TIER II

AIR QUALITY ANALYSIS

for

STATE ROUTE 11 AND THE OTAY MESA EAST PORT OF ENTRY

OTAY MESA, SAN DIEGO, CALIFORNIA
DISTRICT 11–SD –ROUTE 11
PM 0.0/2.8 EA056310
DISTRICT 11–SD –ROUTE 905
PM R8.4/10.1

November 2010

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AIR QUALITY ANALYSIS

Otay Mesa, San Diego, California
11-SD-11[PM 0.0-2.1]
[EA 056310]

November 2010

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CHAPTER 1.0
INTRODUCTION

1.1 INTRODUCTION

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), propose the construction of the following facilities in San Diego County: the new Otay Mesa East Port of Entry (POE); a new highway, State Route (SR-) 11 and a Commercial Vehicle Enforcement Facility (CVEF). The project analyzed in this document (referenced herein as the "proposed project" or "project") includes these three major elements in the general location shown on Figure 1, Regional Location Map.

Future SR-11 would begin at the SR-905/SR-125 interchange on east Otay Mesa, extending east and then south approximately 2.1 miles to the new 106-acre POE at the United States (U.S.) - Mexico border. Construction of SR-11 also would require improvements to SR-905 to accommodate a connection with SR-11. The 23-acre CVEF site would be located adjacent to the POE on its northern edge (refer to Figure 2, Project Area Map). The SR-11, Otay Mesa East POE and CVEF facilities are interdependent projects in that their locations and designs must be compatible, and none of the three could proceed independently of the others. These facilites ultimately would be designed, built and operated by different agencies, however, with Caltrans/FHWA responsible for SR-11; the U.S. General Services Administration (GSA) and the U.S. Customs and Border Protection (CBP) responsible for the POE; and the State of California Department of General Services (DGS) and the California Highway Patrol (CHP) responsible for the CVEF. To accommodate possible future transit service, such as Bus Rapid Transit (BRT), to the POE, the proposed project would include sufficient space within the overall POE footprint for a potential future transit center, but this facility would not be sited, designed or constructed at this time. Details of location, land acquisition, design, construction, environmental review and administrative responsibility for this facility would be defined by the San Diego Association of Governments/Metropolitan Transit Service (SANDAG/MTS) at a later date.

The purpose of this air quality analysis is to describe the existing regional and local air quality of the project area, identify the potential air quality impacts of the proposed

project, and demonstrate air quality conformity of the project with the State Implementation Plan (SIP), as required by the federal Clean Air Act (CAA). This report also identifies measures to mitigate or minimize pollutant emissions that could occur during project construction.

1.2 SUMMARY

The project site is located in the San Diego Air Basin (SDAB), which currently meets federal standards for all criteria air pollutants, except ozone (O_3). The SDAB has been designated as a "basic" nonattainment area for the 8-hour O_3 standard. The SDAB is designated as a federal maintenance area for carbon monoxide (CO) following its redesignation from nonattainment to a CO attainment area. Table 1 shows the pollutants for which the area has been classified federal nonattainment or maintenance and the number of violations within the past three years.

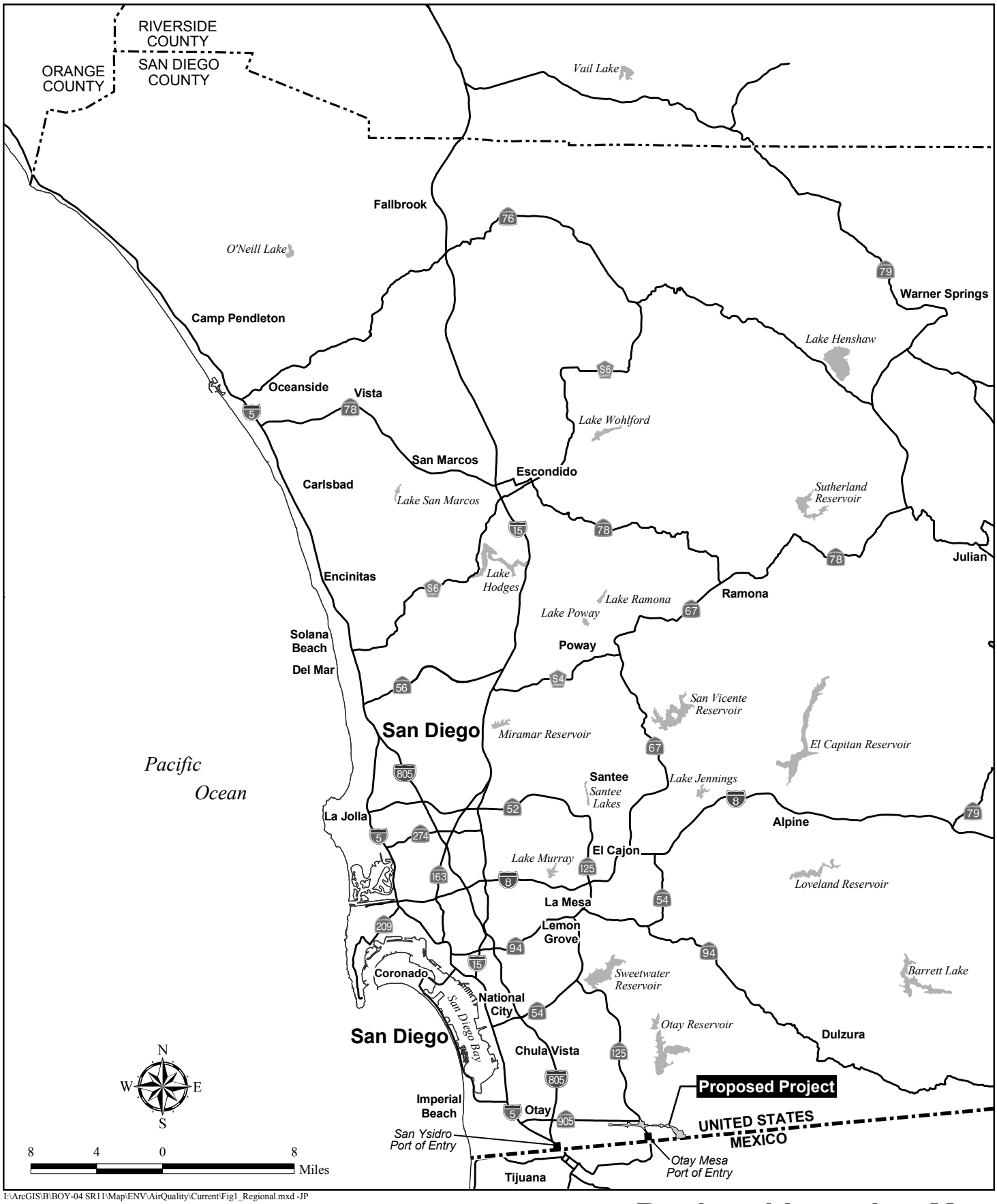
The SDAB meets California standards for all criteria air pollutants, except O_3, particulate matter sized 10 microns or less (PM_{10}), and particulate matter sized 2.5 microns or less ($PM_{2.5}$). Therefore, the SDAB has been designated as a California nonattainment area for O_3, PM_{10}, and $PM_{2.5}$.

Table 1
FEDERAL NONATTAINMENT AND ATTAINMENT/MAINTENANCE POLLUTANTS IN THE SDAB

Pollutant	Federal Attainment Status	Exceedances in the Last 3 Years
O_3 – 8-hour	Nonattainment Basic	0 in 2006; 0 in 2007; 2 in 2008
CO	Maintenance	None

Source: ARB 2009a, USEPA 2009a.
Note: ARB indicates that exceedances are not necessarily violations.

The federal CAA requires that areas designated as nonattainment or maintenance areas demonstrate that federal actions conform to the SIP and similar approved plans. Transportation measures, such as the proposed project, are analyzed for conformity with the SIP as part of regional transportation plans (RTPs) and regional transportation improvement programs (RTIPs). Table 2 identifies the status of the SIP.



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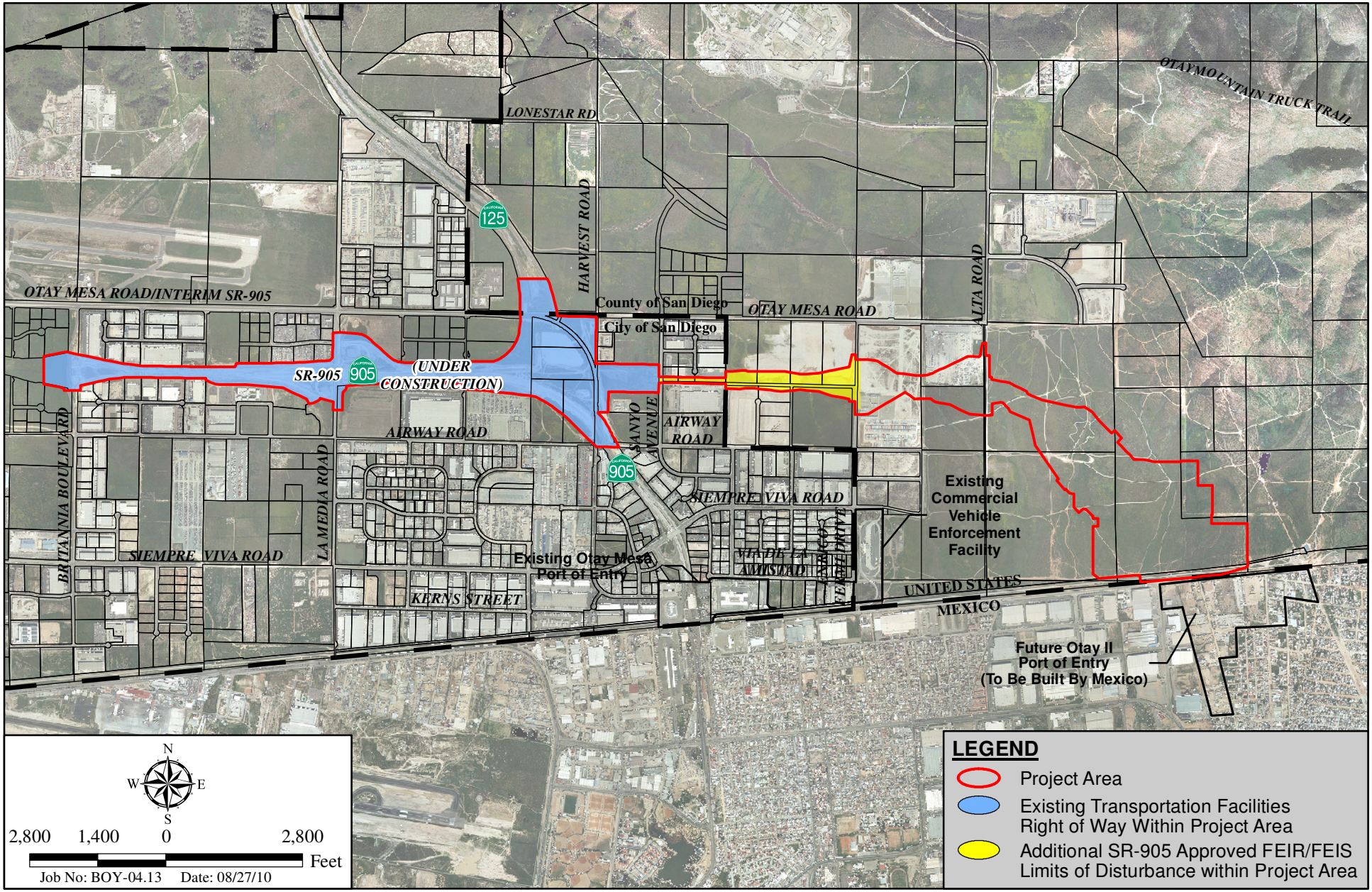
Regional Location Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 1



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Project Area Map

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 2

Table 2 STATUS OF STATE IMPLEMENTATION PLAN IN SAN DIEGO	
Pollutants	**Status**
Ozone (O_3)	In July 1997, the U.S. Environmental Protection Agency (USEPA) established a new federal 8-hour standard for O_3 of 0.085 parts per million (ppm). On March 12, 2008, the USEPA lowered its 8-hour standard for O_3 to 0.075 ppm. The USEPA designated 15 areas in California that violate the federal 8-hour O_3 standard on April 15, 2004. Each nonattainment area's classification and attainment deadline is based on the severity of its O_3 problem. The San Diego Air Basin is classified as a basic nonattainment area. San Diego's nonattainment area deadline is 2009. The San Diego County SIP was approved by the California Air Resources Board (ARB) on May 24, 2007 and is awaiting federal approval.
Carbon Monoxide (CO)	On April 26, 1996, the ARB approved the "Carbon Monoxide Redesignation Request and Maintenance Plan for Ten Federal Planning Areas" as part of the SIP for CO. The USEPA approved this revision on June 1, 1998, and redesignated San Diego to attainment. On October 22, 1998, the ARB revised the SIP to incorporate the effects of the recent ARB action to remove the wintertime oxygen requirement for gasoline in certain areas. On July 22, 2004, the ARB approved an update to the SIP that shows how the 10 areas will maintain the standard through 2018, revises emission estimates, and establishes new on-road motor vehicle emission budgets for transportation conformity purposes.

Source: ARB 2009b

The metropolitan planning organization responsible for the preparation of regional transportation plans and the associated air quality analyses is the San Diego Association of Governments (SANDAG). The applicable regional transportation plans are the *2030 San Diego Regional Transportation Plan – Pathways for the Future (2030 RTP)* and the *2008 Regional Transportation Improvement Program* (2008 RTIP). A proposed project needs to be identified in both the RTP and the RTIP to conform to the SIP.

Both plans, and an air quality analysis of the RTIP, were prepared by SANDAG. The proposed project is included on Page A-6 of Appendix A to the 2030 San Diego Regional Transportation Plan: Pathways for the Future (SANDAG 2007). The project's design concept and scope are consistent with the project description in the 2030 RTP (2007 update). The 2030 RTP was adopted by SANDAG on November 30, 2007.

USDOT adopted a CAA conformity redetermination for the 2030 RTP on November 17, 2008 (USDOT 2008).

The proposed project is included in the Final 2008 Regional Transportation Improvement Program on Page 13 (41), as MPO ID CAL66 and RTIP # 08-02 (State Route 11 from Border of Mexico east of SR-905/Otay Mesa Border Crossing to Future SR-125/SR-905 junction) (SANDAG 2008). The project Capacity Status is "CI" (Capacity Increasing). The RTIP was approved by the federal agencies on November 17, 2008, and USDOT adopted a CAA conformity determination for the RTIP on that date (USDOT 2008).

The proposed project would involve substantial construction. A discussion of construction emissions, potential impacts, and measures to avoid or minimize the impacts is included in this analysis. Recommended pollution abatement measures are included in the analysis. All Department standard specifications for construction mitigation, including measures in the state implementation plan and air district rules, will be implemented.

