 19.63

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 19.63

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.001178 0.000001 19.63

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.210852 0.000179 19.63

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 19.63

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 19.63

Future - Floral to Thompson

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	51.887364	0.051887
0.000057196		
S02	2.840785	0.002841
0.000003131		
Di esel _PM	1.793664	0.001794
0.000001977		
PM2.5	10.152847	0.010153
0.000011192		
PM10	11.349479	0.011349
0.000012511		
NOX	89.300723	0.089301
0.000098437		
FORMALDEHYDE	1.212553	0.001213
0.000001337		
C02	283,052.197605	283.052198
0.312011639		
CO	593.847351	0.593847
0.000654605		
BUTADIENE	0.179922	0.000180
0.000000198		
BENZENE	1.033221	0.001033
0.000001139		
ACROLEIN	0.039742	0.000040
0.000000044		
ACETALDEHYDE	0.471615	0.000472
0.000000520		

 END-----

Future - Highland to Floral

Title : Future - Highland to Floral
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 11:02 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 857
 Volume (vph) : 0.5
 Road Length(mi) :
 Number of Hours : 1
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 (mph) 70 >75
 % 10 85 5

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 (mph) 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	42.85
10.00	1.796615	
40	0.040738	364.23
85.00	14.837798	
45	0.040036	21.43
5.00	0.857771	
50	0.043542	0.00

Future - Highland to Floral

0.00	0.000000	
55	0.047415	0.00
0.00	0.000000	
60	0.056848	0.00
0.00	0.000000	
65	0.070315	0.00
0.00	0.000000	
70	0.090057	0.00
0.00	0.000000	
75	0.121861	0.00
0.00	0.000000	

Total	100.00	17.492184
		428.50

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.011305	0.00
0.00	0.000000	
10	0.007585	0.00
0.00	0.000000	
15	0.006023	0.00
0.00	0.000000	
20	0.005348	0.00
0.00	0.000000	
25	0.004568	0.00
0.00	0.000000	
30	0.003424	0.00
0.00	0.000000	
35	0.003643	42.85
10.00	0.156103	
40	0.003643	364.23
85.00	1.326872	
45	0.003764	21.43
5.00	0.080644	
50	0.003741	0.00
0.00	0.000000	
55	0.003741	0.00
0.00	0.000000	
60	0.003620	0.00
0.00	0.000000	
65	0.004862	0.00
0.00	0.000000	
70	0.004710	0.00
0.00	0.000000	
75	0.004505	0.00
0.00	0.000000	

Total	100.00	1.563618
		428.50

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.005185	0.00
0.00	0.000000	

Future - Highland to Floral

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	0.00
0.00		0.000000	
35		0.002409	42.85
10.00		0.103226	
40		0.002284	364.23
85.00		0.831890	
45		0.002434	21.43
5.00		0.052148	
50		0.002609	0.00
0.00		0.000000	
55		0.002752	0.00
0.00		0.000000	
60		0.003118	0.00
0.00		0.000000	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	0.987264	428.50

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi l e)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	
0.00	0.000000		
10	0.053692	0.00	
0.00	0.000000		
15	0.037357	0.00	
0.00	0.000000		
20	0.026983	0.00	
0.00	0.000000		
25	0.021476	0.00	
0.00	0.000000		
30	0.017483	0.00	
0.00	0.000000		
35	0.014311	42.85	
10.00	0.613226		
40	0.012928	364.23	
85.00	4.708701		
45	0.012433	21.43	
5.00	0.266377		
50	0.012848	0.00	
0.00	0.000000		
55	0.012818	0.00	
0.00	0.000000		
60	0.014948	0.00	
0.00	0.000000		
65	0.016518	0.00	

Future - Highland to Floral

0.00	0.000000	
70	0.018259	0.00
0.00	0.000000	
75	0.018453	0.00
0.00	0.000000	

Total	5.588304	428.50
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.087119	0.00
0.00	0.000000	
10	0.056770	0.00
0.00	0.000000	
15	0.039822	0.00
0.00	0.000000	
20	0.029525	0.00
0.00	0.000000	
25	0.022813	0.00
0.00	0.000000	
30	0.017789	0.00
0.00	0.000000	
35	0.015837	42.85
10.00	0.678615	
40	0.014463	364.23
85.00	5.267786	
45	0.014028	21.43
5.00	0.300550	
50	0.014323	0.00
0.00	0.000000	
55	0.014216	0.00
0.00	0.000000	
60	0.016159	0.00
0.00	0.000000	
65	0.018798	0.00
0.00	0.000000	
70	0.019122	0.00
0.00	0.000000	
75	0.020425	0.00
0.00	0.000000	

Total	6.246952	428.50
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.245623	0.00
0.00	0.000000	
10	0.198626	0.00
0.00	0.000000	
15	0.165577	0.00
0.00	0.000000	
20	0.143331	0.00
0.00	0.000000	

Future - Highland to Floral

25		0.132483	0.00
0.00		0.000000	
30		0.123366	0.00
0.00		0.000000	
35		0.117415	42.85
10.00		5.031233	
40		0.114461	364.23
85.00		41.689558	
45		0.113507	21.43
5.00		2.431887	
50		0.116617	0.00
0.00		0.000000	
55		0.121114	0.00
0.00		0.000000	
60		0.130276	0.00
0.00		0.000000	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	49.152678	428.50

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	
0.00	0.000000		
10	0.006173	0.00	
0.00	0.000000		
15	0.003611	0.00	
0.00	0.000000		
20	0.002499	0.00	
0.00	0.000000		
25	0.002125	0.00	
0.00	0.000000		
30	0.001855	0.00	
0.00	0.000000		
35	0.001668	42.85	
10.00	0.071474		
40	0.001549	364.23	
85.00	0.564185		
45	0.001482	21.43	
5.00	0.031752		
50	0.001490	0.00	
0.00	0.000000		
55	0.001571	0.00	
0.00	0.000000		
60	0.001751	0.00	
0.00	0.000000		
65	0.002070	0.00	
0.00	0.000000		
70	0.002555	0.00	
0.00	0.000000		
75	0.003351	0.00	
0.00	0.000000		

Total 100.00 Future - Highland to Floral 0.667410 428.50

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1,120.506181		0.00
0.00	0.000000		
10	852.755297		0.00
0.00	0.000000		
15	672.761381		0.00
0.00	0.000000		
20	550.898472		0.00
0.00	0.000000		
25	470.771042		0.00
0.00	0.000000		
30	416.722639		0.00
0.00	0.000000		
35	381.825650		42.85
10.00	16,361.229103		
40	361.951439		364.23
85.00	131,831.762870		
45	354.906995		21.43
5.00	7,603.882368		
50	359.987591		0.00
0.00	0.000000		
55	377.841830		0.00
0.00	0.000000		
60	410.603543		0.00
0.00	0.000000		
65	462.317805		0.00
0.00	0.000000		
70	466.031341		0.00
0.00	0.000000		
75	471.722636		0.00
0.00	0.000000		

Total	100.00	155,796.874340	428.50

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1.443585		0.00
0.00	0.000000		
10	1.248371		0.00
0.00	0.000000		
15	1.103416		0.00
0.00	0.000000		
20	0.994387		0.00
0.00	0.000000		
25	0.913522		0.00
0.00	0.000000		
30	0.848160		0.00
0.00	0.000000		
35	0.797444		42.85
10.00	34.170475		

Future - Highland to Floral

40		0.760222	364.23
85.00		276.891858	
45		0.737532	21.43
5.00		15.801623	
50		0.733530	0.00
0.00		0.000000	
55		0.753438	0.00
0.00		0.000000	
60		0.809441	0.00
0.00		0.000000	
65		0.924364	0.00
0.00		0.000000	
70		1.162411	0.00
0.00		0.000000	
75		1.580251	0.00
0.00		0.000000	

Total	100.00	326.863956	428.50

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000896	0.00	0.00
0.00	0.000000		
10	0.000615	0.00	0.00
0.00	0.000000		
15	0.000442	0.00	0.00
0.00	0.000000		
20	0.000344	0.00	0.00
0.00	0.000000		
25	0.000287	0.00	0.00
0.00	0.000000		
30	0.000252	0.00	0.00
0.00	0.000000		
35	0.000233	42.85	
10.00	0.009984		
40	0.000229	364.23	
85.00	0.083408		
45	0.000233	21.43	
5.00	0.004992		
50	0.000254	0.00	
0.00	0.000000		
55	0.000290	0.00	
0.00	0.000000		
60	0.000351	0.00	
0.00	0.000000		
65	0.000446	0.00	
0.00	0.000000		
70	0.000583	0.00	
0.00	0.000000		
75	0.000807	0.00	
0.00	0.000000		

Total	100.00	0.098384	428.50

Pollutant Name : BENZENE

Future - Highland to Floral

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004540		0.00
0.00	0.000000		
10	0.003034		0.00
0.00	0.000000		
15	0.002108		0.00
0.00	0.000000		
20	0.001610		0.00
0.00	0.000000		
25	0.001343		0.00
0.00	0.000000		
30	0.001175		0.00
0.00	0.000000		
35	0.001082		42.85
10.00	0.046364		
40	0.001053		364.23
85.00	0.383529		
45	0.001062		21.43
5.00	0.022753		
50	0.001143		0.00
0.00	0.000000		
55	0.001294		0.00
0.00	0.000000		
60	0.001548		0.00
0.00	0.000000		
65	0.001955		0.00
0.00	0.000000		
70	0.002535		0.00
0.00	0.000000		
75	0.003480		0.00
0.00	0.000000		