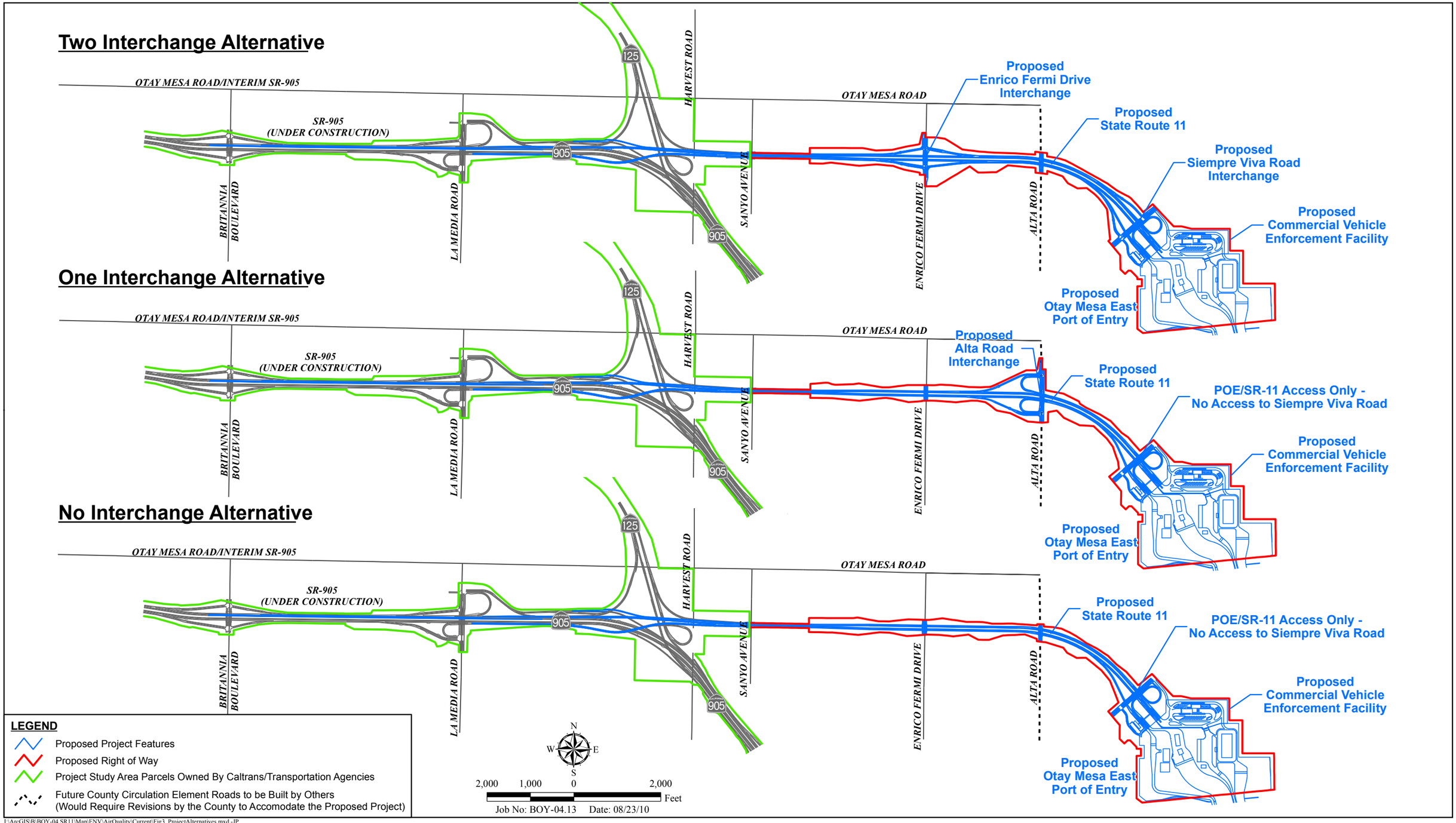
1.3 PROJECT DESCRIPTION

Three build alternatives (referred to as the Two Interchange, One Interchange, and No Interchange alternatives) are under consideration (refer to Figure 3), along with several design/operational variations and two variations for the proposed SR-905/SR-125/SR-11 interchange, are analyzed in this report. SR-11 would be constructed and operated as a toll facility under all of the build alternatives, with the San Diego Association of Governments (SANDAG) as the approved tolling agency under authorizing state legislation.

Two Interchange Alternative

State Route 11

Under the Two Interchange Alternative (Figure 3), SR-11 would be constructed as a four-lane toll highway. The proposed design would include standard-width main lanes in each direction, shoulders and median facilities, along with standard sight distances. Auxiliary lanes and connectors would also be included near the interchanges. The proposed median widths for all alternatives would vary within the proposed R/W from



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Comparative Overview of the Project Build Alternatives

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 3

west to east as follows: the median would narrow from 26 feet wide west of Sanyo Avenue to a width of 22 feet for a distance of approximately 1,600 feet to minimize impacts to nearby buildings, before widening out over a distance of approximately 630 feet to a 62-foot width for the remaining eastern portion of SR-11 (refer to Figure 4, Portion of Two Interchange Alternative with 22-Foot Median). The SR-11 corridor would be located midway between Otay Mesa and Airway roads for most of its length, and would cross four local surface streets: Sanyo Avenue, Enrico Fermi Drive, Alta Road, and Siempre Viva Road. It would extend east from the vicinity of Harvest Road (at the future SR-905/SR-125/SR-11 Interchange) for approximately 1.5 miles, before curving to the southeast near Alta Road and continuing for approximately 0.6 mile to connect with the POE/Commercial Vehicle Enforcement Facility (CVEF) site. This alternative would include an undercrossing structure at Sanyo Avenue; an overcrossing structure at Alta Road; and interchanges with local roadways at Siempre Viva Road (half interchange) and Enrico Fermi Drive[1]. To link SR-11 to previously approved (under construction) SR-905, connectors would be provided and certain modifications to the approved SR-905 design would be required. These connections and interchanges are described below.

SR-905 Modifications to Accommodate SR-11 Connections

SR-905 was originally approved (and is now under construction between SR-125 and Britannia Boulevard) as a six-lane highway (three lanes in each direction), with a median wide enough to accommodate four additional lanes, two of which could function as HOV lanes should future demand justify their construction. The eastern portion of approved SR-905 includes one- and two-lane ramps from SR-905, just east of the SR-905/SR-125 interchange, to Enrico Fermi Drive, along similar alignments to to those which are now proposed as connectors between SR-11 and SR-905. With implementation of SR-11, certain modifications to the approved SR-905 design would be required, and are included as part of the proposed project (refer to Figure 5). These modifications are described below for the Two Interchange Alternative, but would be the same under the One and No Interchange Alternatives.

[1] The Caltrans Highway Design Manual defines an undercrossing as a structure designed to allow a local roadway to pass under a highway, while an overcrossing is defined as a structure designed to allow a local roadway to pass over a highway. An interchange is defined as a system of interconnecting roadways in conjunction with one or more grade separations providing for the interchange of traffic between two or more roadways on different levels.

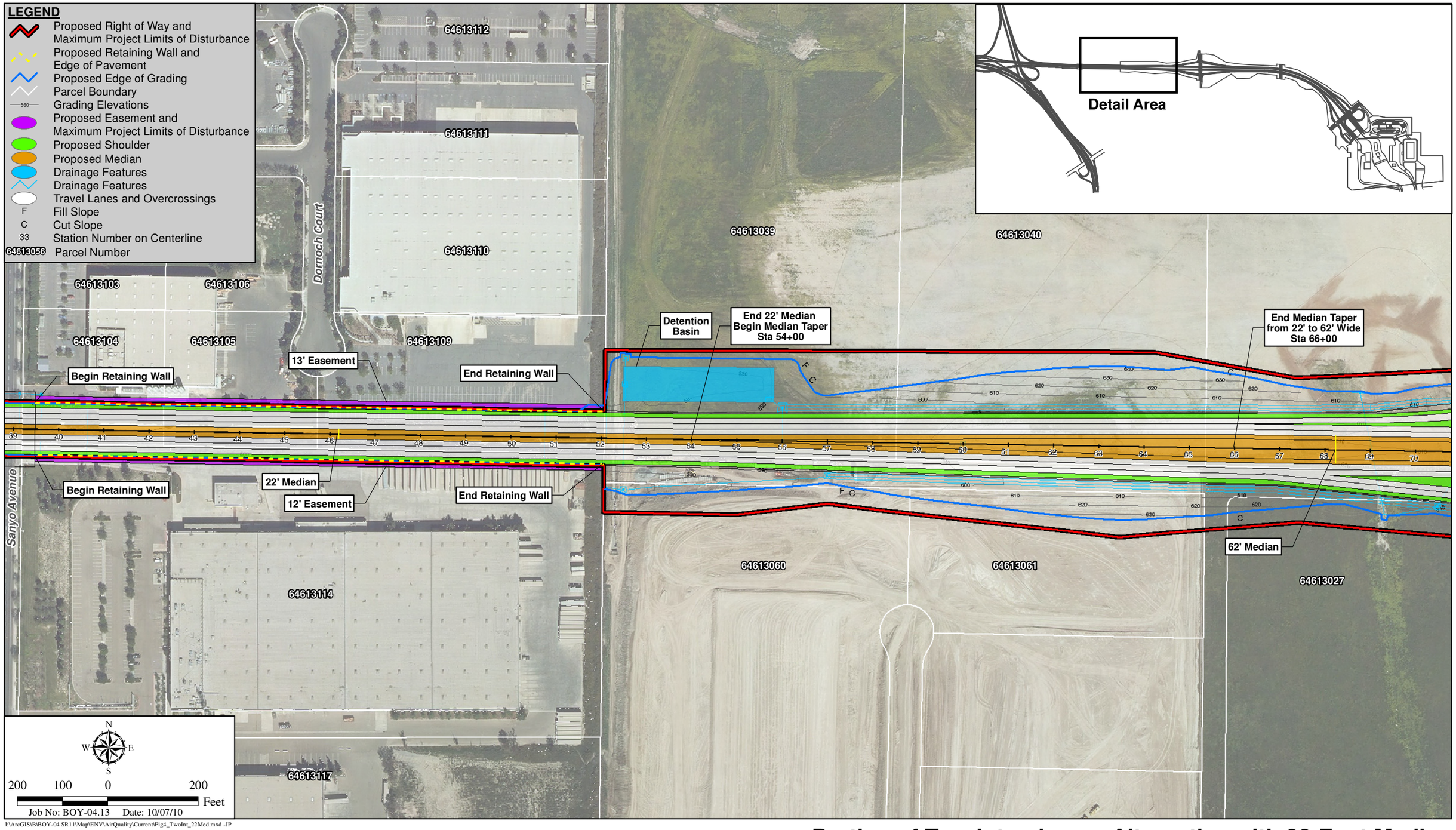
- The previously approved on-/off-ramps from SR-905 to Enrico Fermi Drive would be replaced by the western portion of SR-11 (east of Harvest Road), as well as two-lane connectors in each direction (west of Harvest Road) for the entire distance linking SR-905 and SR-11, along similar alignments compared to the previously approved on- and off-ramps, within the approved R/W for the SR-905 project;
- On the eastbound side of SR-905, an additional auxiliary lane would be extended between La Media Road and the SR-11 connector, requiring the widening of this area by up to 12 feet;
- To accommodate weaving movements on the westbound side of SR-905, the two SR-11 connecting lanes would join the three approved SR-905 travel lanes, tapering to the approved three-lane cross-section over approximately 1.7 miles. To accommodate the SR-11 connecting lanes, the proposed project would widen SR-905 on its northern boundary between the SR-905/SR-125/SR-11 interchange and the La Media Road interchange by up to 24 feet, and would replace up to 12 feet of the median width with auxiliary lane from just east of La Media Road to just west of Britannia Boulevard.

The SR-905 modifications to accommodate SR-11 connections would extend approximately 2.1 miles west of the terminus of SR-11 itself, at approximately Harvest Road, and would be entirely within existing SR-905 R/W. All other connectors within the SR-905/SR-125/SR-11 Interchange would remain as they were approved under the SR-905 and SR-125 projects. Potential design variations for the SR-905/SR-125/SR-11 interchange involving the addition of new connectors are presented later in this chapter.

Enrico Fermi Drive and Siempre Viva Road Interchanges

Under this alternative, two interchanges would be constructed along SR-11, at Enrico Fermi Drive and Siempre Viva Road.

The proposed interchange at Enrico Fermi Drive would be a full diamond interchange (refer to Figure 3). This interchange would be located approximately one mile east of the SR-905/SR-125/SR-11 Interchange, and approximately one mile west of the proposed interchange at Siempre Viva Road.



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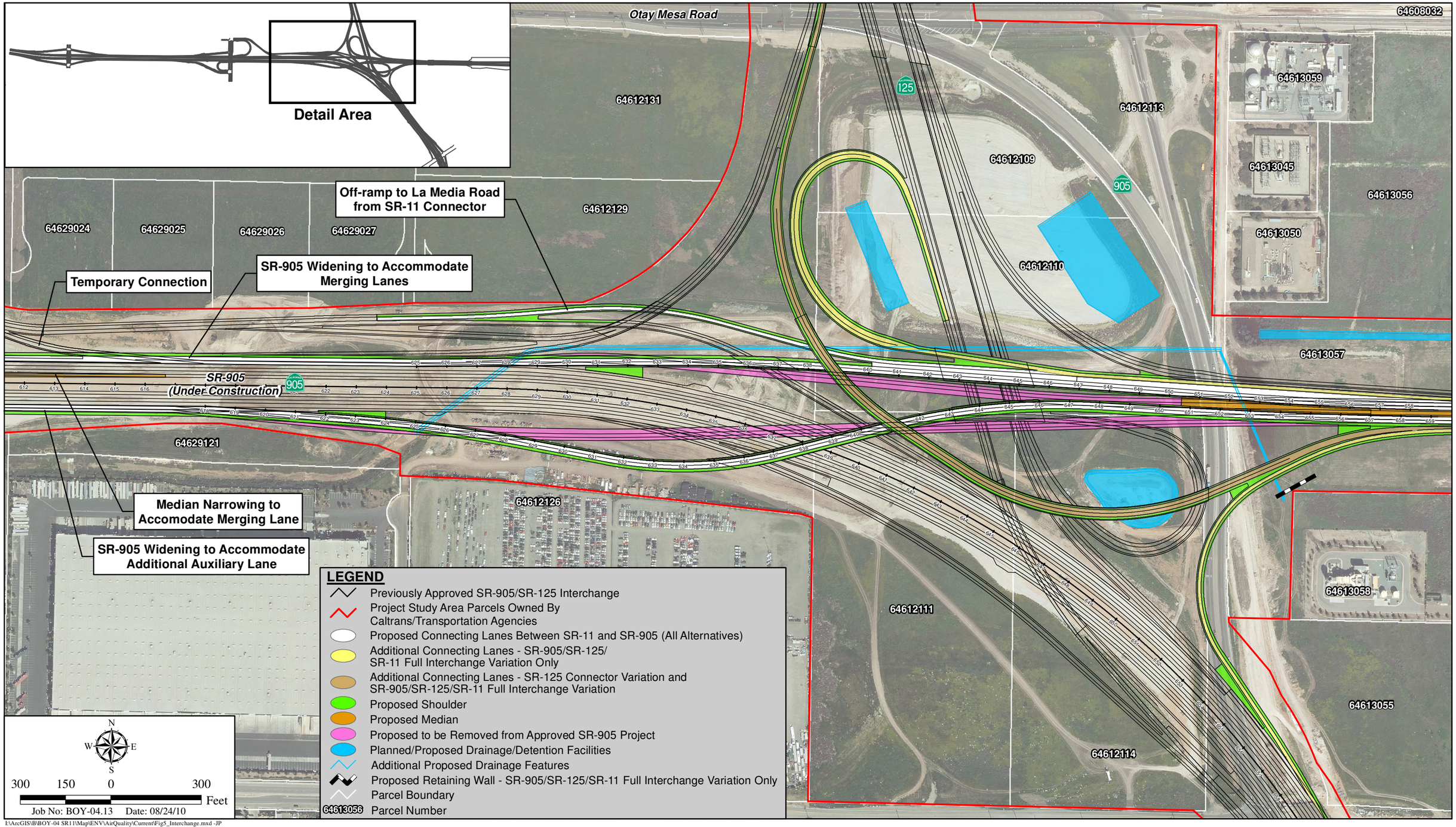
Portion of Two Interchange Alternative with 22-Foot Median

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 4



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SR-905/SR-125/SR-11 Interchange and Variations

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 5

The proposed Siempre Viva Road Interchange under this alternative would be a partial clover interchange (no westbound exit to Siempre Viva Road eastward, and no entrance to eastbound SR-11 from Siempre Viva Road), as shown in Figure 6.

Otay Mesa East POE

The proposed POE would accommodate northbound and southbound commercial and passenger traffic, as well as pedestrians and bicycles. The POE site would be accessed from the north by SR-11. From the south, entry would be through the proposed Otay II POE on the Mexican side of the border (Figure 7, Conceptual Otay Mesa East POE and CVEF Layout).

The current POE shape and layout have been adjusted from those shown in the Phase I PEIR/PEIS to reflect subsequent design changes for the proposed SR-11 corridor and the Otay II POE in Mexico.

Following implementation of the proposed project, it is anticipated that the existing Otay Mesa POE would remain open to all commercial, passenger and pedestrian traffic, while the existing POE at San Ysidro would continue to accommodate only passenger and pedestrian traffic. The GSA feasibility study conducted as part of the Otay Mesa East POE Phase I analysis (GSA 2008) concluded that this would be the most efficient operational arrangement to accommodate projected traffic in the San Diego-Tijuana region.

Transit Center Site

The overall POE footprint includes space to accommodate a potential future transit center adjacent to the POE. This potential transit facility is not part of the proposed project and would be designed and constructed by others. The intent of reserving space for a potential future transit center is to ensure that opportunities to implement transit service to the POE, such as BRT, would not be precluded by future development in the project site vicinity. It is currently anticipated that a potential future transit center would encompass an approximately two-acre rectangular site in the vicinity of the western POE boundary.

Commercial Vehicle Enforcement Facility

The proposed site for the new CVEF would include approximately 23 acres and would be located east of SR-11 along the northern POE boundary (refer to Figure 7). After receiving clearance to enter the U.S. at the POE, northbound commercial vehicles would be routed into the CVEF facility for a safety/weight inspection by the California Highway Patrol (CHP) prior to being released onto the regional roadway system.

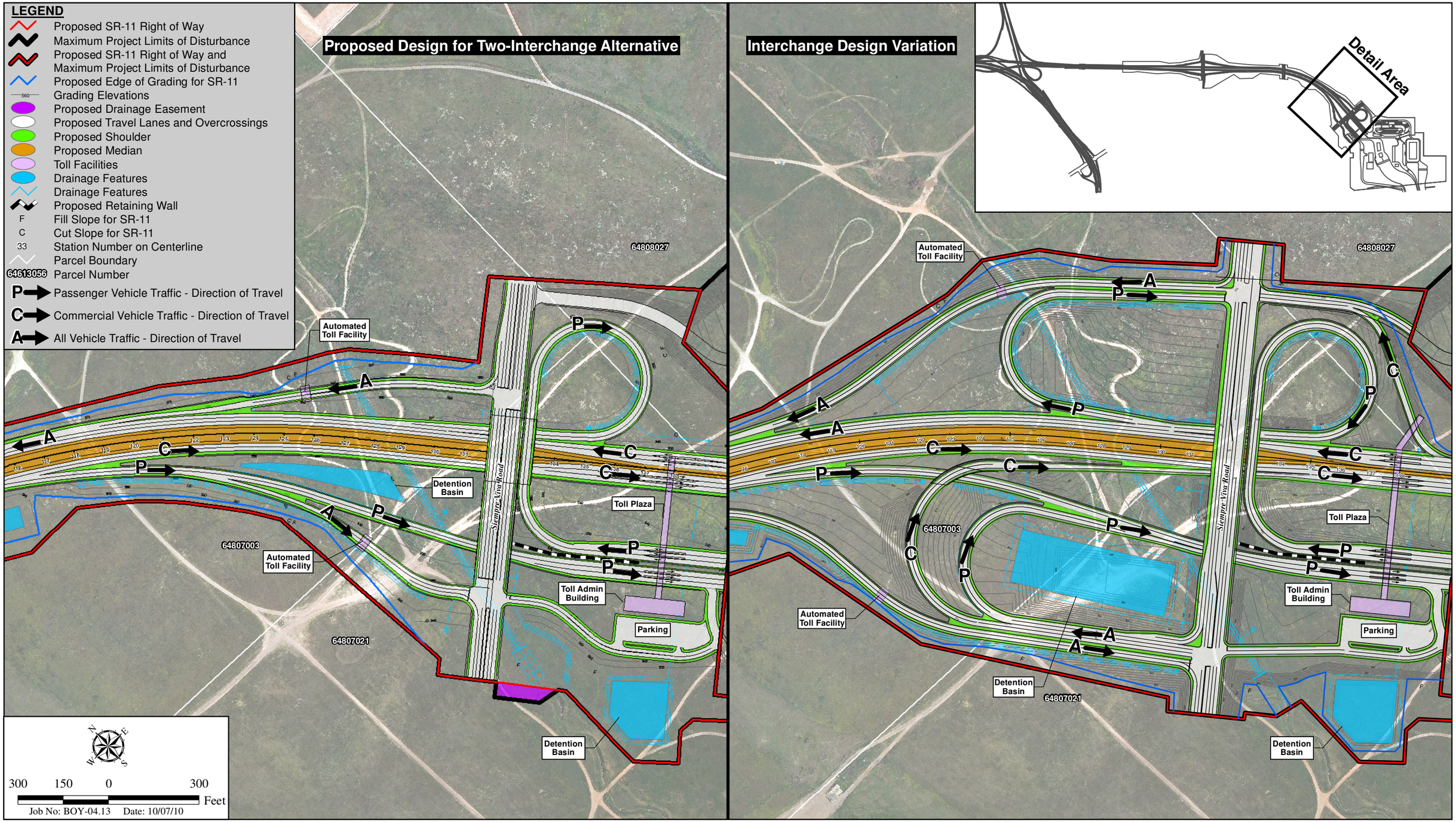
One Interchange Alternative

The designs of the SR-905/SR-125/SR-11 Interchange, the SR-11/SR-905 connectors, the Otay Mesa East POE (including the potential future transit center site), and the CVEF would be the same under this alternative as described above for the Two Interchange Alternative. The unique features of the One Interchange Alternative would involve SR-11.

Under the One Interchange Alternative, the proposed SR-11 would be constructed with a single interchange at Alta Road, approximately 1.4 miles east of the SR-905/ SR-125/SR-11 Interchange (refer to Figure 3). SR-11 would have an undercrossing at Sanyo Avenue and overcrossings at Enrico Fermi Drive and Siempre Viva Road.

In contrast to the Two Interchange Alternative scenario, SR-11 at Siempre Viva Road would be constructed as an overcrossing, rather than an interchange, under this alternative. Despite this difference, several design elements at the SR-11/Siempre Viva Road overcrossing would be similar to the SR-11/Siempre Viva Road Interchange under the Two Interchange Alternative (refer to Figures 3 and 6). Ramps would still be provided in this location to connect SR-11 to the POE, but no direct access would be provided between SR-11 and Siempre Viva Road.

The One Interchange Alternative would have a slightly smaller footprint between Sanyo Avenue and Enrico Fermi Drive than would the Two Interchange Alternative, due to the elimination of the Enrico Fermi Drive Interchange and its associated auxiliary lanes (refer to Figure 8, Portion of One and No Interchange Alternative with 22-Foot Median).



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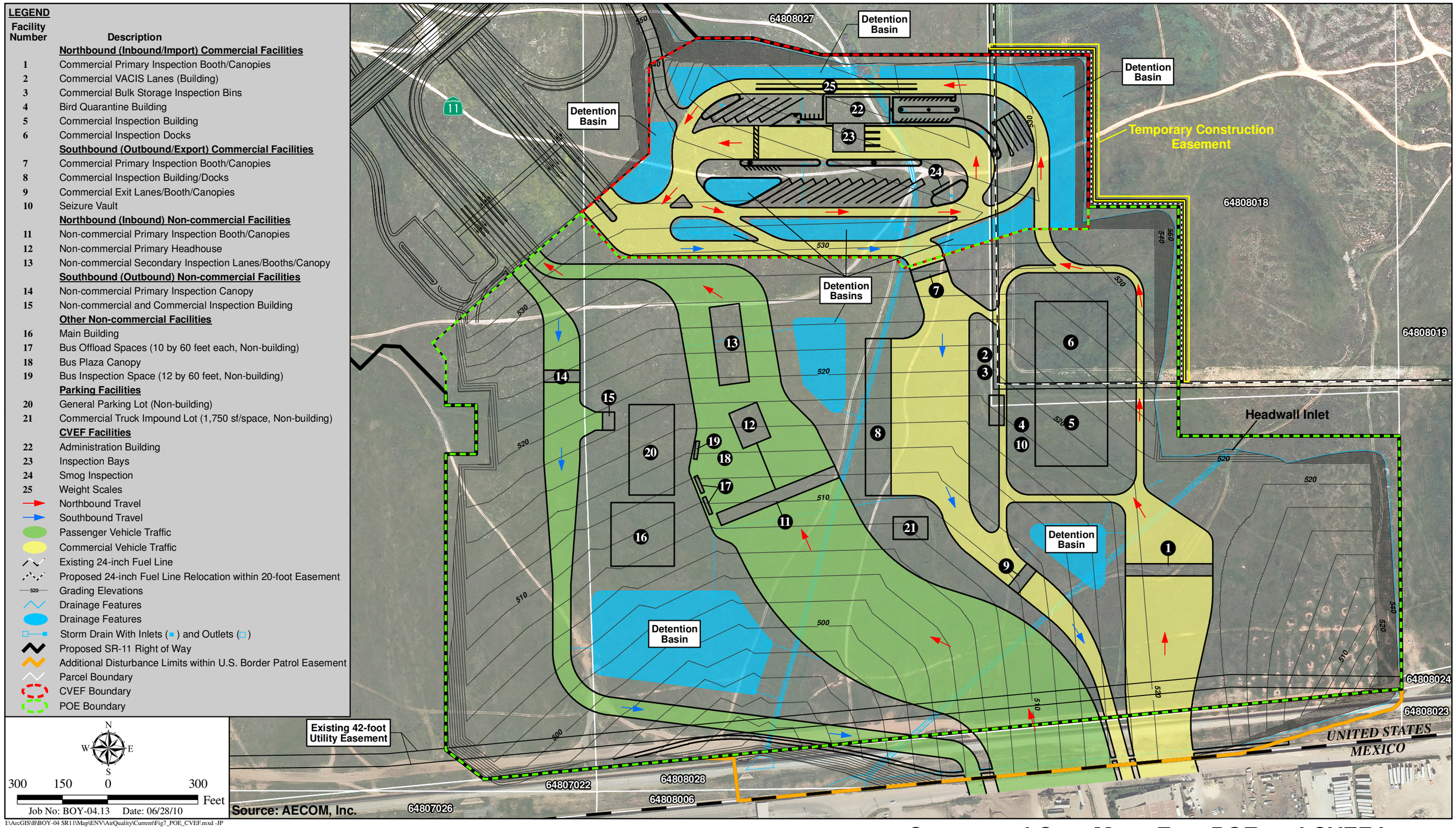
Siempre Viva Road Full Interchange Variation