Total			428.50
	100.00	0.452646	

Po ll utant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000187		0.00
0.00	0.000000		
10	0.000131		0.00
0.00	0.000000		
15	0.000097		0.00
0.00	0.000000		
20	0.000076		0.00
0.00	0.000000		
25	0.000063		0.00
0.00	0.000000		
30	0.000055		0.00
0.00	0.000000		
35	0.000051		42.85
10.00	0.002185		
40	0.000051		364.23
85.00	0.018575		
45	0.000052		21.43
5.00	0.001114		
50	0.000057		0.00
0.00	0.000000		

Future - Highland to Floral

Speed (mph)	Percentage	Emission Factor (grams/mile)	Emissions	VMT
55	0.00	0.000065	0.000000	0.00
60	0.00	0.000079	0.000000	0.00
65	0.00	0.000101	0.000000	0.00
70	0.00	0.000132	0.000000	0.00
75	0.00	0.000183	0.000000	0.00
----- Total			0.021875	428.50

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.004466	0.00
10	0.002624	0.00
15	0.001467	0.00
20	0.000985	0.00
25	0.000844	0.00
30	0.000737	0.00
35	0.000658	42.85
40	0.000602	364.23
45	0.000566	21.43
50	0.000555	0.00
55	0.000568	0.00
60	0.000612	0.00
65	0.000700	0.00
70	0.000843	0.00
75	0.001078	0.00
----- Total		
100.00	0.259585	428.50

Idling Emissions (grams) (Currently NOT Available)

Future - Highland to Floral

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
11.067528 0.017070 10.81

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.81

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000648 0.000001 10.81

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.116057 0.000179 10.81

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.81

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 10.81

Future - Highland to Floral

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	28.559712	0.028560
0.000031482		
S02	1.563618	0.001564
0.000001724		
Di esel _PM	0.987264	0.000987
0.000001088		
PM2.5	5.588304	0.005588
0.000006160		
PM10	6.246952	0.006247
0.000006886		
NOX	49.152678	0.049153
0.000054182		
FORMALDEHYDE	0.667410	0.000667
0.000000736		
C02	155,796.874340	155.796874
0.171736657		
CO	326.863956	0.326864
0.000360306		
BUTADIENE	0.099032	0.000099
0.000000109		
BENZENE	0.568703	0.000569
0.000000627		
ACROLEIN	0.021875	0.000022
0.000000024		
ACETALDEHYDE	0.259585	0.000260
0.000000286		

END-----

Future - Manning to Highland

Title : Future - Manning to Highland
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 11:00 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT :
 Volume (vph) : 1505
 Road Length(mi) : 2.25
 Number of Hours : 1
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 (mph) 70 >75
 % 10 85 5

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :
 VMT Distribution(%) by Speed(mph)
 5 10 15 20 25 30 35 40 45 50
 55 60 65 (mph) 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	0.00
0.00	0.000000	
40	0.040738	338.63
10.00	13.794905	
45	0.040036	2,878.31
85.00	115.236119	
50	0.043542	169.31

Future - Manning to Highland

Speed (mph)	VT-Mileage	Emission Factor (grams/mile)	Emissions
5	5.00	7.372205	0.00
55	0.00	0.047415	0.00
60	0.00	0.056848	0.00
65	0.00	0.070315	0.00
70	0.00	0.090057	0.00
75	0.00	0.121861	0.00

Total	100.00	136.403229	3,386.25

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.011305	0.00
0.00	0.000000	
10	0.007585	0.00
0.00	0.000000	
15	0.006023	0.00
0.00	0.000000	
20	0.005348	0.00
0.00	0.000000	
25	0.004568	0.00
0.00	0.000000	
30	0.003424	0.00
0.00	0.000000	
35	0.003643	0.00
0.00	0.000000	
40	0.003643	338.63
10.00	1.233611	
45	0.003764	2,878.31
85.00	10.833968	
50	0.003741	169.31
5.00	0.633398	
55	0.003741	0.00
0.00	0.000000	
60	0.003620	0.00
0.00	0.000000	
65	0.004862	0.00
0.00	0.000000	
70	0.004710	0.00
0.00	0.000000	
75	0.004505	0.00
0.00	0.000000	

Total	100.00	12.700977

Pollutant Name : Diesel_PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.005185	0.00
0.00	0.000000	

Future - Manning to Highland

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	0.00
0.00		0.000000	
35		0.002409	0.00
0.00		0.000000	
40		0.002284	338.63
10.00		0.773420	
45		0.002434	2,878.31
85.00		7.005813	
50		0.002609	169.31
5.00		0.441736	
55		0.002752	0.00
0.00		0.000000	
60		0.003118	0.00
0.00		0.000000	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	8.220968	3,386.25

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	
0.00	0.000000		
10	0.053692	0.00	
0.00	0.000000		
15	0.037357	0.00	
0.00	0.000000		
20	0.026983	0.00	
0.00	0.000000		
25	0.021476	0.00	
0.00	0.000000		
30	0.017483	0.00	
0.00	0.000000		
35	0.014311	0.00	
0.00	0.000000		
40	0.012928	338.63	
10.00	4.377744		
45	0.012433	2,878.31	
85.00	35.786059		
50	0.012848	169.31	
5.00	2.175327		
55	0.012818	0.00	
0.00	0.000000		
60	0.014948	0.00	
0.00	0.000000		
65	0.016518	0.00	

Future - Manning to Highland

70	0.00	0.018259	0.000000	0.00
75	0.00	0.018453	0.000000	0.00
	0.00		0.000000	
<hr/>				
Total	100.00		42.339130	3,386.25

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed	
VMT-Speed Di stri buti on (%)				
5	0.087119	0.000000	0.00	
10	0.056770	0.000000	0.00	
15	0.039822	0.000000	0.00	
20	0.029525	0.000000	0.00	
25	0.022813	0.000000	0.00	
30	0.017789	0.000000	0.00	
35	0.015837	0.000000	0.00	
40	0.014463	0.000000	338.63	
45	0.014028	4.897533	2,878.31	
50	0.014323	40.376968	169.31	
55	0.014216	2.425063	0.00	
60	0.016159	0.000000	0.00	
65	0.018798	0.000000	0.00	
70	0.019122	0.000000	0.00	
75	0.020425	0.000000	0.00	
		0.000000		
<hr/>				
Total	100.00	47.699564	3,386.25	

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.245623	0.000000	0.00
10	0.198626	0.000000	0.00
15	0.165577	0.000000	0.00
20	0.143331	0.000000	0.00
		0.000000	

Future - Manning to Highland

25		0.132483	0.00
0.00		0.000000	
30		0.123366	0.00
0.00		0.000000	
35		0.117415	0.00
0.00		0.000000	
40		0.114461	338.63
10.00		38.759356	
45		0.113507	2,878.31
85.00		326.708617	
50		0.116617	169.31
5.00		19.744716	
55		0.121114	0.00
0.00		0.000000	
60		0.130276	0.00
0.00		0.000000	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	385.212689	3,386.25

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	
0.00	0.000000		
10	0.006173	0.00	
0.00	0.000000		
15	0.003611	0.00	
0.00	0.000000		
20	0.002499	0.00	
0.00	0.000000		
25	0.002125	0.00	
0.00	0.000000		
30	0.001855	0.00	
0.00	0.000000		
35	0.001668	0.00	
0.00	0.000000		
40	0.001549	338.63	
10.00	0.524530		
45	0.001482	2,878.31	
85.00	4.265659		
50	0.001490	169.31	
5.00	0.252276		
55	0.001571	0.00	
0.00	0.000000		
60	0.001751	0.00	
0.00	0.000000		
65	0.002070	0.00	
0.00	0.000000		
70	0.002555	0.00	
0.00	0.000000		
75	0.003351	0.00	
0.00	0.000000		

Total 100.00 Future - Manning to Highland 5.042465 3,386.25

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1,120.506181		0.00
0.00	0.000000		
10	852.755297		0.00
0.00	0.000000		
15	672.761381		0.00
0.00	0.000000		
20	550.898472		0.00
0.00	0.000000		
25	470.771042		0.00
0.00	0.000000		
30	416.722639		0.00
0.00	0.000000		
35	381.825650		0.00
0.00	0.000000		
40	361.951439		338.63
10.00	122,565.806031		
45	354.906995		2,878.31
85.00	1,021,533.240046		
50	359.987591		169.31
5.00	60,950.399001		
55	377.841830		0.00
0.00	0.000000		
60	410.603543		0.00
0.00	0.000000		
65	462.317805		0.00
0.00	0.000000		
70	466.031341		0.00
0.00	0.000000		
75	471.722636		0.00
0.00	0.000000		

Total	100.00	1,205,049.445079	3,386.25

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1.443585		0.00
0.00	0.000000		
10	1.248371		0.00
0.00	0.000000		
15	1.103416		0.00
0.00	0.000000		
20	0.994387		0.00
0.00	0.000000		
25	0.913522		0.00
0.00	0.000000		
30	0.848160		0.00
0.00	0.000000		
35	0.797444		0.00
0.00	0.000000		

Future - Manning to Highland			
40		0.760222	338.63
10.00		257.430175	
45		0.737532	2,878.31
85.00		2,122.847575	
50		0.733530	169.31
5.00		124.195798	
55		0.753438	0.00
0.00		0.000000	
60		0.809441	0.00
0.00		0.000000	
65		0.924364	0.00
0.00		0.000000	
70		1.162411	0.00
0.00		0.000000	
75		1.580251	0.00
0.00		0.000000	