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 6



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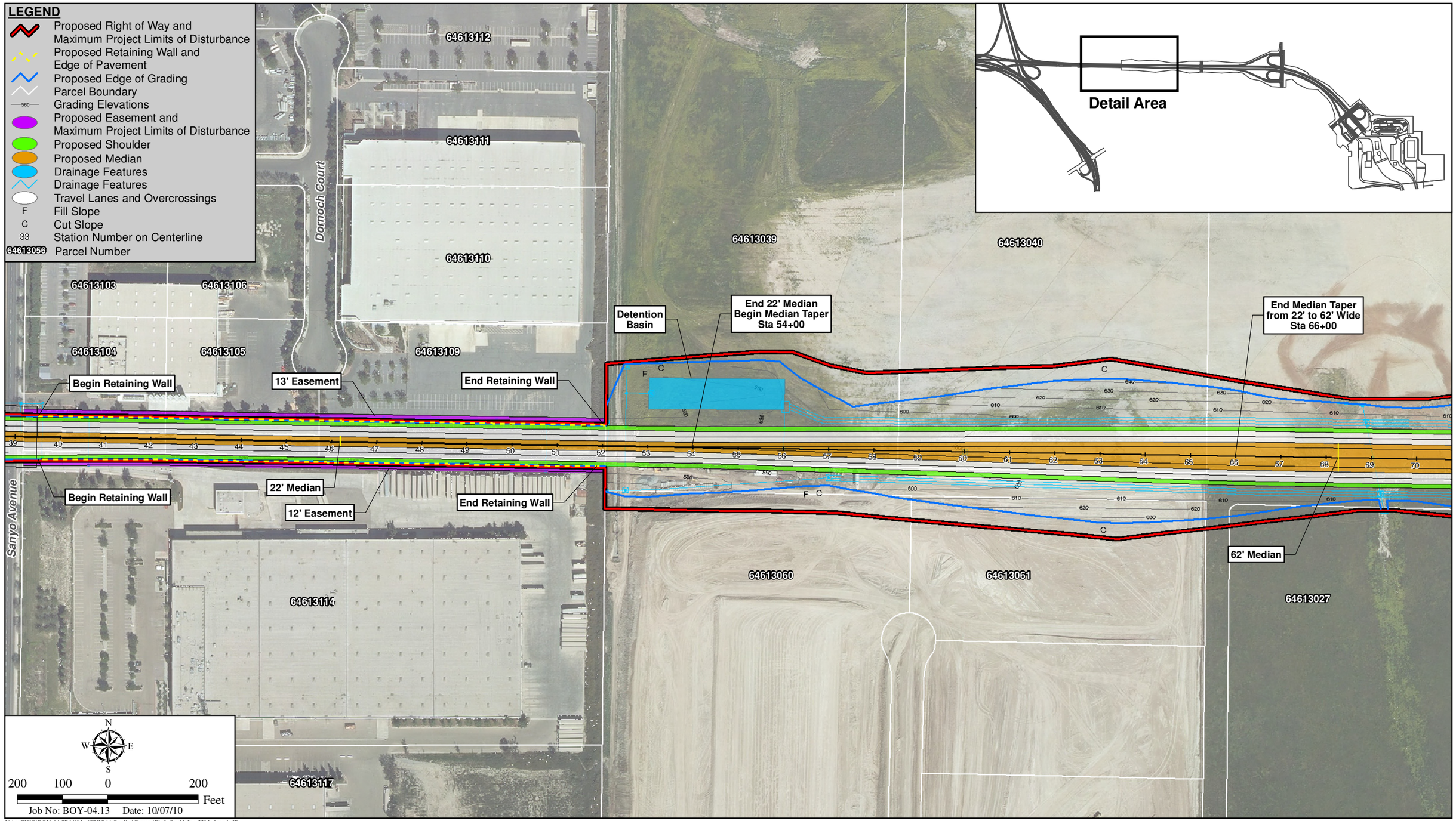
Conceptual Otay Mesa East POE and CVEF Layout

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 7



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Portion of One and No Interchange Alternative with 22-Foot Median

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 8

No Interchange Alternative

The designs of the SR-905/SR-125/SR-11 Interchange, the SR-11/SR-905 connectors, the Otay Mesa East POE (including the potential future transit center site), and the CVEF would be the same under this alternative as described above for the Two Interchange Alternative. The unique features of the One Interchange Alternative would involve SR-11.

Under the No Interchange Alternative, no interchanges would be constructed along the proposed 2.1-mile SR-11 corridor. An undercrossing structure would be provided at Sanyo Avenue, and overcrossings would be built at Enrico Fermi Drive and Alta Road (refer to Figure 3). In addition, SR-11 at Siempre Viva Road would be constructed as an overcrossing, with the same design as described above for the One Interchange Alternative. As in the case of the One Interchange Alternative, the No Interchange Alternative would have a slightly smaller footprint between Sanyo Avenue and Enrico Fermi Drive than would the Two Interchange Alternative, due to the elimination of the Enrico Fermi Drive Interchange and its associated auxiliary lanes (refer to Figure 8).

Variations on the Build Alternatives

A number of design or operational variations are being evaluated for one or more of the described build alternatives, as outlined below.

No Toll Variation

The No Toll Variation could apply to any of the three build alternatives, and would involve the SR-11 corridor operating as a freeway instead of a toll highway. The principal design difference under this variation would be the lack of toll-related structures such as toll administration and FasTrak facilities.

46-foot Median Variation

Under this variation, the SR-11 median in the vicinity of Sanyo Avenue would be 46 feet instead of 22 feet wide, as depicted in Figure 9, Two Interchange Alternative Variation with 46-Foot Median, and Figure 10, One and No Interchange Alternative Variation with 46-Foot Median. This variation could apply to any of the three build alternatives.

SR-905/SR-125/SR-11 Interchange Design Variations

Two variations are being considered for the SR-905/SR-125/SR-11 Interchange, referred to as the SR-125 Connector Variation and the SR-905/SR-125/SR-11 Full Interchange Variation. These variations could apply to any of the three build alternatives.

SR-125 Connector Variation

Under the SR-125 Connector Variation, the southbound SR-125 to eastbound SR-11 connector would be added to the interchange (refer to Figure 5). A local connector ramp from Enrico Fermi Drive to northbound SR-125 was approved under the SR-905 project; all of the proposed project build alternatives assume a similar direct connector from westbound SR-11 to northbound SR-125. The addition of the complementary southbound SR-125 to eastbound SR-11 connector under this variation would complete the direct link between these two highways.

SR-905/SR-125/SR-11 Full Interchange Variation

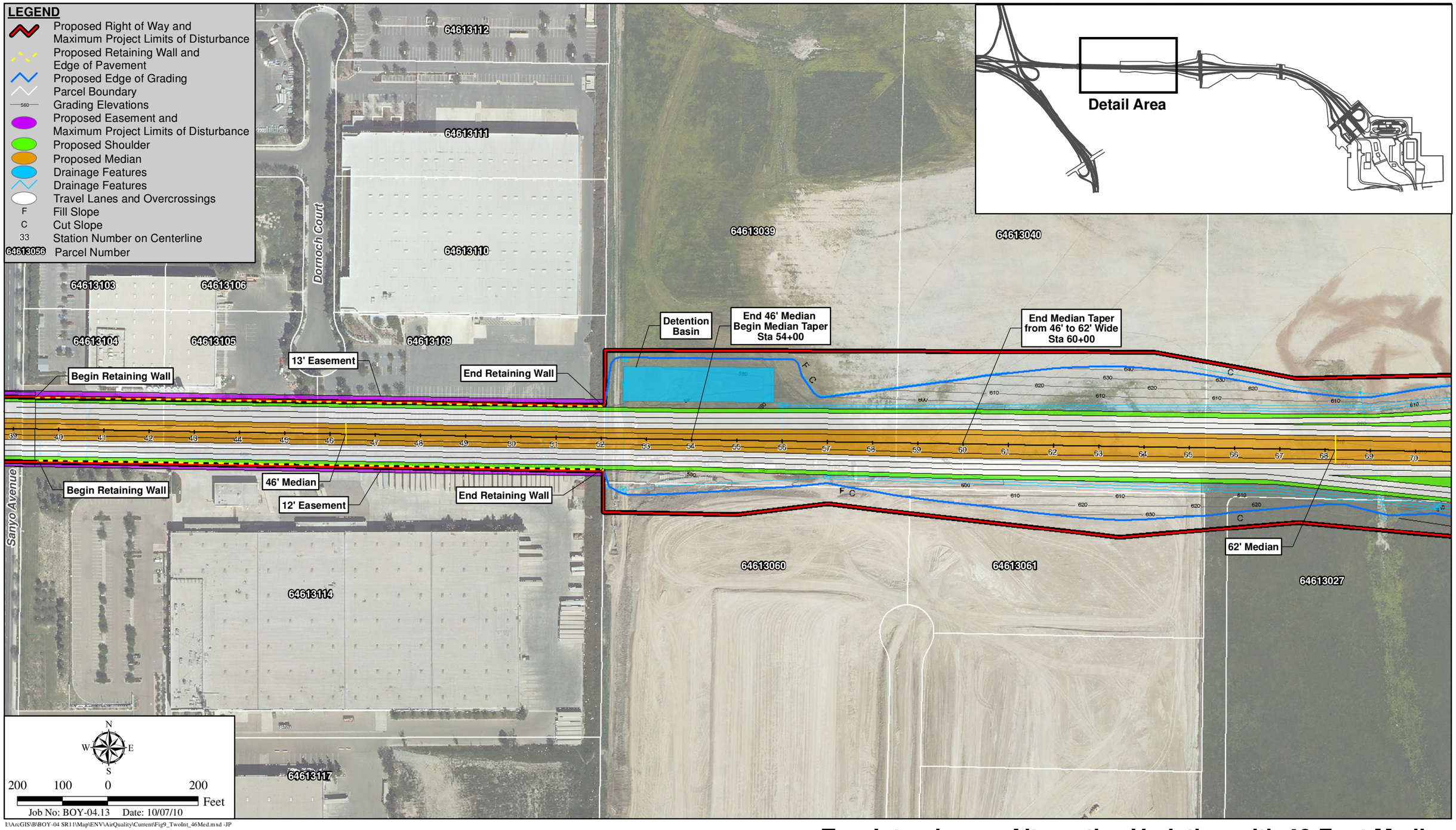
Under the SR-905/SR-125/SR-11 Full Interchange Variation, in addition to the SR-125 connector to be included under the SR-125 Connector Variation described above, the following connectors would also be added to the interchange to link SR-11 more directly to SR-905 (refer to Figure 5, SR-905/SR-125/SR-11 Interchange and Variations):

- Westbound SR-11 to eastbound SR-905; and
- Westbound SR-905 to eastbound SR-11.

The addition of these connectors would complete the planned SR-125/SR-905/SR-11 interchange, to provide full connectivity among the three highways.

Siempre Viva Road Full Interchange Design Variation

This variation would apply only to the Two Interchange Alternative, and would incorporate a full interchange at SR-11/Siempre Viva Road. The full interchange design under this variation would include a number of features that are the same as (or similar to) those described for the half interchange, as well as additional facilities to accommodate the full range of vehicle movements. Specific features associated with



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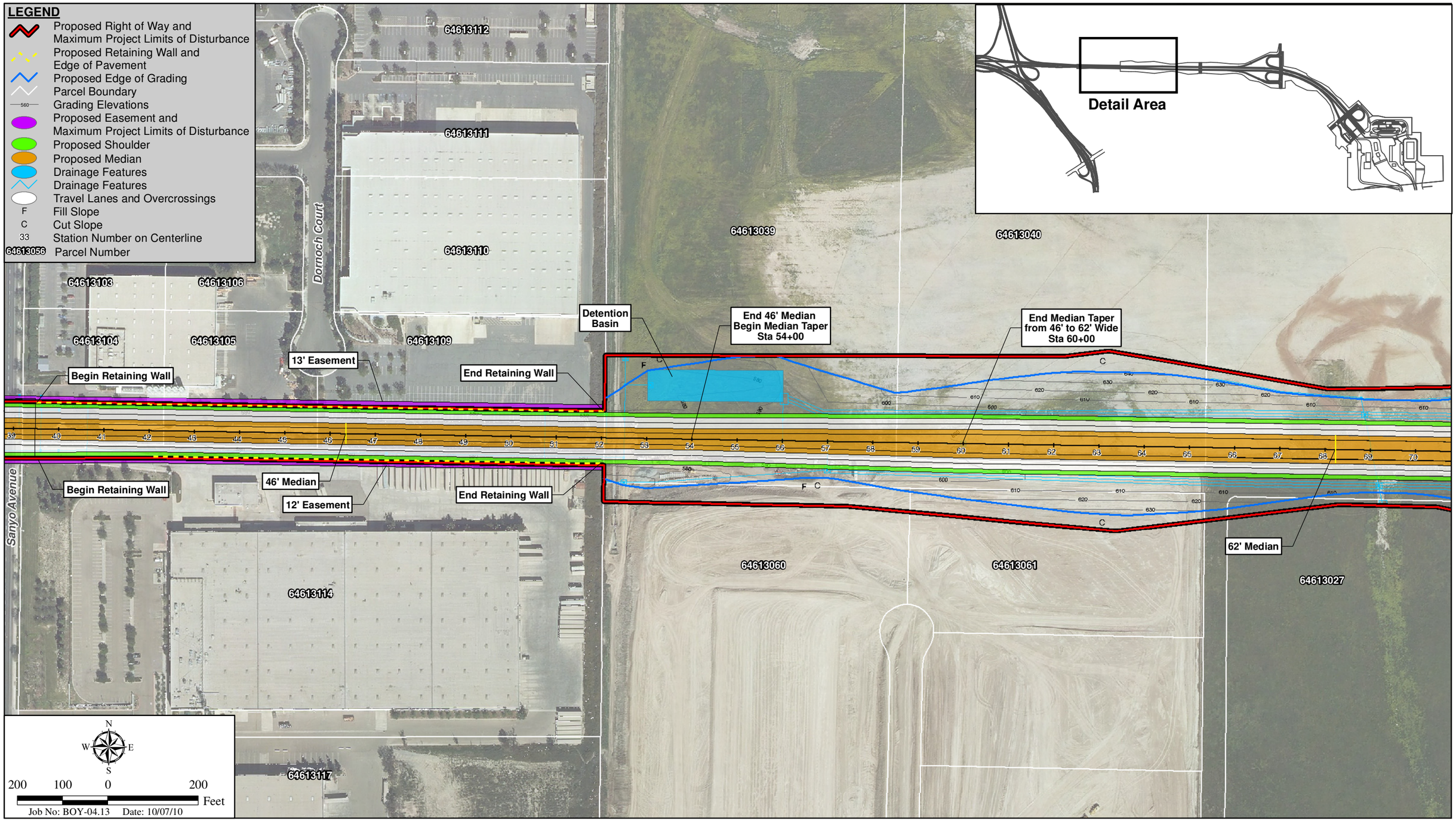
Two Interchange Alternative Variation with 46-Foot Median

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 9



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One and No Interchange Alternative Variation with 46-Foot Median

STATE ROUTE 11 AND OTAY MESA EAST PORT OF ENTRY - TIER II AIR QUALITY ANALYSIS

Figure 10

this variation are summarized below and shown on Figure 6, in comparison with the proposed design of this interchange for the Two Interchange Alternative. This variation would add:

- Two separate loop ramps (one for commercial-only traffic and one for passenger-only traffic) to provide access from Siempre Viva Road to the southbound lanes within the POE;
- A loop ramp for northbound passenger-only traffic from the POE to Siempre Viva Road; and
- Direct access for commercial-only traffic from the CVEF to Siempre Viva Road.

No Build Alternative

Under the No Build Alternative, none of the project components described above for the build alternatives would be constructed, including the 2.1-mile SR-11 highway (and associated interchanges, under/overcrossings, connectors, SR-905 modifications, and related facilities), the Otay Mesa East POE (including the potential future transit center site), and the CVEF. Ramps approved as part of the SR-905 project would be constructed between SR-905 and Enrico Fermi Drive.

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CHAPTER 2.0
AIR POLLUTANTS

"Air Pollution" is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation.

Seven air pollutants have been identified by the USEPA as being of concern nationwide: carbon monoxide (CO); ozone (O_3); nitrogen dioxide (NO_2); PM_{10}, also called respirable particulate and suspended particulate; $PM_{2.5}$; sulfur dioxide (SO_2); and lead. These pollutants are collectively referred to as criteria pollutants. The sources of these pollutants, their effects on human health and the nation's welfare, and their final deposition in the atmosphere vary considerably.