Total	100.00	2,504.473548	3,386.25

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000896	0.00	0.00
0.00	0.000000		
10	0.000615	0.00	0.00
0.00	0.000000		
15	0.000442	0.00	0.00
0.00	0.000000		
20	0.000344	0.00	0.00
0.00	0.000000		
25	0.000287	0.00	0.00
0.00	0.000000		
30	0.000252	0.00	0.00
0.00	0.000000		
35	0.000233	0.00	0.00
0.00	0.000000		
40	0.000229	338.63	338.63
10.00	0.077545		
45	0.000233	2,878.31	2,878.31
85.00	0.670647		
50	0.000254	169.31	169.31
5.00	0.043005		
55	0.000290	0.00	0.00
0.00	0.000000		
60	0.000351	0.00	0.00
0.00	0.000000		
65	0.000446	0.00	0.00
0.00	0.000000		
70	0.000583	0.00	0.00
0.00	0.000000		
75	0.000807	0.00	0.00
0.00	0.000000		

Total	100.00	0.791197	3,386.25

Pollutant Name : BENZENE

Future - Manning to High and		Emissions by Speed	
speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004540	0.000000	0.00
0.00	0.000000		
10	0.003034	0.000000	0.00
0.00	0.000000		
15	0.002108	0.000000	0.00
0.00	0.000000		
20	0.001610	0.000000	0.00
0.00	0.000000		
25	0.001343	0.000000	0.00
0.00	0.000000		
30	0.001175	0.000000	0.00
0.00	0.000000		
35	0.001082	0.000000	0.00
0.00	0.000000		
40	0.001053	0.356572	338.63
10.00	0.001062		
45	3.056768		2,878.31
85.00			
50	0.001143	0.193524	169.31
5.00	0.001294		
55	0.000000		0.00
0.00	0.000000		
60	0.001548	0.000000	0.00
0.00	0.000000		
65	0.001955	0.000000	0.00
0.00	0.000000		
70	0.002535	0.000000	0.00
0.00	0.000000		
75	0.003480	0.000000	0.00
0.00	0.000000		

Total		3.606864	3,386.25
100.00			

Po ll utant Name : ACROLEIN

Future - Manning to High and		Emissions by Speed	
speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000187	0.000000	0.00
0.00	0.000000		
10	0.000131	0.000000	0.00
0.00	0.000000		
15	0.000097	0.000000	0.00
0.00	0.000000		
20	0.000076	0.000000	0.00
0.00	0.000000		
25	0.000063	0.000000	0.00
0.00	0.000000		
30	0.000055	0.000000	0.00
0.00	0.000000		
35	0.000051	0.000000	0.00
0.00	0.000000		
40	0.000051	0.017270	338.63
10.00	0.000052		
45	0.149672		2,878.31
85.00			
50	0.000057	0.009651	169.31
5.00			

Future - Manning to Highland

55		0.000065	0.00
0.00		0.000000	
60		0.000079	0.00
0.00		0.000000	
65		0.000101	0.00
0.00		0.000000	
70		0.000132	0.00
0.00		0.000000	
75		0.000183	0.00
0.00		0.000000	

Total	100.00	0.176593	3,386.25

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004466	0.00	0.00
0.00	0.000000		
10	0.002624	0.00	0.00
0.00	0.000000		
15	0.001467	0.00	0.00
0.00	0.000000		
20	0.000985	0.00	0.00
0.00	0.000000		
25	0.000844	0.00	0.00
0.00	0.000000		
30	0.000737	0.00	0.00
0.00	0.000000		
35	0.000658	0.00	0.00
0.00	0.000000		
40	0.000602	338.63	
10.00	0.203852		
45	0.000566	2,878.31	
85.00	1.629125		
50	0.000555	169.31	
5.00	0.093968		
55	0.000568	0.00	0.00
0.00	0.000000		
60	0.000612	0.00	0.00
0.00	0.000000		
65	0.000700	0.00	0.00
0.00	0.000000		
70	0.000843	0.00	0.00
0.00	0.000000		
75	0.001078	0.00	0.00
0.00	0.000000		

Total	100.00	1.926946	3,386.25

 Idling Emi ssi ons (grams) (Currentl y NOT Avai l abl e)

Future - Manning to Highland

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
77.649083 0.017070 75.81

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 75.81

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.004549 0.000001 75.81

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.814246 0.000179 75.81

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 75.81

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 75.81

Future - Manning to Highland

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	214.052312	0.214052
0.000235952		
S02	12.700977	0.012701
0.000014000		
Di esel _PM	8.220968	0.008221
0.000009062		
PM2.5	42.339130	0.042339
0.000046671		
PM10	47.699564	0.047700
0.000052580		
NOX	385.212689	0.385213
0.000424624		
FORMALDEHYDE	5.042465	0.005042
0.000005558		
C02	1,205,049.445079	1,205.049445
1.328339634		
CO	2,504.473548	2.504474
0.002760710		
BUTADIENE	0.795746	0.000796
0.000000877		
BENZENE	4.421111	0.004421
0.000004873		
ACROLEIN	0.176593	0.000177
0.000000195		
ACETALDEHYDE	1.926946	0.001927
0.000002124		

END

Future - Merced to Manning

Title : Future - Merced to Manning
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 10:57 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Number of Hours : Total VMT Volume (vph) Road Length(mi)
 1 : 1089 2.25

VMT Distribution(%) by Speed(mph)
 (mph) 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 % 10 85

Offpeak User Input:
 Number of Hours : Total VMT Volume (vph) Road Length(mi)

VMT Distribution(%) by Speed(mph)
 (mph) 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	0.00
0.00	0.000000	
40	0.040738	0.00
0.00	0.000000	
45	0.040036	245.03
10.00	9.809821	
50	0.043542	2,082.71

Future - Merced to Manning

Speed (mph)	VT-Mileage	Emission Factor (grams/mile)	Emissions
85.00	90.685468		
55	0.047415		122.51
5.00	5.808930		
60	0.056848		0.00
0.00	0.000000		
65	0.070315		0.00
0.00	0.000000		
70	0.090057		0.00
0.00	0.000000		
75	0.121861		0.00
0.00	0.000000		
----- Total			2,450.25
	100.00	106.304219	

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed	
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed		
5	0.011305	0.00	
0.00	0.000000		
10	0.007585	0.00	
0.00	0.000000		
15	0.006023	0.00	
0.00	0.000000		
20	0.005348	0.00	
0.00	0.000000		
25	0.004568	0.00	
0.00	0.000000		
30	0.003424	0.00	
0.00	0.000000		
35	0.003643	0.00	
0.00	0.000000		
40	0.003643	0.00	
0.00	0.000000		
45	0.003764	245.03	
10.00	0.922274		
50	0.003741	2,082.71	
85.00	7.791427		
55	0.003741	122.51	
5.00	0.458319		
60	0.003620	0.00	
0.00	0.000000		
65	0.004862	0.00	
0.00	0.000000		
70	0.004710	0.00	
0.00	0.000000		
75	0.004505	0.00	
0.00	0.000000		
----- Total			2,450.25
	100.00	9.172021	

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.005185	0.00
0.00	0.000000	

Future - Merced to Manning		
10		0.004241
0.00		0.000000
15		0.003560
0.00		0.000000
20		0.003071
0.00		0.000000
25		0.002638
0.00		0.000000
30		0.002372
0.00		0.000000
35		0.002409
0.00		0.000000
40		0.002284
0.00		0.000000
45		0.002434
10.00		0.596391
50		0.002609
85.00		5.433797
55		0.002752
5.00		0.337154
60		0.003118
0.00		0.000000
65		0.003454
0.00		0.000000
70		0.003855
0.00		0.000000
75		0.004382
0.00		0.000000

Total		
	100.00	6.367342
		2,450.25

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi l e)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.080752	0.00
0.00	0.000000	
10	0.053692	0.00
0.00	0.000000	
15	0.037357	0.00
0.00	0.000000	
20	0.026983	0.00
0.00	0.000000	
25	0.021476	0.00
0.00	0.000000	
30	0.017483	0.00
0.00	0.000000	
35	0.014311	0.00
0.00	0.000000	
40	0.012928	0.00
0.00	0.000000	
45	0.012433	245.03
10.00	3.046396	
50	0.012848	2,082.71
85.00	26.758690	
55	0.012818	122.51
5.00	1.570365	
60	0.014948	0.00
0.00	0.000000	
65	0.016518	0.00

Future - Merced to Manning

0.00	0.00000	
70	0.018259	0.00
0.00	0.00000	
75	0.018453	0.00
0.00	0.00000	

Total	31.375451	2,450.25
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.087119	0.00
0.00	0.000000	
10	0.056770	0.00
0.00	0.000000	
15	0.039822	0.00
0.00	0.000000	
20	0.029525	0.00
0.00	0.000000	
25	0.022813	0.00
0.00	0.000000	
30	0.017789	0.00
0.00	0.000000	
35	0.015837	0.00
0.00	0.000000	
40	0.014463	0.00
0.00	0.000000	
45	0.014028	245.03
10.00	3.437211	
50	0.014323	2,082.71
85.00	29.830691	
55	0.014216	122.51
5.00	1.741638	
60	0.016159	0.00
0.00	0.000000	
65	0.018798	0.00
0.00	0.000000	
70	0.019122	0.00
0.00	0.000000	
75	0.020425	0.00
0.00	0.000000	

Total	35.009540	2,450.25
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.245623	0.00
0.00	0.000000	
10	0.198626	0.00
0.00	0.000000	
15	0.165577	0.00
0.00	0.000000	
20	0.143331	0.00
0.00	0.000000	

Future - Merced to Manning			
25		0.132483	0.00
0.00		0.000000	
30		0.123366	0.00
0.00		0.000000	
35		0.117415	0.00
0.00		0.000000	
40		0.114461	0.00
0.00		0.000000	
45		0.113507	245.03
10.00		27.812053	
50		0.116617	2,082.71
85.00		242.879684	
55		0.121114	122.51
5.00		14.837979	
60		0.130276	0.00
0.00		0.000000	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	285.529715	2,450.25