In the San Diego area, ambient concentrations of CO, O_3, and lead are primarily influenced by motor vehicle activity. Emissions of sulfur oxides (SO_X) are associated mainly with various stationary sources. Emissions of nitrogen oxides (NO_X) and particulate matter come from both mobile and stationary sources.

The criteria pollutants that are most important for this air quality impact analysis are those that can be traced principally to motor vehicles and to earth-moving activities. Of these pollutants, CO, NO_X, and PM_{10} are evaluated on a regional or "mesoscale" basis. CO is often analyzed on a localized or "microscale" basis in cases of congested traffic conditions. Although PM_{10} and $PM_{2.5}$ have very localized effects, there is no USEPA-approved methodology to evaluate microscale impacts of PM_{10} and $PM_{2.5}$.

In addition to the seven criteria air pollutants, toxic air contaminants including mobile source air toxics are discussed below.

2.1 CARBON MONOXIDE (CO)

CO is a colorless and odorless gas which, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the severest meteorological

and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Overall, CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO concentrations are typically higher in winter. As a result, California has required the use of oxygenated gasoline in the winter months to reduce CO emissions.

2.2 OZONE (O_3)

O_3 is the principal component of smog and is formed in the atmosphere through a series of reactions involving reactive organic gases (ROG) and NO_X in the presence of sunlight. ROG and NO_X are called precursors of O_3. NO_X includes various combinations of nitrogen and oxygen, including nitrogen oxide (NO), NO_2, NO_3, etc. O_3 is a principal cause of lung and eye irritation in the urban environment. Significant O_3 concentrations are normally produced only in the summer, when atmospheric inversions are greatest and temperatures are high. ROG and NO_X emissions are both considered critical in O_3 formation. Control strategies for O_3 have focused on reducing emissions from vehicles, industrial processes using solvents and coatings, and consumer products.

2.3 NITROGEN DIOXIDE (NO_2)

NO_2 is a product of combustion and is generated in vehicles and in stationary sources such as power plants and boilers. NO_2 can cause lung damage. As noted above, NO_2 is part of the NO_X family and is a principal contributor to O_3 and smog. In 2007, the ARB reduced the 1-hour average standard for NO_2 to 0.18 parts per million (ppm) and established a new annual standard of 0.030 ppm.

2.4 RESPIRABLE PARTICULATE MATTER (PM_{10})

Particulate matter includes both liquid and solid particles of a wide range of sizes and composition. While some PM_{10} comes from automobile exhaust, the principal source in San Diego County is dust from construction and from the action of vehicle wheels on paved and unpaved roads. In other areas, agriculture, wind-blown sand, and fireplaces can be important sources. PM_{10} can cause increased respiratory disease, lung damage, and premature death. Control of PM_{10} is achieved through the control of dust at construction sites, the cleaning of paved roads, and the wetting or paving of

frequently used unpaved roads. The USEPA revised the NAAQS for PM_{10} in 2006, eliminating the annual standard.

2.5 FINE PARTICULATE MATTER ($PM_{2.5}$)

The sources, health effects, and control of $PM_{2.5}$ are similar to those of PM_{10}. In 1997, the USEPA determined that the health effects of $PM_{2.5}$ were severe enough to warrant an additional standard, and standards for $PM_{2.5}$ became effective on September 15, 1997. The U.S. Supreme Court affirmed the standards, and policies and systems to implement these new standards. Formal attainment classifications for $PM_{2.5}$ were formally published on December 17, 2004, by the USEPA (USEPA 2004).

On June 20, 2002, the ARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by the ARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current state standards during some part of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide ranging (ARB 2002). Based upon a desire to set clean air goals throughout California, the ARB created a new annual average standard for $PM_{2.5}$ at 12 micrograms per cubic meter ($\mu g/m^3$). The USEPA revised the NAAQS for $PM_{2.5}$ in 2006, reducing the 24-hour standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$.

2.6 SULFUR DIOXIDE (SO_2)

SO_2 is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. The health effects of SO_2 include lung disease and breathing problems for asthmatics. SO_2 in the atmosphere contributes to the formation of acid rain. In the SDAB, there is relatively little use of coal and oil; therefore, SO_2 is of lesser concern than in many other parts of the country.

2.7 LEAD

Lead is a stable compound that persists and accumulates both in the environment and in animals. Previously, the lead used in gasoline anti-knock additives represented a major source of lead emissions to the atmosphere. The USEPA began working to

reduce lead emissions soon after its inception, issuing the first reduction standards in l973, which called for a gradual phase down of lead to one tenth of a gram per gallon by 1986. The average lead content in gasoline in 1973 was 2 to 3 grams per gallon or about 200,000 tons of lead per year. In 1975, passenger cars and light trucks were manufactured with a more elaborate emission control system, which included a catalytic converter that required lead-free fuel. In 1995, leaded fuel accounted for only 0.6 percent of total gasoline sales and less than 2,000 tons of lead per year. Effective January 1, 1996, the federal CAA banned the sale of the small amount of leaded fuel that was still available in some parts of the country for use in on-road vehicles (USEPA 1996). Lead emissions have significantly decreased due to the near elimination of the use of leaded gasoline.

2.8 TOXIC AIR CONTAMINANTS

In addition to the criteria air pollutants, USEPA regulates toxic air contaminants (TAC), also known as hazardous air pollutants. Concentrations of TACs are also used as indicators of ambient-air-quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established. Most TACs originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Air toxics are air pollutants that cause adverse health effects. The USEPA has focused most of its air toxics efforts to date on carcinogens, which are compounds that cause cancer; however, non-cancer health effects such as reproductive and neurological problems are also of concern to USEPA. Motor vehicles emit several pollutants that USEPA classifies as known or probable human carcinogens. Benzene, for instance, is a known human carcinogen, while formaldehyde, 1,3-butadiene and diesel particulate matter are probable human carcinogens. Studies are underway to determine whether other toxic substances are present in mobile source emissions.

The USEPA estimates that mobile source (vehicles) air toxics account for as much as half of all cancers attributed to outdoor sources. This estimate is not based on actual cancer cases, but on models that predict the maximum number of cancers that could be expected from current levels of exposure to mobile source emissions. The models consider available health studies, air quality data, and other information about the types of vehicles and fuels currently in use. Non-road mobile sources, such as tractors and snowmobiles, also emit air toxics.

Some toxic compounds are present in gasoline and are emitted to the air when gasoline evaporates or passes through the engine as unburned fuel. Benzene, for example, is a component of gasoline. A significant amount of automotive benzene comes from the incomplete combustion of compounds in gasoline such as toluene and xylene that are chemically very similar to benzene. Like benzene itself, these compounds occur naturally in petroleum and become more concentrated when petroleum is refined to produce high-octane gasoline. Formaldehyde, diesel particulate matter, and 1,3-butadiene are not present in fuel but are by-products of incomplete combustion. Formaldehyde is also formed through a secondary process when other mobile source pollutants undergo chemical reactions in the atmosphere.

Mobile Source Air Toxics (MSATs)

The Clean Air Act identified 188 TACs. The USEPA has assessed this expansive list of toxics and identified a group of 21 TAC's as Mobile Source Air Toxics (MSATs), which are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. The USEPA also extracted a subset of this list of 21 MSAT's that it now labels as the seven priority MSATs. These are *benzene, formaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, 1,3-butadiene, naphthalene, and polycyclic organic matter (POM)* (FHWA 2009). While these MSATs are considered the priority transportation toxics, the USEPA stresses that the lists are subject to change and may be adjusted in future rules (FHWA 2009).

The USEPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to an FHWA analysis, even if the

number of vehicle miles traveled increases by 64 percent, reductions of 57 percent to 87 percent in MSATs are projected from 2000 to 2020. Project MSAT impacts are discussed in Section 5.1 of this report.

Diesel Exhaust Particulate

In 1999, the ARB identified particulate emissions from diesel-fueled engines as a TAC. Once a substance is identified as a TAC, the ARB is required by law to determine if there is a need for further control. This is referred to as risk management (ARB 2006). The process of further studies is ongoing at the ARB, with committees meeting to analyze both stationary and mobile diesel engine sources, as well as many other aspects of the problem. In October 2000, the ARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* and *the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines* (ARB 2000a and 2000b). ARB programs in progress relating to truck emissions are included in the following paragraphs. There are other programs for risk reduction for off-road diesel engines.

In February 2001, the USEPA issued new rules requiring cleaner diesel fuels in 2006 and beyond. However, since 1993 California's regulations have required cleaner diesel fuel than the federal requirements. The 1993 federal regulations reduced particulate emissions by 5 percent, while the California regulations reduced particulate emissions by 25 percent.

The control of emissions from mobile sources is a statewide responsibility of the ARB that has not been delegated to the local air districts. However, the San Diego APCD is participating in the administration programs to reduce diesel emissions, principally by procurement and use of replacement vehicles powered by natural gas.

Some air districts have issued preliminary project guidance for projects with large or concentrated numbers of trucks, such as warehouses and distribution facilities. No standards exist for quantitative impact analysis for diesel particulates.

2.9 ASBESTOS

The federal CAA requires the USEPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with federal CAA Section 112, the USEPA established

National Emissions Standards for Hazardous Air Pollutants (NESHAP) to protect the public. Asbestos was one of the first hazardous air pollutants regulated under this section. On March 31, 1971, the USEPA identified asbestos as a hazardous pollutant, and on April 6, 1973, first promulgated the asbestos NESHAP in 40 CFR Part 61. In 1990, a revised NESHAP regulation was promulgated by the USEPA.

The asbestos NESHAP regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling, and disposal of asbestos-containing material. Accordingly, the asbestos NESHAP specifies work practices to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). In addition, the regulations require the project applicant to notify applicable state and local agencies and/or USEPA regional offices before all demolitions or before construction that contains a certain threshold amount of asbestos.

There will be no demolition or renovation of existing buildings and bridges; therefore, airborne asbestos would not be a concern within the project limits.

Naturally Occurring Asbestos (NOA) -bearing Serpentine

Serpentine is a mineral commonly found in seismically active regions of California, usually in association with ultramafic rocks and along associated faults. Certain types of serpentine occur naturally in a fibrous form known generically as asbestos. Asbestos is a known carcinogen and inhalation of asbestos may result in the development of lung cancer or mesothelioma. The ARB has regulated the amount of asbestos in crushed serpentinite used in surfacing applications, such as for gravel on unpaved roads, since 1990. In 1998, new concerns were raised about health hazards from activities that disturb asbestos-bearing rocks and soil. In response, the ARB revised their asbestos limit for crushed serpentines and ultramafic rock in surfacing applications from 5 percent to less than 0.25 percent, and adopted a new rule requiring best practices dust control measures for activities that disturb rock and soil containing NOA (CDC 2000).

According to the report “A General Location Guide for Ultramafic Rocks in California-Area Likely to Contain Naturally Occurring Asbestos” (CDC 2000), the coastal portion of San Diego County NOA is not typically found in the geological formations present on the proposed project site (CDC 2000). Thus, hazardous exposure to asbestos-containing serpentine materials would not be a concern with the proposed project.

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CHAPTER 3.0
APPLICABLE STANDARDS

3.1 FEDERAL AND STATE STANDARDS

The federal CAA (42 U.S.C. §§ 7401-7671q) requires the adoption of national ambient air quality standards (NAAQS) to protect the public health and welfare from the effects of air pollution. The NAAQS have been updated as needed. Current standards are set for SO_2, CO, NO_2, O_3, PM_{10}, $PM_{2.5}$, and lead. The ARB has established the California Ambient Air Quality Standards (CAAQS) that are generally more restrictive than the NAAQS and include additional pollutants. The federal and California air quality standards are shown in Table 3.

3.2 REGIONAL AUTHORITY

In San Diego County, the APCD is the agency responsible for the administration of federal and California air quality laws, regulations, and policies. The APCD's tasks include the monitoring of air pollution, the preparation of the SIP for the SDAB, and the promulgation of "The Rules and Regulations" of the SIP. The SIP includes strategies and tactics to attain the federal O_3 standard. The SIP elements are taken from the Regional Air Quality Strategy (RAQS), the APCD's plan for attaining the California O_3 standard, which is more stringent than the federal standard. The Rules and Regulations include procedures and requirements to control the emission of pollutants and to prevent adverse air quality impacts.

The APCD does not have quantitative emissions limits for construction activities, nor for long-term emissions that may result from increased vehicle use.

One APCD rule is noted with respect to the proposed project:

- APCD Rule 51, Nuisance, prohibits emissions that cause injury, detriment, nuisance, or annoyance to the public.

The project is required to comply with this rule, and conformance will be incorporated into project specifications and procedures.

Table 3
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	-	Same as Primary Standard
	8-Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	-	
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	15.0 µg/m^3	
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1-Hour	0.18 ppm (339 µg/m^3)	0.10 ppm (188 µg/m^3)	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-	0.030 ppm (80 µg/m^3)	-
	24-Hour	0.04 ppm (105 µg/m^3)		-
	3-Hour	-	-	0.5 ppm (1300 µg/m^3)
	1-Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	-
Lead (Pb)[6]	30-Day Average	1.5 µg/m^3	-	-
	Calendar Quarter	-	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average	-	0.15 µg/m^3	
Hydrogen Sulfide (H_2S)	1-Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Sulfates (SO_4)	24-Hour	25 µg/m^3		

Table 3 (cont.) NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS				
Ambient Air Quality Standards				
Pollutant	**Averaging Time**	**California Standards[1]**	**Federal Standards[2]**	
		Concentration[3]	**Primary[3,4]**	**Secondary[3,5]**
Visibility Reducing Particles	8-Hour	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.		
Vinyl Chloride[6]	24-Hour	0.01 ppm (26 µg/m^3)		

Source: EPA-NAAQS (http://www.epa.gov/air/criteria.html); CARB-CAAQS (http://www.arb.ca.gov/research/aaqs/aaqs2.pdf). Nov. 17 2008.

Notes:
µg/m^3 = micrograms per cubic meter.
mg/m^3 = milligrams per cubic meter.
ppm = parts per million.
1 - California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM_{10}, $PM_{2.5}$, and visibility-reducing particles— are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 - National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.
3 - Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 Torricelli. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 Torricelli; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4 - National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
5 - National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant
6 - California ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

3.3 CONFORMITY OF FEDERAL ACTIONS

Section 176(c) of the federal CAA requires:

> No department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to an implementation plan after it has been approved …

Conformity to an implementation plan means:

(A) conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and

(B) that such activities will not:

(i) cause or contribute to any new violation of any standard in any area;
(ii) increase the frequency or severity of any existing violation of any standard in any area; or
(iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

The determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel and congestion estimates as determined by the metropolitan planning organization or other agency authorized to make such estimates.

In November 1993, the U.S. Department of Transportation (USDOT) and USEPA developed guidance for determining conformity of transportation plans, programs, and projects. This guidance is denoted as the Transportation Conformity Rule (40 C.F.R. §§ 51.390 and 40 C.F.R. §§ 93.100-129).

The metropolitan planning organization responsible for the preparation of regional transportation plan and program and the associated air quality analyses is SANDAG. The regional plan is the RTP and the regional program is the RTIP. The most current approved versions of the plan and program are the 2030 San Diego RTP: Pathways for the Future (SANDAG 2006a) and 2008 RTIP, (SANDAG 2008). The proposed project description is included in both of these plans, and thus conforms to the SIP. Details relative to the 2030 RTP and 2008 RTIP status and approvals, and the project listings are in Section 5.1 of this report.

CHAPTER 4.0
EXISTING CONDITIONS

4.1 ENVIRONMENTAL SETTING, CLIMATE, AND METEOROLOGY

The project is located in the SDAB, which is coincident with San Diego County. The climate of San Diego County is characterized by warm, dry summers and mild, wet winters. One of the main determinants of the climatology is a semipermanent high pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low pressure storms are brought into the region, causing widespread precipitation. In San Diego County, the months of heaviest precipitation are November through April, averaging about 9 to 14 inches annually. The mean temperature recorded at the Chula Vista monitoring station (the closest station to the site) is 60.9 degrees Fahrenheit (°F) and the mean maximum and mean minimum temperatures are 68.4°F and 53.5°F, respectively (WRCC 2009).

The Pacific High also influences the wind patterns of California. The predominant wind directions are westerly and west-southwesterly during all four seasons, and the average annual wind speed is 5.6 miles per hour (mph).

A common atmospheric condition known as a temperature inversion affects air quality in San Diego. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific High comes into contact with cooler marine air. The boundary between the layers of air represents a temperature inversion that traps pollutants below it. The inversion layer is approximately 2,000 feet above mean sea level (AMSL) during the months of May through October. However, during the remaining months (November through April), the temperature inversion is approximately 3,000 feet AMSL. Inversion layers are important elements of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

4.2 REGIONAL AND LOCAL AIR QUALITY

Specific geographic areas are classified as either “attainment” or “nonattainment” areas for each pollutant based on the comparison of measured data with federal and state

standards. If an area is redesignated from nonattainment to attainment, the federal CAA requires a revision to the SIP, called a maintenance plan, to demonstrate how the air quality standard will be maintained for at least 10 years. The Transportation Conformity Rule, 51 CFR 390-464, classifies an area required to develop a maintenance plan as a maintenance area.

The SDAB currently meets the federal standards for all criteria pollutants except O_3. San Diego County completed 3 years within the federal 1-hour O_3 standard on November 15, 2001, becoming eligible for redesignation as an attainment area. Formal redesignation by the USEPA as an O_3 attainment area occurred on July 28, 2003, and a maintenance plan was approved. On April 15, 2004, the USEPA issued the initial designations for the 8-hour O_3 standard, and the SDAB is classified as "basic" nonattainment. Basic is the least severe of the six degrees of O_3 nonattainment. The APCD was required to submit an air quality plan to the USEPA in 2007; the plan demonstrates how the 8-hour O_3 standard will be attained by 2009 (APCD 2007)[2]. The SDAB currently falls under a federal "maintenance plan" for CO, following a 1998 redesignation as a CO attainment area.

For the California standards, the SDAB is currently classified as a "serious" nonattainment area for O_3, and a nonattainment area for $PM_{2.5}$ and PM_{10} (ARB 2007a).

Ambient air pollutant concentrations in the SDAB are measured at 10 air quality monitoring stations operated by the APCD. The APCD air quality monitoring station that represents the project area, climate, and topography in the SDAB is the Otay Mesa Monitoring Station. This station monitors CO, NO_2, O_3, SO_x, and PM_{10}. According to the APCD, PM_{10} concentrations measured at the Otay Mesa Monitoring Station are heavily influenced by the site's proximity to the truck border crossing at the U.S.-Mexico port of entry. To better measure PM_{10} concentrations representing the Otay Mesa area as a whole, a parallel monitor was established at the Donovan Correctional Center, located two miles north of the existing monitoring station (APCD 2009). PM_{10} data from this monitoring station were considered more representative of the project area. Table 4 summarizes the excesses of standards and the highest pollutant levels recorded at these stations for the years 2006 to 2008. It should be noted that the highest exceedances of the 24-hour federal PM_{10} and $PM_{2.5}$ standards occurred during the southern California fire event of 2007.

[2] The SIP was approved by the California Air Resources Board on May 24, 2007 and is awaiting federal approval.

Figures 11 and 12 provide graphs showing ambient monitoring data for PM10 and PM2.5 in the project area versus the CAAQS and NAAQS.

Figure 11 Ambient PM_{10} Concentrations (24-hour and Annual) Compared with CAAQS and NAAQS

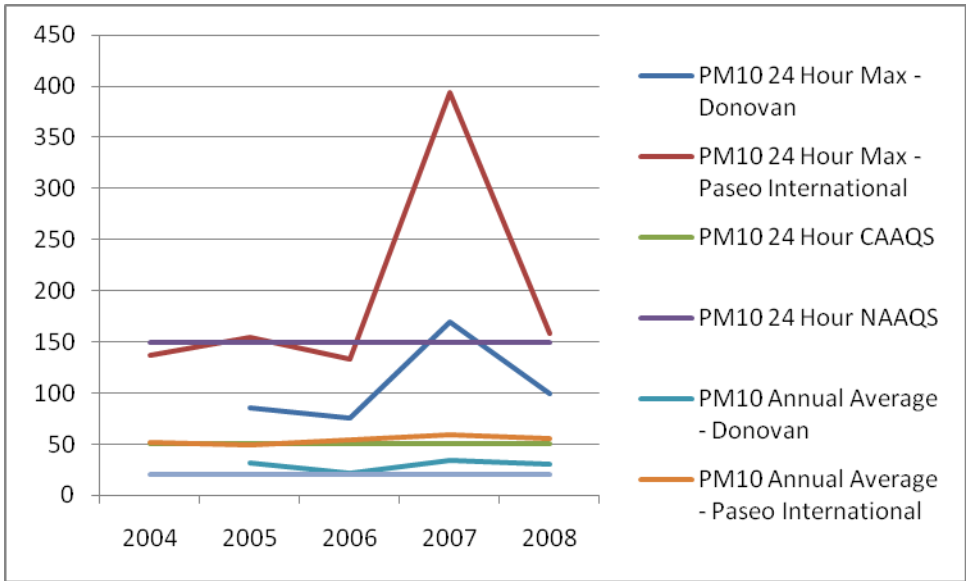


Figure 12 Ambient $PM_{2.5}$ Concentrations (24-hour and Annual) Compared with CAAQS and NAAQS

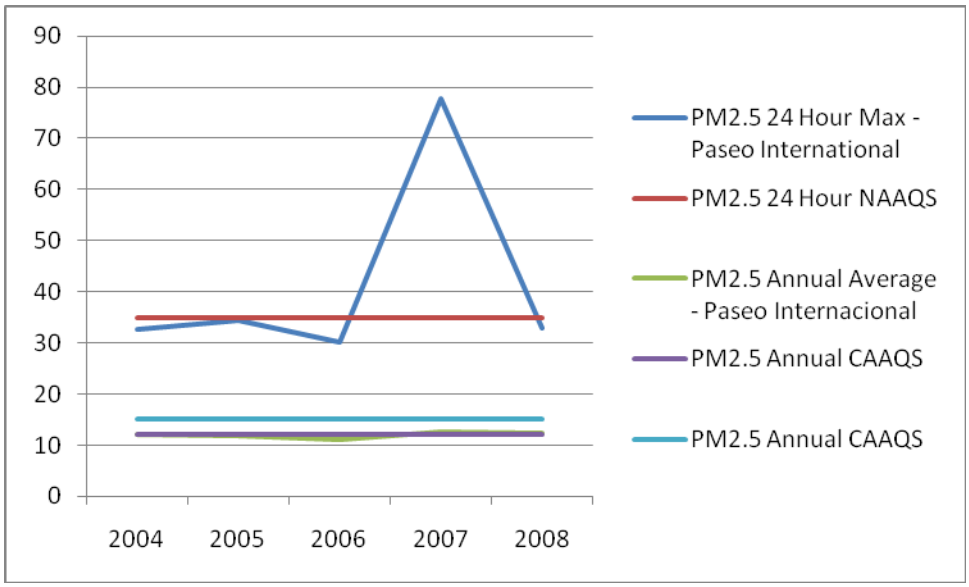


Table 4
AMBIENT AIR QUALITY SUMMARY
OTAY MESA PASEO INTERNATIONAL MONITORING STATION (CO, NO_2, SO_2, O_3, PM_{10})
CHULA VISTA MONITORING STATION ($PM_{2.5}$)

Pollutant Standards	2006	2007	2008
Carbon Monoxide (CO)			
Maximum 1-hour concentration (ppm)	5.1	5.7	4.3
Maximum 8-hour concentration (ppm)	3.36	3.39	3.51
Number of Days Standard Exceeded			
NAAQS 1-hour (≥35 ppm)	0	0	0
CAAQS 1-hour (≥20 ppm)	0	0	0
NAAQS 8-hour (≥9 ppm)	0	0	0
CAAQS 8-hour (≥9.0 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.097	0.101	0.123
Annual Average (ppm)	0.024	0.022	0.024
Number of Days Standard Exceeded			
CAAQS 1-hour	0	0	0
NAAQS 1-hour	0	0	0
Sulfur Dioxide (SO_X)[ab]			
Maximum 24-hour concentration (ppm)	0.007	0.009	0.006
National annual average concentration (ppm)	0.003	0.003	0.002
Number of Days Standard Exceeded			
NAAQS 24-hour (>0.14 ppm)	0	0	0
CAAQS 24-hour (>0.04 ppm)	0	0	0
Ozone (O_3)			
Maximum 1-hour concentration (ppm)	0.087	0.092	0.099
Maximum 8-hour concentration (ppm)	0.068	0.072	0.088
Number of Days Standard Exceeded			
CAAQS 1-hour (>0.09 ppm)	0	0	2
CAAQS 8-hour (>0.070 ppm)	0	1	3
NAAQS 8-hour (>0.075 ppm)	0	0	2
Particulate Matter (PM_{10}) [c,d]			
National maximum 24-hour concentration ($\mu g/m^3$)	75	170	99
National second highest 24-hour concentration ($\mu g/m^3$)	56	146	79
State maximum 24-hour concentration ($\mu g/m^3$)	75	170	99
State second highest 24-hour concentration ($\mu g/m^3$)	56	146	79
National[e] annual average concentration ($\mu g/m^3$)	21.1	34.2	30.8
State[f] annual average concentration ($\mu g/m^3$)	N/A	36.6	31.2
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 $\mu g/m^3$)	0	1	0
CAAQS 24-hour (>50 $\mu g/m^3$)	3	10	8
Particulate Matter ($PM_{2.5}$)[3]			
Maximum 24-hour concentration ($\mu g/m^3$)	30.2	77.8	32.9
Second highest 24-hour concentration ($\mu g/m^3$)	25.0	45.7	29.5
Third highest 24-hour concentration ($\mu g/m^3$)	24.0	36.1	28.4
Fourth highest 24-hour concentration ($\mu g/m^3$)	22.6	32.3	26.5
National[e] annual average concentration ($\mu g/m^3$)	11.2	12.6	12.3
State[f] annual average concentration ($\mu g/m^3$)	11.2	*	12.3
Number of Days Standard Exceeded			
NAAQS 24-hour (>65 $\mu g/m^3$Pre-2007; >35 $\mu g/m^3$ Post-2007)	1	0	0

Notes:
* Data Unavailable
[a] Monitoring data from Chula Vista monitoring site.
[b] 1-Hour SO_2 standard was adopted in 2010; exceedances are based on previously applicable standards. NAAQS 24-hour standard was revoked on August 23, 2010.
[c] Measurements usually collected every six days.
[d] Monitoring data from Donovan monitoring site.
[e] National annual average based on arithmetic mean.
[f] State annual average based on geometric mean.
Source: ARB 2009d; USEPA 2009b

Sensitive receptors are typically defined as schools, hospitals, nursing homes, and day care centers. Table 5 provides a listing of sensitive receptors in the project area. It should be noted that no sensitive receptors have been identified within one mile of the SR-11 corridor.

Table 5
LISTING OF SENSITIVE RECEPTORS IN PROJECT AREA

Name	Address	City	Distance (Miles)
Schools			
Olympian High School	1925 Magdalena Avenue	Chula Vista	3.98
Wolf Canyon Elementary School	1950 Wolf Canyon Loop	Chula Vista	4.1
San Ysidro High School	5353 Airway Road	San Diego	4.46
Preschools			
Concordia Preschool and Child Care Center	1695 Discovery Falls Drive	Chula Vista	4.43
San Ysidro Head Start	249 Willow Road	San Ysidro	5.98
University/College			
Southwestern College	8100 Gigantic	San Diego	1.51
Hospital/Nursing Home Facilities			
Sharp Chula Vista Medical Center	751 Medical Center Court	Chula Vista	6.37
Parks			
Otay Lakes County Park	2270 Wueste Road	Chula Vista	3.61
Valle Lindo Park	Sequoia Street	Chula Vista	5.99

Table 6 lists the segment extents and major land uses near the freeway along each segment.

Table 6 LAND USES WITHIN SR-11 SEGMENTS		
Alternative/Segment	**Segment Description**	**Principal Land Uses Along Segment**
Two Interchange Alternative		
Segment 1	Otay Mesa East Port of Entry to Siempre Viva Drive	Commercial and Industrial
Segment 2	Siempre Viva Drive to Enrico Fermi Drive	Commercial and Industrial
Segment 3	Enrico Fermi Drive to SR-125	Commercial and Industrial
Segment 4	SR-125 to Brittania Road	Commercial and Industrial
Segment 5	Brittania Road to Heritage Lane	Commercial and Industrial
One Interchange Alternative		
Segment 1	Alta Road to Otay Mesa East Port of Entry	Commercial and Industrial
Segment 2	SR-905 Interchange to Alta Road	Commercial and Industrial
No Interchange Alternative	Entire Corridor	Commercial and Industrial

CHAPTER 5.0
FUTURE AIR QUALITY AND IMPACTS

5.1 OPERATIONAL EMISSIONS

The project is in a federal nonattainment area for O_3 and is not exempt from Transportation Conformity requirements. The Transportation Conformity Rule requires that conformity of the RTP and RTIP for nonattainment areas be determined. The Metropolitan Planning Organization for the proposed project is SANDAG.