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	0.00
0.00	0.000000		
10	0.006173	0.00	0.00
0.00	0.000000		
15	0.003611	0.00	0.00
0.00	0.000000		
20	0.002499	0.00	0.00
0.00	0.000000		
25	0.002125	0.00	0.00
0.00	0.000000		
30	0.001855	0.00	0.00
0.00	0.000000		
35	0.001668	0.00	0.00
0.00	0.000000		
40	0.001549	0.00	0.00
0.00	0.000000		
45	0.001482	245.03	245.03
10.00	0.363127		
50	0.001490	2,082.71	2,082.71
85.00	3.103242		
55	0.001571	122.51	122.51
5.00	0.192467		
60	0.001751	0.00	0.00
0.00	0.000000		
65	0.002070	0.00	0.00
0.00	0.000000		
70	0.002555	0.00	0.00
0.00	0.000000		
75	0.003351	0.00	0.00
0.00	0.000000		

Total 100.00 Future - Merced to Manning 3.658836 2,450.25

Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1,120.506181		0.00
0.00	0.000000		
10	852.755297		0.00
0.00	0.000000		
15	672.761381		0.00
0.00	0.000000		
20	550.898472		0.00
0.00	0.000000		
25	470.771042		0.00
0.00	0.000000		
30	416.722639		0.00
0.00	0.000000		
35	381.825650		0.00
0.00	0.000000		
40	361.951439		0.00
0.00	0.000000		
45	354.906995		245.03
10.00	86,961.086450		
50	359.987591		2,082.71
85.00	749,750.655621		
55	377.841830		122.51
5.00	46,290.347198		
60	410.603543		0.00
0.00	0.000000		
65	462.317805		0.00
0.00	0.000000		
70	466.031341		0.00
0.00	0.000000		
75	471.722636		0.00
0.00	0.000000		

Total	100.00	883,002.089268	2,450.25

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	1.443585		0.00
0.00	0.000000		
10	1.248371		0.00
0.00	0.000000		
15	1.103416		0.00
0.00	0.000000		
20	0.994387		0.00
0.00	0.000000		
25	0.913522		0.00
0.00	0.000000		
30	0.848160		0.00
0.00	0.000000		
35	0.797444		0.00
0.00	0.000000		

Future - Merced to Manning			
40		0.760222	0.00
0.00		0.000000	
45		0.737532	245.03
10.00		180.713778	
50		0.733530	2,082.71
85.00		1,527.732100	
55		0.753438	122.51
5.00		92.305573	
60		0.809441	0.00
0.00		0.000000	
65		0.924364	0.00
0.00		0.000000	
70		1.162411	0.00
0.00		0.000000	
75		1.580251	0.00
0.00		0.000000	

Total	100.00	1,800.751451	2,450.25

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000896	0.00	0.00
0.00	0.000000		
10	0.000615	0.00	0.00
0.00	0.000000		
15	0.000442	0.00	0.00
0.00	0.000000		
20	0.000344	0.00	0.00
0.00	0.000000		
25	0.000287	0.00	0.00
0.00	0.000000		
30	0.000252	0.00	0.00
0.00	0.000000		
35	0.000233	0.00	0.00
0.00	0.000000		
40	0.000229	0.00	0.00
0.00	0.000000		
45	0.000233	245.03	
10.00	0.057091		
50	0.000254	2,082.71	
85.00	0.529009		
55	0.000290	122.51	
5.00	0.035529		
60	0.000351	0.00	
0.00	0.000000		
65	0.000446	0.00	
0.00	0.000000		
70	0.000583	0.00	
0.00	0.000000		
75	0.000807	0.00	
0.00	0.000000		

Total	100.00	0.621628	2,450.25

Pollutant Name : BENZENE

Future - Merced to Manning

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004540	0.000000	0.00
0.00		0.000000	
10	0.003034	0.000000	0.00
0.00		0.000000	
15	0.002108	0.000000	0.00
0.00		0.000000	
20	0.001610	0.000000	0.00
0.00		0.000000	
25	0.001343	0.000000	0.00
0.00		0.000000	
30	0.001175	0.000000	0.00
0.00		0.000000	
35	0.001082	0.000000	0.00
0.00		0.000000	
40	0.001053	0.000000	0.00
0.00		0.000000	
45	0.001062	0.260217	245.03
10.00			
50	0.001143	2.380540	2,082.71
85.00			
55	0.001294	0.158531	122.51
5.00			
60	0.001548	0.000000	0.00
0.00		0.000000	
65	0.001955	0.000000	0.00
0.00		0.000000	
70	0.002535	0.000000	0.00
0.00		0.000000	
75	0.003480	0.000000	0.00
0.00		0.000000	

Total		2.799288	2,450.25
100.00			

Pollutant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000187	0.000000	0.00
0.00		0.000000	
10	0.000131	0.000000	0.00
0.00		0.000000	
15	0.000097	0.000000	0.00
0.00		0.000000	
20	0.000076	0.000000	0.00
0.00		0.000000	
25	0.000063	0.000000	0.00
0.00		0.000000	
30	0.000055	0.000000	0.00
0.00		0.000000	
35	0.000051	0.000000	0.00
0.00		0.000000	
40	0.000051	0.000000	0.00
0.00		0.000000	
45	0.000052	0.012741	245.03
10.00			
50	0.000057	0.118715	2,082.71
85.00			

Future - Merced to Manning			
55		0.000065	122.51
5.00		0.007963	
60		0.000079	0.00
0.00		0.000000	
65		0.000101	0.00
0.00		0.000000	
70		0.000132	0.00
0.00		0.000000	
75		0.000183	0.00
0.00		0.000000	

Total	100.00	0.139419	2,450.25

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004466	0.00	0.00
0.00	0.000000		
10	0.002624	0.00	0.00
0.00	0.000000		
15	0.001467	0.00	0.00
0.00	0.000000		
20	0.000985	0.00	0.00
0.00	0.000000		
25	0.000844	0.00	0.00
0.00	0.000000		
30	0.000737	0.00	0.00
0.00	0.000000		
35	0.000658	0.00	0.00
0.00	0.000000		
40	0.000602	0.00	0.00
0.00	0.000000		
45	0.000566	245.03	
10.00	0.138684		
50	0.000555	2,082.71	
85.00	1.155905		
55	0.000568	122.51	
5.00	0.069587		
60	0.000612	0.00	0.00
0.00	0.000000		
65	0.000700	0.00	0.00
0.00	0.000000		
70	0.000843	0.00	0.00
0.00	0.000000		
75	0.001078	0.00	0.00
0.00	0.000000		

Total	100.00	1.364177	2,450.25

Idl i ng Emi ssi ons (grams) (Currentl y NOT Avai l abl e)

Future - Merced to Manning

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
50.520457 0.017070 49.33

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 49.33

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.002960 0.000001 49.33

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.529769 0.000179 49.33

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 49.33

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 49.33

Future - Merced to Manning

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	156.824676	0.156825
0.000172870		
S02	9.172021	0.009172
0.000010110		
Di esel _PM	6.367342	0.006367
0.000007019		
PM2.5	31.375451	0.031375
0.000034586		
PM10	35.009540	0.035010
0.000038591		
NOX	285.529715	0.285530
0.000314743		
FORMALDEHYDE	3.658836	0.003659
0.000004033		
CO2	883,002.089268	883.002089
0.973343191		
CO	1,800.751451	1.800751
0.001984989		
BUTADIENE	0.624588	0.000625
0.000000688		
BENZENE	3.329057	0.003329
0.000003670		
ACROLEIN	0.139419	0.000139
0.000000154		
ACETALDEHYDE	1.364177	0.001364
0.000001504		

END

Future - Mountain View to Sierra

Title : Future - Mountain View to Sierra
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 11:12 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 717
 Volume (vph) : 717
 Road Length(mi) : 2.75
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)
 (mph) 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %
 85 5 10

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)
 (mph) 5 10 15 20 25 30 35 40 45 50
 55 60 65 70 >75
 %

 Runni ng Exhaust Emi ssi ons (grams)

Pollutant Name : TOG_exh

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	0.00
0.00	0.000000	
40	0.040738	0.00
0.00	0.000000	
45	0.040036	0.00
0.00	0.000000	
50	0.043542	197.18

Future - Mountain View to Sierra

Speed (mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
10.00	0.00	8.585394	0.000000	0.00
55	0.047415	79.466947	0.000000	0.00
85.00	0.056848	5.604502	0.000000	0.00
60	0.070315	0.000000	0.000000	0.00
5.00	0.090057	0.000000	0.000000	0.00
65	0.000000	0.000000	0.000000	0.00
0.00	0.121861	0.000000	0.000000	0.00
70	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.000000	0.000000	0.00
75	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.000000	0.000000	0.00

Total	100.00	93.656843		1,971.75

Pollutant Name : SO2

speed(mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
5	0.00	0.011305	0.000000	0.00
0.00	0.000000	0.007585	0.000000	0.00
10	0.00	0.006023	0.000000	0.00
0.00	0.000000	0.005348	0.000000	0.00
15	0.00	0.004568	0.000000	0.00
0.00	0.000000	0.003424	0.000000	0.00
20	0.00	0.003643	0.000000	0.00
0.00	0.000000	0.003643	0.000000	0.00
25	0.00	0.003764	0.000000	0.00
0.00	0.000000	0.003741	0.000000	0.00
30	0.00	0.737632	0.000000	0.00
0.00	0.003741	6.269869	0.000000	0.00
35	0.00	0.003620	0.000000	0.00
0.00	0.356887	0.004862	0.000000	0.00
40	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.004710	0.000000	0.00
45	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.004505	0.000000	0.00
50	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.000000	0.000000	0.00
55	10.00	0.737632	0.000000	197.18
0.00	0.003741	6.269869	0.000000	1,675.99
85.00	0.003620	0.004862	0.000000	98.59
0.00	0.356887	0.000000	0.000000	0.00
60	5.00	0.000000	0.000000	0.00
0.00	0.000000	0.004710	0.000000	0.00
65	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.004505	0.000000	0.00
70	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.000000	0.000000	0.00
75	0.00	0.000000	0.000000	0.00
0.00	0.000000	0.000000	0.000000	0.00