Regional Air Quality

The CAA requires a demonstration that federal actions conform to the SIP and similar approved plans in areas that are designated as nonattainment. Transportation measures, such as the proposed project, are analyzed for conformity as part of the RTP and RTIP. The RTIP is the implementing document for the RTP. If the design concept and scope of a proposed transportation project are consistent with the project description in the applicable RTP and RTIP, and the assumptions in the regional emissions analysis for the RTP and RTIP, then the proposed project would conform to the SIP, and no adverse regional air quality impact would occur as a result of the project.

The applicable transportation plans for the proposed project are the 2030 San Diego Regional Transportation Plan: Pathways for the Future (2030 RTP), adopted on November 30, 2007 (SANDAG 2007), as well as the Final 2008 Regional Transportation Improvement Program, through Amendment 14 (2008 RTIP). The 2008 RTIP was adopted by SANDAG on July 25, 2008 (SANDAG 2008). The U.S. Department of Transportation (USDOT) made a finding of conformity for the 2008 RTIP and a conformity redetermination for the 2030 RTP on November 17, 2008 (USDOT 2008).The project is included in Table A.2, Phased Highway Projects – Revenue Constrained Plan, on page A-9 of the 2030 San Diego RTP, as SR-11 from SR-905 to Mexico. The project is also included in Table A.6, Major Capital Improvements – Reasonably Expected Revenue Scenario, under Highway System Completion (Page A-20).

The project is listed on page 274 of the original 2008 RTIP under project listings, on page 3 of Amendment 2 to the 2008 RTIP. The project is identified as CAL66, RTIP #08-02, State Route 11 From Border of Mexico east of SR-905/Otay Mesa Border

Crossing to Future SR-125/SR-905 junction (EA NO: 05631; PPNO: 0999). A difference currently exists, however, between the project description in the 2008 RTIP and the project as proposed. An amendment currently in process to the 2010 RTIP is expected to clearly identify the limits of work to reflect both proposed SR-11 and the proposed project's modifications to SR-905 between the SR-905/SR-125/SR-11 Interchange and Britannia Boulevard to accommodate the connection of SR-905 to SR-11 via proposed auxiliary lanes. In addition, the 2008 RTIP incorrectly identifies SR-11 as a freeway, although the regional emissions model correctly modeled SR-11 as a toll highway. This description will be revised in the proposed 2010 amendment, expected to have a federal conformity determination in February of 2011. Prior to final NEPA action, the 2010 RTIP, regional conformity analysis, and the project will all have consistent descriptions regarding the toll highway designation and the limits of work, and will therefore meet conformity requirements. With the inclusion of these elements in the amended 2010 RTIP, any of the project build alternatives would be consistent with the RTIP.

The proposed project is fully funded and is in the 2030 San Diego RTP, which was found to conform by SANDAG on November 30, 2007. As stated above, the U.S. Department of Transportation (USDOT) made a finding of conformity for the 2008 RTIP and a conformity redetermination for the 2030 RTP on November 17, 2008 (USDOT 2008). The project is included in the 2030 San Diego RTP on page A-9. The 2008 RTIP, as amended, was last found to conform by FHWA and FTA through Amendment 15 on November 24, 2009. It is expected that through an amendment, the design concept and scope of the proposed project will be consistent with the project description in the 2030 RTP and the 2010 RTIP and the assumptions in SANDAG's regional emissions analysis.

Local Air Quality ("Hot Spots")

Carbon Monoxide

The Transportation Conformity Rules require a statement that:

> federal projects must not cause or contribute to any new localized CO violations or increase the frequency or severity of any existing CO violations in CO nonattainment and maintenance areas.

The CO portion of the requirement applies to the proposed project because the SDAB is a federal CO maintenance area. The air quality analyses of projects included in the

RTP and RTIP do not include the analyses of local CO impacts; these must be addressed on a project level.

Procedures and guidelines for use in evaluating the potential local-level CO impacts of a project are contained in Transportation Project-Level Carbon Monoxide Protocol (the Protocol) (UCD ITS 1997). The Protocol provides a methodology for determining the level of analysis, if any, required on a project. On January 18, 2008, the USEPA approved the EMFAC2007 model for use in the State of California (USEPA 2008), as cited in Federal Register (FR) 73, Vol. 13, pp 3464-3467, which is the USEPA's "Official Release of EMFAC2007 Motor Vehicle Emission Factor Model for Use in the State of California." As of April 18, 2008, Caltrans has required the use of EMFAC2007 for all CO hot spot analyses of new projects, which require their approval. The guidelines comply with the federal CAA, federal and state conformity rules, the National Environmental Policy Act, and the California Environmental Quality Act (CEQA).

The SDAB was redesignated as a CO attainment area subsequent to the passage of the 1990 federal CAA amendments. Continued attainment has been verified with the APCD. In areas meeting those conditions, in accordance with the Protocol, only projects that are likely to worsen air quality necessitate further analysis. Projects that worsen air quality are defined as those that substantially increase the percentage of vehicles in cold start mode, defined as an increase in the number of vehicles operating in cold start mode of 2 percent or more; those that substantially increase traffic volumes, defined as an increase in volume in excess of 5 percent; and those that worsen traffic flow, defined for intersections as increasing average delay at signalized intersections operating at level of service (LOS) E or F.

The CO Protocol states that the determination of project-level CO impacts should be carried out in accordance with the Local CO Analysis flow charts shown as Figures 1 and 3 of the Protocol. Figure 1 of the Protocol applies to the evaluation of *new projects*.

The procedures of Figure 1 of the Protocol are provided for the proposed project to determine the level of analysis (if any):

3.1.1: Is the project exempt from all emissions analyses?
No. The proposed project is not exempt from all emission analyses as it does not meet the criteria for projects exempt from all emissions analyses listed in the Protocol. Go to Question 3.1.2.

3.1.2: Is project exempt from regional emissions analyses?

No. The project is not listed in Table 2 of the Protocol, and is therefore not exempt from regional emissions analyses. Go to Question 3.1.3.

3.1.3: Is project locally defined as regionally significant?

Yes. The project is defined as a regionally significant project. In accordance with the definitions contained in 40 CFR Part 93 (the federal conformity rule), a regionally significant project means a transportation project that is on a facility which serves regional transportation needs and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. Because SR-11 is included in the modeling of the area's transportation network, and will serve regional transportation needs in the Otay Mesa area, the project is regionally significant. Go to Question 3.1.4.

3.1.4: Is project in a federal attainment area?

No. The project is in a federal nonattainment area for ozone; therefore, further analysis to determine the potential for regional impacts is required. Go to Question 3.1.5.

3.1.5: Is there a currently conforming RTP and TIP?

Yes. As discussed above, the applicable transportation plans for the proposed project are the 2030 RTP, adopted on November 30, 2007 (SANDAG 2007); and the 2008 RTIP. The 2008 RTIP was adopted by SANDAG on July 25, 2008 (SANDAG 2008). The U.S. Department of Transportation (USDOT) made a finding of conformity for the 2008 RTIP and a conformity redetermination for the 2030 RTP on November 17, 2008 (USDOT 2008). Go to Question 3.1.6.

3.1.6: Is the project included in the regional emissions analysis supporting the currently conforming RTP and TIP?

Yes. The project is consistent with the assumptions in SANDAG's regional emissions analysis. Go to Question 3.1.7.

3.1.7: Has project design concept and/or scope changed significantly from that in regional analysis?

No. Project design concept and scope have not changed significantly from the assumptions in SANDAG's regional emissions analysis for the 2030 RTP and 2008 RTIP. A difference currently exists, however, between the project description in the 2008 RTIP and the project as proposed. An amendment currently in process to the 2010 RTIP is expected to clearly identify the limits of work to reflect both proposed SR-11 and the proposed project's modifications to SR-905 between the SR-905/SR-

125/SR-11 interchange and Britannia Boulevard to accommodate the connection of SR-905 to SR-11 via proposed auxiliary lanes. In addition, the 2008 RTIP incorrectly identifies SR-11 as a freeway, although the regional emissions model correctly modeled SR-11 as a toll highway. This description will be revised in the proposed 2010 amendment, expected to have a federal conformity determination in February of 2011. Prior to final NEPA action, the 2010 RTIP, regional conformity analysis, and the project will all have consistent descriptions regarding the toll highway designation and the limits of work, and will therefore meet conformity requirements. With the inclusion of these elements in the amended 2010 RTIP, any of the project build alternatives would be consistent with the RTIP.

The determination of project-level impacts should be carried out according to the Local Analysis flow chart – Figure 3 of the CO Protocol. The procedures of Section 4 in Figure 3 of the Protocol are provided for the proposed project to determine the level of effort.

Section 4, Local CO Analysis

Local CO Impact Analysis. The Protocol provides guidance for determining whether a project would have the potential to cause or contribute to a violation of an air quality standard on a localized basis. The Protocol provides for various levels for the local CO analysis to make the determination of the potential for adverse air quality impacts.

The Protocol contains a local CO analysis flow chart (Figure 3) similar to the regional analysis flow chart that is designed to assist in the evaluation of the requirements for demonstrating that the project will not cause an adverse air quality impact. The flow chart contained in the Protocol was followed to determine the analysis required for the I-5/Genesee Interchange Project. The steps in the analysis contained in the Protocol are as follows:

Level 1

Is the project in a CO nonattainment area?
No. The project is located in a CO attainment area.

Was the area redesignated as "attainment" after the 1990 Clean Air Act?
Yes. The area was redesignated as "attainment" after the 1990 Clean Air Act.

Has "continued attainment" been verified with the local Air District, if appropriate? Yes. "Continued attainment" has been verified with the APCD.

Proceed to Level 7

Level 7

Does the project worsen air quality?
Yes. The project has the potential to worsen air quality because it increases traffic volumes on the SR-11 corridor. The project also changes the location of traffic relative to receptors in the project vicinity.

Is the project suspected of resulting in higher CO concentrations than those existing within the region at the time of attainment demonstration?
Yes. The attainment demonstration for CO attainment did not consider SR-11 in their analysis of CO concentrations. Attainment has been demonstrated through the use of ambient monitoring data; the receptors at the location under study are closer to affected intersections than the air quality monitoring stations, and the roadway geometry is new because the project proposes to construct a new highway. The percentage of heavy-duty trucks for the SR-11 is also higher than the average in the SDAB for which CO attainment has been demonstrated.

Does the project involve a signalized intersection at LOS E or F?
Yes. Affected intersections within the study area operate at LOS E or F, and project-related traffic would worsen LOS to E or F at study intersections.

Proceed to Level 4

Level 4

Perform a screening analysis considering project location, nearby receptors, traffic volumes, LOS and air quality conditions for current and future years.
The screening analysis for localized CO impacts is presented below.

The potential for CO “hot spots” are evaluated for the intersections that the Traffic Impact Analysis indicated would degrade to LOS E or F conditions in the horizon year (2030), compared with the No Build Alternative. This CO hotspot analysis addresses the Two Interchange, One Interchange, No Interchange and No Build alternatives. Based on the Traffic Impact Analysis, the potential for CO “hot spots” would not be substantially altered by any of the design variations. It was also assumed that the traffic conditions for the 2035 Horizon Year analyzed in the Traffic Impact Analysis would be representative of 2030 conditions that are applied in the CO hot spot model; this results in a “worst case” analysis, because it likely assumes a higher traffic volume than would occur in 2030. The year 2030 was used to evaluate air quality impacts because the RTP addresses buildout

for transportation in the SDAB for the year 2030, but the Traffic Impact Analysis used the year 2035 as the Horizon Year for traffic impacts. To be consistent with the RTP, it is appropriate to use the year 2030 to evaluate the potential for air quality impacts.

A summary of the forecast LOS for project-affected intersections (i.e., those intersections operating at LOS E or F for any project alternative) is provided in Table 7. According to the Traffic Impact Analysis, while other intersections in the area may also operate at an LOS of E or F, they would operate more efficiently with the proposed project than without, i.e., less delay time at intersections, which would represent a decrease in the potential for harmful build-up of CO at project intersections. Appendix B contains an expanded version of the project intersection LOS analysis.

Table 7
SUMMARY OF INTERSECTION LEVEL OF SERVICE AND DELAY ANALYSIS

Intersection	Peak Hour	Current Operations	Alternative							
			No Build		Two Interchange Alternative		One Interchange Alternative		No Interchange Alternative	
			LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)	LOS	Average Delay (sec)
Opening Year (2015)										
Otay Mesa Road and La Media Road	AM	C	C	21.9	C	23.2	C	23.1	C	24.3
	PM	D	B	18.8	B	18.9	B	19.0	B	18,4
La Media Road and SR- 905 WB Off Ramp	AM	N/A	A	7.9	A	5.6	A	6.7	A	5.2
	PM	N/A	A	8.0	A	5.7	A	6.4	A	5.0
Siempre Viva Road and SR-905 NB Ramps	AM	B	B	11.9	A	9.6	B	12.4	A	9.9
	PM	B	B	13.0	B	11.6	B	13.7	A	7.7
Siempre Viva Road and Paseo de las Americas	AM	E	C	21.3	C	22.4	C	24.6	C	24.4
	PM	F	C	24.1	C	23.5	C	26.1	D	52.0
Siempre Viva Road and Enrico Fermi Drive	AM	B	B	17.8	B	19.4	B	19.4	C	20.2
	PM	B	B	16.7	B	19.0	B	19.0	B	19.5
Horizon Year (2030)										
Otay Mesa Road and La Media Road	AM	C	F	>80.0	E	74.1	E	69.0	F	>80.0
	PM	D	F	>80.0	F	>80.0	F	>80.0	F	>80.0
La Media Road and SR-905 WB Off Ramp	AM	N/A	B	15.1	B	10.2	B	10.3	C	17.9
	PM	N/A	B	13.0	B	12.7	B	12.2	E	65.9
Siempre Viva Road and SR-905 NB Ramps	AM	B	D	44.6	C	27.4	C	31.1	E	62.1
	PM	B	D	50.1	C	29.6	D	37.3	E	72.3
Siempre Viva Road and Paseo de las Americas	AM	E	D	38.6	D	38.9	D	36.0	E	68.1
	PM	F	D	53.4	D	50.8	D	38.2	F	>80.0
Siempre Viva Road and Enrico Fermi Drive	AM	B	C	34.8	C	29.3	C	29.4	D	43.3
	PM	B	C	34.5	C	28.3	C	23.3	E	62.0

N/A – Intersection does not currently exist

For purposes of this CO analysis, the receptors are located on the sidewalks at each of the intersection corners outside of the 10-meter mixing zone (10 meters beyond the width of the road), as these locations would represent the point of maximum exposure. The following assessment is based on the maximum concentration calculated from these locations for each intersection.