Total	100.00	7.364388		1,971.75

Pollutant Name : Diesel_PM

speed(mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
5	0.00	0.005185	0.000000	0.00
0.00	0.000000	0.000000	0.000000	0.00

Future - Mountain View to Sierra

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	0.00
0.00		0.000000	
35		0.002409	0.00
0.00		0.000000	
40		0.002284	0.00
0.00		0.000000	
45		0.002434	0.00
0.00		0.000000	
50		0.002609	197.18
10.00		0.514430	
55		0.002752	1,675.99
85.00		4.612318	
60		0.003118	98.59
5.00		0.307396	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	5.434143	1,971.75

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	0.00
0.00	0.000000		
10	0.053692	0.00	0.00
0.00	0.000000		
15	0.037357	0.00	0.00
0.00	0.000000		
20	0.026983	0.00	0.00
0.00	0.000000		
25	0.021476	0.00	0.00
0.00	0.000000		
30	0.017483	0.00	0.00
0.00	0.000000		
35	0.014311	0.00	0.00
0.00	0.000000		
40	0.012928	0.00	0.00
0.00	0.000000		
45	0.012433	0.00	0.00
0.00	0.000000		
50	0.012848	197.18	
10.00	2.533304		
55	0.012818	1,675.99	
85.00	21.482808		
60	0.014948	98.59	
5.00	1.473686		
65	0.016518	0.00	

Future - Mountain View to Sierra

0.00	0.00000	
70	0.018259	0.00
0.00	0.00000	
75	0.018453	0.00
0.00	0.00000	

Total	25.489798	1,971.75
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.087119	0.00
0.00	0.00000	
10	0.056770	0.00
0.00	0.00000	
15	0.039822	0.00
0.00	0.00000	
20	0.029525	0.00
0.00	0.00000	
25	0.022813	0.00
0.00	0.00000	
30	0.017789	0.00
0.00	0.00000	
35	0.015837	0.00
0.00	0.00000	
40	0.014463	0.00
0.00	0.00000	
45	0.014028	0.00
0.00	0.00000	
50	0.014323	197.18
10.00	2.824138	
55	0.014216	1,675.99
85.00	23.825838	
60	0.016159	98.59
5.00	1.593075	
65	0.018798	0.00
0.00	0.00000	
70	0.019122	0.00
0.00	0.00000	
75	0.020425	0.00
0.00	0.00000	

Total	28.243051	1,971.75
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.245623	0.00
0.00	0.00000	
10	0.198626	0.00
0.00	0.00000	
15	0.165577	0.00
0.00	0.00000	
20	0.143331	0.00
0.00	0.00000	

Future - Mountain View to Sierra

25		0.132483	0.00
0.00		0.000000	
30		0.123366	0.00
0.00		0.000000	
35		0.117415	0.00
0.00		0.000000	
40		0.114461	0.00
0.00		0.000000	
45		0.113507	0.00
0.00		0.000000	
50		0.116617	197.18
10.00		22.993957	
55		0.121114	1,675.99
85.00		202.985550	
60		0.130276	98.59
5.00		12.843585	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	238.823092	1,971.75

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	
0.00	0.000000		
10	0.006173	0.00	
0.00	0.000000		
15	0.003611	0.00	
0.00	0.000000		
20	0.002499	0.00	
0.00	0.000000		
25	0.002125	0.00	
0.00	0.000000		
30	0.001855	0.00	
0.00	0.000000		
35	0.001668	0.00	
0.00	0.000000		
40	0.001549	0.00	
0.00	0.000000		
45	0.001482	0.00	
0.00	0.000000		
50	0.001490	197.18	
10.00	0.293791		
55	0.001571	1,675.99	
85.00	2.632976		
60	0.001751	98.59	
5.00	0.172627		
65	0.002070	0.00	
0.00	0.000000		
70	0.002555	0.00	
0.00	0.000000		
75	0.003351	0.00	
0.00	0.000000		

Future - Mountain View to Sierra

Total	100.00	3.099394	1,971.75
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Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1,120.506181	0.00
0.00	0.000000	
10	852.755297	0.00
0.00	0.000000	
15	672.761381	0.00
0.00	0.000000	
20	550.898472	0.00
0.00	0.000000	
25	470.771042	0.00
0.00	0.000000	
30	416.722639	0.00
0.00	0.000000	
35	381.825650	0.00
0.00	0.000000	
40	361.951439	0.00
0.00	0.000000	
45	354.906995	0.00
0.00	0.000000	
50	359.987591	197.18
10.00	70,980.553255	
55	377.841830	1,675.99
85.00	633,258.184057	
60	410.603543	98.59
5.00	40,480.376796	
65	462.317805	0.00
0.00	0.000000	
70	466.031341	0.00
0.00	0.000000	
75	471.722636	0.00
0.00	0.000000	
<hr style="border-top: 1px dashed black;"/>		
Total	744,719.114108	1,971.75
100.00		

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.443585	0.00
0.00	0.000000	
10	1.248371	0.00
0.00	0.000000	
15	1.103416	0.00
0.00	0.000000	
20	0.994387	0.00
0.00	0.000000	
25	0.913522	0.00
0.00	0.000000	
30	0.848160	0.00
0.00	0.000000	
35	0.797444	0.00
0.00	0.000000	

Future - Mountain View to Sierra

40		0.760222	0.00
0.00		0.000000	
45		0.737532	0.00
0.00		0.000000	
50		0.733530	197.18
10.00		144.633778	
55		0.753438	1,675.99
85.00		1,262.752670	
60		0.809441	98.59
5.00		79.800765	
65		0.924364	0.00
0.00		0.000000	
70		1.162411	0.00
0.00		0.000000	
75		1.580251	0.00
0.00		0.000000	

Total	100.00	1,487.187212	1,971.75

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000896	0.00	0.00
0.00	0.000000		
10	0.000615	0.00	0.00
0.00	0.000000		
15	0.000442	0.00	0.00
0.00	0.000000		
20	0.000344	0.00	0.00
0.00	0.000000		
25	0.000287	0.00	0.00
0.00	0.000000		
30	0.000252	0.00	0.00
0.00	0.000000		
35	0.000233	0.00	0.00
0.00	0.000000		
40	0.000229	0.00	0.00
0.00	0.000000		
45	0.000233	0.00	0.00
0.00	0.000000		
50	0.000254	197.18	197.18
10.00	0.050082		
55	0.000290	1,675.99	1,675.99
85.00	0.486036		
60	0.000351	98.59	98.59
5.00	0.034604		
65	0.000446	0.00	0.00
0.00	0.000000		
70	0.000583	0.00	0.00
0.00	0.000000		
75	0.000807	0.00	0.00
0.00	0.000000		

Total	100.00	0.570723	1,971.75

Pollutant Name : BENZENE

Future - Mountain View to Sierra

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004540	0.000000	0.00
0.00		0.000000	
10	0.003034	0.000000	0.00
0.00		0.000000	
15	0.002108	0.000000	0.00
0.00		0.000000	
20	0.001610	0.000000	0.00
0.00		0.000000	
25	0.001343	0.000000	0.00
0.00		0.000000	
30	0.001175	0.000000	0.00
0.00		0.000000	
35	0.001082	0.000000	0.00
0.00		0.000000	
40	0.001053	0.000000	0.00
0.00		0.000000	
45	0.001062	0.000000	0.00
0.00		0.000000	
50	0.001143		197.18
10.00		0.225371	
55	0.001294		1,675.99
85.00		2.168728	
60	0.001548		98.59
5.00		0.152613	
65	0.001955		0.00
0.00		0.000000	
70	0.002535		0.00
0.00		0.000000	
75	0.003480		0.00
0.00		0.000000	

Total		2.546712	1,971.75
100.00			

Pollutant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000187	0.000000	0.00
0.00		0.000000	
10	0.000131	0.000000	0.00
0.00		0.000000	
15	0.000097	0.000000	0.00
0.00		0.000000	
20	0.000076	0.000000	0.00
0.00		0.000000	
25	0.000063	0.000000	0.00
0.00		0.000000	
30	0.000055	0.000000	0.00
0.00		0.000000	
35	0.000051	0.000000	0.00
0.00		0.000000	
40	0.000051	0.000000	0.00
0.00		0.000000	
45	0.000052	0.000000	0.00
0.00		0.000000	
50	0.000057		197.18
10.00		0.011239	

Future - Mountain View to Sierra

Speed (mph)	VMT-Speed Distribution (%)	Emission Factor (grams/mile)	Emissions by Speed	VMT by Speed
55	85.00	0.000065	0.108939	1,675.99
60	5.00	0.000079	0.007788	98.59
65	0.00	0.000101	0.000000	0.00
70	0.00	0.000132	0.000000	0.00
75	0.00	0.000183	0.000000	0.00

Total	100.00		0.127967	1,971.75

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.004466	0.00
10	0.002624	0.00
15	0.001467	0.00
20	0.000985	0.00
25	0.000844	0.00
30	0.000737	0.00
35	0.000658	0.00
40	0.000602	0.00
45	0.000566	0.00
50	0.000555	197.18
55	0.000568	1,675.99
60	0.000612	98.59
65	0.000700	0.00
70	0.000843	0.00
75	0.001078	0.00

Total	1.121729	1,971.75

Idling Emissions (grams) (Currently NOT Available)

Future - Mountain View to Sierra

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
36.931756 0.017070 36.06

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 36.06

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.002164 0.000001 36.06

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.387275 0.000179 36.06

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 36.06

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 36.06

Future - Mountain View to Sierra

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	130.588599	0.130589
0.000143949		
S02	7.364388	0.007364
0.000008118		
Di esel _PM	5.434143	0.005434
0.000005990		
PM2.5	25.489798	0.025490
0.000028098		
PM10	28.243051	0.028243
0.000031133		
NOX	238.823092	0.238823
0.000263257		
FORMALDEHYDE	3.099394	0.003099
0.000003416		
CO2	744,719.114108	744.719114
0.820912303		
CO	1,487.187212	1.487187
0.001639343		
BUTADIENE	0.572887	0.000573
0.000000631		
BENZENE	2.933987	0.002934
0.000003234		
ACROLEIN	0.127967	0.000128
0.000000141		
ACETALDEHYDE	1.121729	0.001122
0.000001236		

END

Future - Sierra to Draper

Title : Future - Sierra to Draper
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 11:14 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 530
 Volume (vph) : 0.5
 Road Length(mi) : 0.5
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55							10	85	5	

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55										

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emission Factor(grams/mile)	VMT by Speed
VMT-Speed Distribution (%)	Emissions by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	26.50
10.00	1.212004	
35	0.041928	225.25
85.00	9.444282	
40	0.040738	13.25
5.00	0.539779	
45	0.040036	0.00
0.00	0.000000	
50	0.043542	0.00

Future - Sierra to Draper

Speed (mph)	VT (hours)	Emission Factor (grams/mile)	Emissions (grams)	VT by Speed (hours)
55	0.00	0.047415	0.000000	0.00
60	0.00	0.056848	0.000000	0.00
65	0.00	0.070315	0.000000	0.00
70	0.00	0.090057	0.000000	0.00
75	0.00	0.121861	0.000000	0.00

Total	100.00		11.196065	265.00

Pollutant Name : SO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VT by Speed
VT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.011305	0.00
10	0.007585	0.00
15	0.006023	0.00
20	0.005348	0.00
25	0.004568	0.00
30	0.003424	26.50
35	0.003643	225.25
40	0.003643	13.25
45	0.003764	0.00
50	0.003741	0.00
55	0.003741	0.00
60	0.003620	0.00
65	0.004862	0.00
70	0.004710	0.00
75	0.004505	0.00

Total	0.959592	265.00

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VT by Speed
VT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.005185	0.00
10	0.000000	

Future - Sierra to Draper

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	26.50
10.00		0.062858	
35		0.002409	225.25
85.00		0.542627	
40		0.002284	13.25
5.00		0.030263	
45		0.002434	0.00
0.00		0.000000	
50		0.002609	0.00
0.00		0.000000	
55		0.002752	0.00
0.00		0.000000	
60		0.003118	0.00
0.00		0.000000	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	0.635748	265.00

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	0.00
0.00	0.000000		
10	0.053692	0.00	0.00
0.00	0.000000		
15	0.037357	0.00	0.00
0.00	0.000000		
20	0.026983	0.00	0.00
0.00	0.000000		
25	0.021476	0.00	0.00
0.00	0.000000		
30	0.017483	26.50	26.50
10.00	0.463300		
35	0.014311	225.25	225.25
85.00	3.223553		
40	0.012928	13.25	13.25
5.00	0.171296		
45	0.012433	0.00	0.00
0.00	0.000000		
50	0.012848	0.00	0.00
0.00	0.000000		
55	0.012818	0.00	0.00
0.00	0.000000		
60	0.014948	0.00	0.00
0.00	0.000000		
65	0.016518	0.00	0.00

Future - Sierra to Draper

0.00	0.000000	
70	0.018259	0.00
0.00	0.000000	
75	0.018453	0.00
0.00	0.000000	

Total	3.858148	265.00
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.087119	0.00
0.00	0.000000	
10	0.056770	0.00
0.00	0.000000	
15	0.039822	0.00
0.00	0.000000	
20	0.029525	0.00
0.00	0.000000	
25	0.022813	0.00
0.00	0.000000	
30	0.017789	26.50
10.00	0.471409	
35	0.015837	225.25
85.00	3.567284	
40	0.014463	13.25
5.00	0.191635	
45	0.014028	0.00
0.00	0.000000	
50	0.014323	0.00
0.00	0.000000	
55	0.014216	0.00
0.00	0.000000	
60	0.016159	0.00
0.00	0.000000	
65	0.018798	0.00
0.00	0.000000	
70	0.019122	0.00
0.00	0.000000	
75	0.020425	0.00
0.00	0.000000	

Total	4.230328	265.00
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.245623	0.00
0.00	0.000000	
10	0.198626	0.00
0.00	0.000000	
15	0.165577	0.00
0.00	0.000000	
20	0.143331	0.00
0.00	0.000000	

Future - Sierra to Draper

25		0.132483	0.00
0.00		0.000000	
30		0.123366	26.50
10.00		3.269199	
35		0.117415	225.25
85.00		26.447729	
40		0.114461	13.25
5.00		1.516608	
45		0.113507	0.00
0.00		0.000000	
50		0.116617	0.00
0.00		0.000000	
55		0.121114	0.00
0.00		0.000000	
60		0.130276	0.00
0.00		0.000000	
65		0.144754	0.00
0.00		0.000000	
70		0.162388	0.00
0.00		0.000000	
75		0.191138	0.00
0.00		0.000000	

Total	100.00	31.233536	265.00

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	
0.00	0.000000		
10	0.006173	0.00	
0.00	0.000000		
15	0.003611	0.00	
0.00	0.000000		
20	0.002499	0.00	
0.00	0.000000		
25	0.002125	0.00	
0.00	0.000000		
30	0.001855	26.50	
10.00	0.049158		
35	0.001668	225.25	
85.00	0.375717		
40	0.001549	13.25	
5.00	0.020524		
45	0.001482	0.00	
0.00	0.000000		
50	0.001490	0.00	
0.00	0.000000		
55	0.001571	0.00	
0.00	0.000000		
60	0.001751	0.00	
0.00	0.000000		
65	0.002070	0.00	
0.00	0.000000		
70	0.002555	0.00	
0.00	0.000000		
75	0.003351	0.00	
0.00	0.000000		

Future - Sierra to Draper

Total	100.00	0.445399	265.00
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Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1,120.506181	0.00
0.00	0.000000	
10	852.755297	0.00
0.00	0.000000	
15	672.761381	0.00
0.00	0.000000	
20	550.898472	0.00
0.00	0.000000	
25	470.771042	0.00
0.00	0.000000	
30	416.722639	26.50
10.00	11,043.149934	
35	381.825650	225.25
85.00	86,006.227663	
40	361.951439	13.25
5.00	4,795.856567	
45	354.906995	0.00
0.00	0.000000	
50	359.987591	0.00
0.00	0.000000	
55	377.841830	0.00
0.00	0.000000	
60	410.603543	0.00
0.00	0.000000	
65	462.317805	0.00
0.00	0.000000	
70	466.031341	0.00
0.00	0.000000	
75	471.722636	0.00
0.00	0.000000	
<hr style="border-top: 1px dashed black;"/>		
Total	101,845.234163	265.00
	100.00	

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.443585	0.00
0.00	0.000000	
10	1.248371	0.00
0.00	0.000000	
15	1.103416	0.00
0.00	0.000000	
20	0.994387	0.00
0.00	0.000000	
25	0.913522	0.00
0.00	0.000000	
30	0.848160	26.50
10.00	22.476240	
35	0.797444	225.25
85.00	179.624261	

Future - Sierra to Draper			
40		0.760222	13.25
5.00		10.072942	
45		0.737532	0.00
0.00		0.000000	
50		0.733530	0.00
0.00		0.000000	
55		0.753438	0.00
0.00		0.000000	
60		0.809441	0.00
0.00		0.000000	
65		0.924364	0.00
0.00		0.000000	
70		1.162411	0.00
0.00		0.000000	
75		1.580251	0.00
0.00		0.000000	

Total	100.00	212.173443	265.00

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000896	0.00	0.00
0.00	0.000000		
10	0.000615	0.00	0.00
0.00	0.000000		
15	0.000442	0.00	0.00
0.00	0.000000		
20	0.000344	0.00	0.00
0.00	0.000000		
25	0.000287	0.00	0.00
0.00	0.000000		
30	0.000252	26.50	26.50
10.00	0.006678		
35	0.000233	225.25	225.25
85.00	0.052483		
40	0.000229	13.25	13.25
5.00	0.003034		
45	0.000233	0.00	0.00
0.00	0.000000		
50	0.000254	0.00	0.00
0.00	0.000000		
55	0.000290	0.00	0.00
0.00	0.000000		
60	0.000351	0.00	0.00
0.00	0.000000		
65	0.000446	0.00	0.00
0.00	0.000000		
70	0.000583	0.00	0.00
0.00	0.000000		
75	0.000807	0.00	0.00
0.00	0.000000		

Total	100.00	0.062196	265.00

Pollutant Name : BENZENE

Future - Sierra to Draper

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.004540	0.000000	0.00
0.00	0.000000		
10	0.003034	0.000000	0.00
0.00	0.000000		
15	0.002108	0.000000	0.00
0.00	0.000000		
20	0.001610	0.000000	0.00
0.00	0.000000		
25	0.001343	0.000000	0.00
0.00	0.000000		
30	0.001175	0.031138	26.50
10.00	0.031138		
35	0.001082	0.243721	225.25
85.00	0.243721		
40	0.001053	0.013952	13.25
5.00	0.013952		
45	0.001062	0.000000	0.00
0.00	0.000000		
50	0.001143	0.000000	0.00
0.00	0.000000		
55	0.001294	0.000000	0.00
0.00	0.000000		
60	0.001548	0.000000	0.00
0.00	0.000000		
65	0.001955	0.000000	0.00
0.00	0.000000		
70	0.002535	0.000000	0.00
0.00	0.000000		
75	0.003480	0.000000	0.00
0.00	0.000000		

Total		0.288810	265.00
100.00			

Po ll utant Name : ACROLEIN

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.000187	0.000000	0.00
0.00	0.000000		
10	0.000131	0.000000	0.00
0.00	0.000000		
15	0.000097	0.000000	0.00
0.00	0.000000		
20	0.000076	0.000000	0.00
0.00	0.000000		
25	0.000063	0.000000	0.00
0.00	0.000000		
30	0.000055	0.001458	26.50
10.00	0.001458		
35	0.000051	0.011488	225.25
85.00	0.011488		
40	0.000051	0.000676	13.25
5.00	0.000676		
45	0.000052	0.000000	0.00
0.00	0.000000		
50	0.000057	0.000000	0.00
0.00	0.000000		

Future - Sierra to Draper		
55		0.000065
0.00		0.000000
60		0.000079
0.00		0.000000
65		0.000101
0.00		0.000000
70		0.000132
0.00		0.000000
75		0.000183
0.00		0.000000

Total		
100.00	0.013621	265.00

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.004466	0.00
0.00	0.000000	
10	0.002624	0.00
0.00	0.000000	
15	0.001467	0.00
0.00	0.000000	
20	0.000985	0.00
0.00	0.000000	
25	0.000844	0.00
0.00	0.000000	
30	0.000737	26.50
10.00	0.019531	
35	0.000658	225.25
85.00	0.148215	
40	0.000602	13.25
5.00	0.007977	
45	0.000566	0.00
0.00	0.000000	
50	0.000555	0.00
0.00	0.000000	
55	0.000568	0.00
0.00	0.000000	
60	0.000612	0.00
0.00	0.000000	
65	0.000700	0.00
0.00	0.000000	
70	0.000843	0.00
0.00	0.000000	
75	0.001078	0.00
0.00	0.000000	

Total		
100.00	0.175722	265.00

 Idling Emi ssi ons (grams) (Currentl y NOT Avai l abl e)

Future - Sierra to Draper

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
7.835435 0.017070 7.65

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 7.65

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000459 0.000001 7.65

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.082164 0.000179 7.65

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 7.65

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 7.65

Future - Sierra to Draper

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	19.031499	0.019031
0.000020979		
S02	0.959592	0.000960
0.000001058		
Di esel _PM	0.635748	0.000636
0.000000701		
PM2.5	3.858148	0.003858
0.000004253		
PM10	4.230328	0.004230
0.000004663		
NOX	31.233536	0.031234
0.000034429		
FORMALDEHYDE	0.445399	0.000445
0.000000491		
CO2	101,845.234163	101.845234
0.112265154		
CO	212.173443	0.212173
0.000233881		
BUTADIENE	0.062655	0.000063
0.000000069		
BENZENE	0.370974	0.000371
0.000000409		
ACROLEIN	0.013621	0.000014
0.000000015		
ACETALDEHYDE	0.175722	0.000176
0.000000194		

END

Future - Thompson to 2nd

Title : Future - Thompson to 2nd
 Version : CT-EMFAC 2.6
 Run Date : 29 June 2011 11:07 AM
 Scen Year : 2035
 Season : Annual
 Temperature : 68F
 Relative Humidity : 56%
 Area : Fresno County

Peak User Input :
 Total VMT : 1437
 Volume (vph) : 0.5
 Road Length(mi) : 0.5
 Number of Hours : 1

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55							10	85	5	
60										
65										
70										
>75										

Offpeak User Input:
 Total VMT :
 Volume (vph) :
 Road Length(mi) :
 Number of Hours :

VMT Distribution(%) by Speed(mph)

Speed (mph)	5	10	15	20	25	30	35	40	45	50
55										
60										
65										
70										
>75										

 Running Exhaust Emissions (grams)

Pollutant Name : TOG_exh

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.193281	0.00
0.00	0.000000	
10	0.126981	0.00
0.00	0.000000	
15	0.086226	0.00
0.00	0.000000	
20	0.064832	0.00
0.00	0.000000	
25	0.053563	0.00
0.00	0.000000	
30	0.045736	0.00
0.00	0.000000	
35	0.041928	71.85
10.00	3.012527	
40	0.040738	610.73
85.00	24.879715	
45	0.040036	35.93
5.00	1.438293	
50	0.043542	0.00

Future - Thompson to 2nd		
0.00	0.000000	
55	0.047415	0.00
0.00	0.000000	
60	0.056848	0.00
0.00	0.000000	
65	0.070315	0.00
0.00	0.000000	
70	0.090057	0.00
0.00	0.000000	
75	0.121861	0.00
0.00	0.000000	

Total		718.50
100.00	29.330535	

Pollutant Name : S02

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.011305	0.00
0.00	0.000000	
10	0.007585	0.00
0.00	0.000000	
15	0.006023	0.00
0.00	0.000000	
20	0.005348	0.00
0.00	0.000000	
25	0.004568	0.00
0.00	0.000000	
30	0.003424	0.00
0.00	0.000000	
35	0.003643	71.85
10.00	0.261750	
40	0.003643	610.73
85.00	2.224871	
45	0.003764	35.93
5.00	0.135222	
50	0.003741	0.00
0.00	0.000000	
55	0.003741	0.00
0.00	0.000000	
60	0.003620	0.00
0.00	0.000000	
65	0.004862	0.00
0.00	0.000000	
70	0.004710	0.00
0.00	0.000000	
75	0.004505	0.00
0.00	0.000000	

Total		718.50
100.00	2.621842	

Pollutant Name : Di esel _PM

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.005185	0.00
0.00	0.000000	

Future - Thompson to 2nd

10		0.004241	0.00
0.00		0.000000	
15		0.003560	0.00
0.00		0.000000	
20		0.003071	0.00
0.00		0.000000	
25		0.002638	0.00
0.00		0.000000	
30		0.002372	0.00
0.00		0.000000	
35		0.002409	71.85
10.00		0.173087	
40		0.002284	610.73
85.00		1.394896	
45		0.002434	35.93
5.00		0.087441	
50		0.002609	0.00
0.00		0.000000	
55		0.002752	0.00
0.00		0.000000	
60		0.003118	0.00
0.00		0.000000	
65		0.003454	0.00
0.00		0.000000	
70		0.003855	0.00
0.00		0.000000	
75		0.004382	0.00
0.00		0.000000	

Total	100.00	1.655424	718.50

Pollutant Name : PM2.5

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.080752	0.00	0.00
0.00	0.000000		
10	0.053692	0.00	0.00
0.00	0.000000		
15	0.037357	0.00	0.00
0.00	0.000000		
20	0.026983	0.00	0.00
0.00	0.000000		
25	0.021476	0.00	0.00
0.00	0.000000		
30	0.017483	0.00	0.00
0.00	0.000000		
35	0.014311	71.85	71.85
10.00	1.028245		
40	0.012928	610.73	610.73
85.00	7.895453		
45	0.012433	35.93	35.93
5.00	0.446656		
50	0.012848	0.00	0.00
0.00	0.000000		
55	0.012818	0.00	0.00
0.00	0.000000		
60	0.014948	0.00	0.00
0.00	0.000000		
65	0.016518	0.00	0.00

Future - Thompson to 2nd

0.00	0.000000	
70	0.018259	0.00
0.00	0.000000	
75	0.018453	0.00
0.00	0.000000	

Total	9.370354	718.50
100.00		

Pollutant Name : PM10

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.087119	0.00
0.00	0.000000	
10	0.056770	0.00
0.00	0.000000	
15	0.039822	0.00
0.00	0.000000	
20	0.029525	0.00
0.00	0.000000	
25	0.022813	0.00
0.00	0.000000	
30	0.017789	0.00
0.00	0.000000	
35	0.015837	71.85
10.00	1.137888	
40	0.014463	610.73
85.00	8.832916	
45	0.014028	35.93
5.00	0.503956	
50	0.014323	0.00
0.00	0.000000	
55	0.014216	0.00
0.00	0.000000	
60	0.016159	0.00
0.00	0.000000	
65	0.018798	0.00
0.00	0.000000	
70	0.019122	0.00
0.00	0.000000	
75	0.020425	0.00
0.00	0.000000	

Total	10.474760	718.50
100.00		

Pollutant Name : NOX

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.245623	0.00
0.00	0.000000	
10	0.198626	0.00
0.00	0.000000	
15	0.165577	0.00
0.00	0.000000	
20	0.143331	0.00
0.00	0.000000	

Future - Thompson to 2nd			
25	0.00	0.132483	0.00
30	0.00	0.000000	0.00
35	10.00	0.123366	71.85
40	85.00	0.000000	610.73
45	5.00	0.117415	35.93
50	0.00	8.436268	0.00
55	0.00	0.114461	0.00
60	0.00	69.904194	0.00
65	0.00	0.113507	0.00
70	0.00	4.077739	0.00
75	0.00	0.116617	0.00
		0.000000	
		0.121114	
		0.000000	
		0.130276	
		0.000000	
		0.144754	
		0.000000	
		0.162388	
		0.000000	
		0.191138	
		0.000000	

Total	100.00	82.418201	718.50

Pollutant Name : FORMALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	VMT by Speed
VMT-Speed Di stri buti on (%)			
5	0.010264	0.00	0.00
10	0.006173	0.00	0.00
15	0.003611	0.00	0.00
20	0.002499	0.00	0.00
25	0.002125	0.00	0.00
30	0.001855	0.00	0.00
35	0.001668	71.85	71.85
40	0.001549	610.73	610.73
45	0.001482	35.93	35.93
50	0.001490	0.00	0.00
55	0.001571	0.00	0.00
60	0.001751	0.00	0.00
65	0.002070	0.00	0.00
70	0.002555	0.00	0.00
75	0.003351	0.00	0.00
	0.000000		

Future - Thompson to 2nd

Total	100.00	1.119100	718.50
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Pollutant Name : CO2

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1,120.506181	0.00
0.00	0.000000	
10	852.755297	0.00
0.00	0.000000	
15	672.761381	0.00
0.00	0.000000	
20	550.898472	0.00
0.00	0.000000	
25	470.771042	0.00
0.00	0.000000	
30	416.722639	0.00
0.00	0.000000	
35	381.825650	71.85
10.00	27,434.172953	
40	361.951439	610.73
85.00	221,052.792583	
45	354.906995	35.93
5.00	12,750.033795	
50	359.987591	0.00
0.00	0.000000	
55	377.841830	0.00
0.00	0.000000	
60	410.603543	0.00
0.00	0.000000	
65	462.317805	0.00
0.00	0.000000	
70	466.031341	0.00
0.00	0.000000	
75	471.722636	0.00
0.00	0.000000	

Total	261,236.999331	718.50
100.00		

Pollutant Name : CO

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	1.443585	0.00
0.00	0.000000	
10	1.248371	0.00
0.00	0.000000	
15	1.103416	0.00
0.00	0.000000	
20	0.994387	0.00
0.00	0.000000	
25	0.913522	0.00
0.00	0.000000	
30	0.848160	0.00
0.00	0.000000	
35	0.797444	71.85
10.00	57.296351	

Speed (mph)	Future - Thompson to 2nd	
40	0.760222	610.73
85.00	464.286581	
45	0.737532	35.93
5.00	26.495837	
50	0.733530	0.00
0.00	0.000000	
55	0.753438	0.00
0.00	0.000000	
60	0.809441	0.00
0.00	0.000000	
65	0.924364	0.00
0.00	0.000000	
70	1.162411	0.00
0.00	0.000000	
75	1.580251	0.00
0.00	0.000000	

Total	548.078769	718.50
100.00		

Pollutant Name : BUTADIENE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.000896	0.00
0.00	0.000000	
10	0.000615	0.00
0.00	0.000000	
15	0.000442	0.00
0.00	0.000000	
20	0.000344	0.00
0.00	0.000000	
25	0.000287	0.00
0.00	0.000000	
30	0.000252	0.00
0.00	0.000000	
35	0.000233	71.85
10.00	0.016741	
40	0.000229	610.73
85.00	0.139856	
45	0.000233	35.93
5.00	0.008371	
50	0.000254	0.00
0.00	0.000000	
55	0.000290	0.00
0.00	0.000000	
60	0.000351	0.00
0.00	0.000000	
65	0.000446	0.00
0.00	0.000000	
70	0.000583	0.00
0.00	0.000000	
75	0.000807	0.00
0.00	0.000000	

Total	0.164968	718.50
100.00		

Pollutant Name : BENZENE

speed(mph)		Future - Thompson to 2nd		VMT by Speed
VMT-Speed Distribution (%)		Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	
5		0.004540		0.00
	0.00		0.000000	
10		0.003034		0.00
	0.00		0.000000	
15		0.002108		0.00
	0.00		0.000000	
20		0.001610		0.00
	0.00		0.000000	
25		0.001343		0.00
	0.00		0.000000	
30		0.001175		0.00
	0.00		0.000000	
35		0.001082		71.85
	10.00		0.077742	
40		0.001053		610.73
	85.00		0.643093	
45		0.001062		35.93
	5.00		0.038152	
50		0.001143		0.00
	0.00		0.000000	
55		0.001294		0.00
	0.00		0.000000	
60		0.001548		0.00
	0.00		0.000000	
65		0.001955		0.00
	0.00		0.000000	
70		0.002535		0.00
	0.00		0.000000	
75		0.003480		0.00
	0.00		0.000000	
----- Total				718.50
	100.00		0.758987	

Pollutant Name : ACROLEIN

speed(mph)		Future - Thompson to 2nd		VMT by Speed
VMT-Speed Distribution (%)		Emi ssi on Factor(grams/mi le)	Emi ssi ons by Speed	
5		0.000187		0.00
	0.00		0.000000	
10		0.000131		0.00
	0.00		0.000000	
15		0.000097		0.00
	0.00		0.000000	
20		0.000076		0.00
	0.00		0.000000	
25		0.000063		0.00
	0.00		0.000000	
30		0.000055		0.00
	0.00		0.000000	
35		0.000051		71.85
	10.00		0.003664	
40		0.000051		610.73
	85.00		0.031147	
45		0.000052		35.93
	5.00		0.001868	
50		0.000057		0.00
	0.00		0.000000	

Future - Thompson to 2nd		
55	0.00	0.000065
60	0.00	0.000079
65	0.00	0.000101
70	0.00	0.000132
75	0.00	0.000183

Total	100.00	0.036679
		718.50

Pollutant Name : ACETALDEHYDE

speed(mph)	Emi ssi on Factor(grams/mi le)	VMT by Speed
VMT-Speed Di stri buti on (%)	Emi ssi ons by Speed	
5	0.004466	0.00
10	0.002624	0.00
15	0.001467	0.00
20	0.000985	0.00
25	0.000844	0.00
30	0.000737	0.00
35	0.000658	71.85
40	0.000602	610.73
45	0.000566	35.93
50	0.000555	0.00
55	0.000568	0.00
60	0.000612	0.00
65	0.000700	0.00
70	0.000843	0.00
75	0.001078	0.00

Total	100.00	0.435267
		718.50

Idl i ng Emi ssi ons (grams) (Currentl y NOT Avai l abl e)

Future - Thompson to 2nd

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_Ios
Emission Factor(grams/min) total running time(hrs)
Emissions
18.557803 0.017070 18.12

Pollutant Name : FORMALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 18.12

Pollutant Name : BUTADIENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.001087 0.000001 18.12

Pollutant Name : BENZENE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.194601 0.000179 18.12

Pollutant Name : ACROLEIN
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 18.12

Pollutant Name : ACETALDEHYDE
Emission Factor(grams/min) total running time(hrs)
Emissions
0.000000 0.000000 18.12

Future - Thompson to 2nd

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)
Total Emissions (US Tons)		
TOG	47.888338	0.047888
0.000052788		
S02	2.621842	0.002622
0.000002890		
Di esel _PM	1.655424	0.001655
0.000001825		
PM2.5	9.370354	0.009370
0.000010329		
PM10	10.474760	0.010475
0.000011546		
NOX	82.418201	0.082418
0.000090851		
FORMALDEHYDE	1.119100	0.001119
0.000001234		
CO2	261,236.999331	261.236999
0.287964499		
CO	548.078769	0.548079
0.000604153		
BUTADIENE	0.166055	0.000166
0.000000183		
BENZENE	0.953589	0.000954
0.000001051		
ACROLEIN	0.036679	0.000037
0.000000040		
ACETALDEHYDE	0.435267	0.000435
0.000000480		

 END-----

APPENDIX B

Road Construction Emissions Model Output

Road Construction Emissions Model, Version 6.3.2

Emission Estimates for -> Golden State Corridor Development										
Project Phases (English Units)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	CO2 (lbs/day)
Grubbing/Land Clearing	15.8	69.5	94.2	125.8	4.6	121.2	29.4	4.2	25.2	15,287.9
Grading/Excavation	14.7	79.8	83.1	125.8	4.6	121.2	29.3	4.1	25.2	15,238.3
Drainage/Utilities/Sub-Grade	11.5	60.1	63.8	124.8	3.6	121.2	28.5	3.2	25.2	11,494.4
Paving	10.3	58.3	54.3	3.8	3.8	-	3.4	3.4	-	8,944.0
Maximum (pounds/day)	15.8	79.8	94.2	125.8	4.6	121.2	29.4	4.2	25.2	15,287.9
Total (tons/construction project)	5.2	27.5	29.6	42.5	1.7	40.8	10.0	1.5	8.5	5,321.8

Notes: Project Start Year -> 2017
 Project Length (months) -> 36
 Total Project Area (acres) -> 517
 Maximum Area Disturbed/Day (acres) -> 12
 Total Soil Imported/Exported (yd³/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.

Emission Estimates for -> Golden State Corridor Development										
Project Phases (Metric Units)	ROG (kgs/day)	CO (kgs/day)	NOx (kgs/day)	Total PM10 (kgs/day)	Exhaust PM10 (kgs/day)	Fugitive Dust PM10 (kgs/day)	Total PM2.5 (kgs/day)	Exhaust PM2.5 (kgs/day)	Fugitive Dust PM2.5 (kgs/day)	CO2 (kgs/day)
Grubbing/Land Clearing	7.2	31.6	42.8	57.2	2.1	55.1	13.3	1.9	11.5	6,949.0
Grading/Excavation	6.7	36.3	37.8	57.2	2.1	55.1	13.3	1.9	11.5	6,926.5
Drainage/Utilities/Sub-Grade	5.2	27.3	29.0	56.7	1.7	55.1	12.9	1.5	11.5	5,224.7
Paving	4.7	26.5	24.7	1.7	1.7	-	1.5	1.5	-	4,065.4
Maximum (kilograms/day)	7.2	36.3	42.8	57.2	2.1	55.1	13.3	1.9	11.5	6,949.0
Total (megagrams/construction project)	4.7	24.9	26.8	38.5	1.5	37.0	9.0	1.3	7.7	4,827.1

Notes: Project Start Year -> 2017
 Project Length (months) -> 36
 Total Project Area (hectares) -> 209
 Maximum Area Disturbed/Day (hectares) -> 5
 Total Soil Imported/Exported (meters³/day)-> 0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns H and I. Total PM2.5 emissions shown in Column J are the sum of exhaust and fugitive dust emissions shown in columns K and L.