As required by the CO Protocol, a detailed CO Concentration Analysis was conducted using EMFAC2007 and CALINE4 for the following intersections for the year 2030 for the No Build Alternative and all build alternatives:

- Otay Mesa Road and La Media Road
- La Media Road and SR-905 WB Off Ramp
- Siempre Viva Road and SR-905 NB Ramps
- Siempre Viva Road and Paseo de las Americas
- Siempre Viva Road and Enrico Fermi Drive

CO impacts were modeled under worst-case wind angle conditions at 1.5 meters (5 feet) from the roadway edge, where public sidewalks occur along all existing roadways in the project area and CO concentrations would be greatest due to limited dispersion area. Several other assumptions were developed to perform the CO screening analysis, which include:

- Receptors were located along the intersection corners
- CO emission factors were based on maximum emissions (low vehicle speeds) to provide a worst-case analysis of potential impacts
- Cruise speeds at surface roads are 35 mph.
- Red light time is 50 percent for each roadway at all intersections.
- The ambient 1-hour CO concentration is 5.7 ppm, which is the highest concentration at the Otay Mesa Monitoring station for the past three years.
- The ambient 8-hour CO concentration is 3.51 ppm, which is the highest concentration at the Otay Mesa Monitoring station for the past three years.
- The mean January low temperature is 43.7°F with a standard deviation of 3°F (WRCC 2009).

- The minimum mixing height for winter in the project area is 100 meters (328 feet).
- The project area is at an elevation of 490 feet above mean sea level (AMSL)
- Cruise speeds to and from intersections are 1 mph.
- Atmospheric stability class set at Class 7 (worst case conditions).
- Wind direction standard deviation (sigma theta) of 5 degrees (worst case conditions, indicating that the amount of dispersion is assumed to be low such that the downwind concentration is a worst case value).
- Mixing height of 100 meters.
- Wind speed of 0.5 meters per second

The 8-hour average maximum CO concentration was calculated by applying a persistence factor of 0.7 to the predicted 1-hour average maximum CO concentrations obtained from each modeled run. The background concentrations were then added to the predicted concentrations to calculate the modeled maximum CO concentrations, which were then compared to the CAAQS and NAAQS in order to determine if the project would result in any exceedences.Based on these assumptions and the traffic volumes provided by Caltrans, the CO analysis indicated that the proposed project future traffic conditions would not result in an exceedance of the CO standards. CO concentration levels due to the proposed project are presented in Table 8 and the CALINE4 modeling input and output files for all the intersections are provided in Appendix C.

As indicated in Table 3, the federal and state 1-hour CO standards are 35 ppm and 20 ppm, respectively and the federal and state 8-hour CO standards are 9 ppm and 9.0 ppm, respectively. As shown in Table 8, the proposed project's future traffic conditions would not lead to any exceedances of these thresholds during the AM or PM peak periods at any of the analyzed intersections, under any of the project alternatives. All other intersections in the project area are predicted to experience less delay time and improved operating conditions with the project alternatives, compared with the No Build Alternative. Therefore, the proposed project would not result in or contribute to any significant local air quality impacts due to future operations.

Table 8 CO CONCENTRATIONS 2030 (1-Hour and 8-Hour Concentrations plus background, ppm)								
Intersection	No Build Alternative		Two Interchange Alternative		One Interchange Alternative		No Interchange Alternative	
	AM	PM	AM	PM	AM	PM	AM	PM
1-Hour CO Concentrations (background = 5.7 ppm)								
Otay Mesa Road and La Media Road	6.5	6.6	6.5	6.6	6.7	6.5	6.6	6.7
SR-905 La Media Road WB Off Ramp	6.4	6.5	6.4	6.5	6.4	6.5	6.5	6.6
Siempre Viva Road and SR-905 NB Ramps	6.8	6.9	6.7	6.8	6.8	6.9	6.9	7.0
Siempre Viva Road and Paseo de las Americas	6.6	6.7	6.5	6.5	6.5	6.6	6.8	6.9
Siempre Viva Road and Enrico Fermi Drive	6.3	6.3	6.2	6.3	6.2	6.3	6.5	6.5
Federal standard	35							
State standard	20							
8-Hour Concentrations[1] (background = 3.51 ppm)								
Otay Mesa Road and La Media Road	4.07	4.14	4.07	4.14	4.21	4.07	4.14	4.21
SR-905 La Media Road WB Off Ramp	4.00	4.07	4.00	4.07	4.00	4.07	4.07	4.14
Siempre Viva Road and SR-905 NB Ramps	4.28	4.35	4.21	4.28	4.28	4.35	4.35	4.42
Siempre Viva Road and Paseo de las Americas	4.14	4.21	4.07	4.07	4.07	4.14	4.28	4.35
Siempre Viva Road and Enrico Fermi Drive	3.93	3.93	3.86	3.93	3.86	3.93	4.07	4.07
Federal standard	9							
State standard	9.0							

[1] 8-hour concentrations are extrapolated based on a 0.7 persistence factor.

PM_{10} and $PM_{2.5}$

On March 10, 2006, the USEPA published a final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas. Based on that rule, the USEPA and FHWA published *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (PM Guidance) (FHWA 2006b). While the SDAB is not a federally designated $PM_{2.5}$ or PM_{10} nonattainment or maintenance area, it is designated as a

state nonattainment area for both pollutants. Thus, to meet state requirements, the proposed project has been assessed using the procedure outlined in the PM Guidance.

A hot spot analysis is defined in 40 CFR 93.101 as an estimation of likely future localized $PM_{2.5}$ or PM_{10} pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. A hot spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets CAA conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts. When a hot spot analysis is required, it is included within the project-level conformity determination that is made by the FHWA or FTA.

The PM Guidance describes qualitative hot spot analyses. Quantitative $PM_{2.5}$ and PM_{10} hot spot analyses will be required when appropriate methods and modeling guidance are available. Qualitative hot spot analyses involve more streamlined reviews of local factors such as local monitoring data near a proposed project location.

Projects of Air Quality Concern

To meet statutory requirements, the March 10, 2006, final rule requires $PM_{2.5}$ and PM_{10} hot spot analyses to be performed for "projects of air quality concern." Qualitative hot spot analyses would be done for these projects. Projects not identified as projects of air quality concern (POAQC) are considered to meet statutory requirements without any further hot spot analyses.

The PM Guidance defines POAQC as projects within a federally designated $PM_{2.5}$ or PM_{10} nonattainment or maintenance area, funded or approved by the FHWA or FTA, and one of the following types of projects:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- Projects affecting intersections that are LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F, because of increased traffic volumes from a significant number of diesel vehicles related to the project;

- New bus and rail terminals, and transfer points, that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals, and transfer points, that significantly increase the number of diesel vehicles congregating at a single location; and
- Projects in, or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Appendix A of the PM Guidance contains examples of POAQC and examples of projects that are not an air quality concern. Under the example of POAQC, a significant volume for a new highway or expressway is defined as facilities with an annual average daily traffic (AADT) volume of 125,000 or more, and a significant number of diesel vehicles (defined as 8 percent or more of the total AADT is diesel truck traffic).

Based on the Traffic Impact Analysis (VRPA 2009), no alternative would result in an AADT volume of 125,000 or more. The highest AADT for any segment of SR-11 is 62,600 on the segment from the interchange with SR-905 to the interchange with Enrico Fermi Drive for the two-interchange alternative. AADT volumes for all other segments and alternatives are lower than this value. The project would therefore be in conformance for Federal PM_{10} and $PM_{2.5}$ standards.

Table 9 shows the PM_{10} and $PM_{2.5}$ concentrations observed at the Donovan Monitoring Station from 2006 through 2008, in comparison with Federal and state standards. It should be noted that the highest concentrations were measured during the southern California fire events in 2007.

Table 9
PM_{10} AND $PM_{2.5}$ TRENDS AT THE DONOVAN MONITORING STATION

Pollutant	Averaging Time	Federal Primary Standards	California Air Quality Standards	Maximum Concentrations, µg/m^3		
				2006	2007	2008
PM_{10}	24 hours	150 µg/m^3	50 µg/m^3	75	170	99
	Annual	Revoked	20 µg/m^3	21.1	34.2	30.8
$PM_{2.5}$	24 hours	35 µg/m^3	none	30.2	77.8	32.9
	Annual	15 µg/m^3	12 µg/m^3	11.2	12.6	12.3

The proposed project is located in an attainment area for Federal PM_{10} and $PM_{2.5}$ standards, and in a nonattainment area of State PM_{10} and $PM_{2.5}$ standards. Based on screening using U.S. EPA PM Guidance, the proposed project is not a Project of Air Quality Concern because it does not meet the criteria due to relatively low total/truck AADT, truck percentage, and increase in truck volumes comparing the Build and No Build Alternatives. The proposed project is improving traffic operations by smoothing traffic flow. The proposed project is therefore in conformance for Federal PM_{10} and $PM_{2.5}$ standards and is unlikely to increase the frequency or severity of any existing exceedances regarding the non-attainment of state PM_{10} and $PM_{2.5}$ standards.

Mobile Source Air Toxics

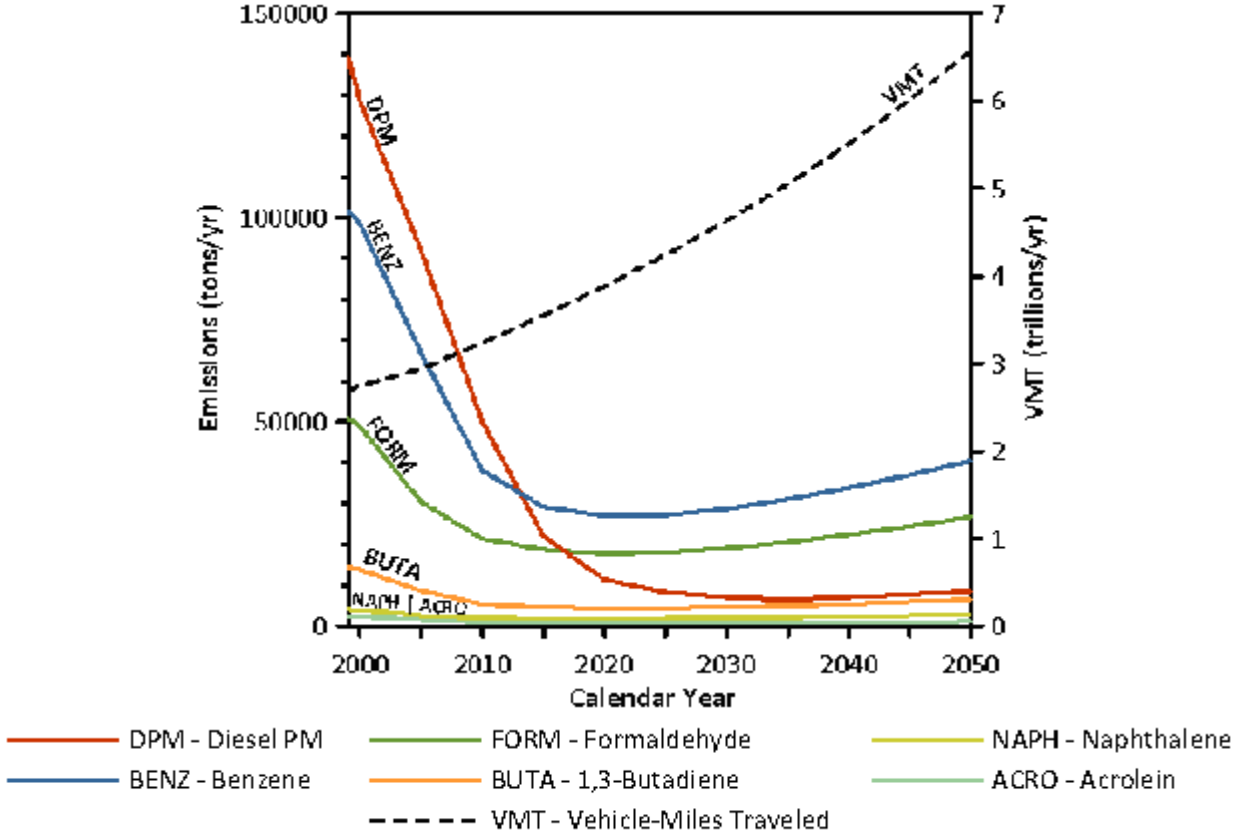
The following discussion is based on the FHWA Memorandum, Subject: INFORMATION: Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents, dated September 30, 2009 (FHWA 2009), which provides an update to the Interim Guidance on Air Toxic Analysis in NEPA Documents, dated February 3, 2006 (FHWA 2006a). The purpose of the guidance is to advise when and how to analyze MSAT in the NEPA process for highways. This guidance is interim, because MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

The USEPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The USEPA regulates 188 air toxics, known as hazardous air pollutants, under the Clean Air Act. The USEPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Rigister, Vol. 72, No. 37, Page 8430, February 20, 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://cfcpub.epa.gov/ncea/iris/index.cfm). In addition, USEPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are *acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.* While FHWA considers these the priority MSATS, the list is subject to change and may be adjusted in consideration of future USEPA rules.

The 2007 USEPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an

FHWA analysis using USEPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSATs is projected from 1999 to 2050, as shown in Figure 13.

Figure 13 MSAT Emission Trends 1999-2050 for Vehicles Operating on Roadways Using USEPA's MOBILE6.2 Model



Note:
(1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

Source: U.S. Environmental Protection Agency. MOBILE6.2 Model run 20 August 2009.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, the FHWA is expected by the public and other agencies to address MSAT impacts in environmental documents. The FHWA, USEPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions and associated with highway projects. The FHWA will continue to monitor the developing research in this emerging field.

Incomplete or Unavailable Information for Project Specific MSAT Impact Analysis

This air quality analysis includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with implementation of the proposed project. Due to these limitations, the following discussion is included in accordance with the Code of Federal Regulations, Title 40, Protection of the Environment, Section 1502.22(b) (40 CFR § 1502.22(b)) regarding incomplete or unavailable information:

Information that is Unavailable or Incomplete.

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The U.S. EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The U.S. EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (U.S. EPA, http://www.epa.gov/ncea/iris/index.html). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels

from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts - each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable. The results produced by the U.S. EPA's MOBILE6.2 model, the California EPA's Emfac2007 model, and the U.S. EPA's DraftMOVES2009 model in forecasting MSAT emissions are highly inconsistent. Indications from the development of the MOVES model are that MOBILE6.2 significantly underestimates diesel particulate matter (PM) emissions and significantly overestimates benzene emissions.

Regarding air dispersion modeling, an extensive evaluation of U.S. EPA's guideline CAL3QHC model was conducted in an NCHRP study (http://www.epa.gov/scram001/dispersion_alt.htm#hyroad), which documents poor model performance at ten sites across the country - three where intensive monitoring was conducted plus an additional seven with less intensive monitoring. The study indicates a bias of the CAL3QHC model to overestimate concentrations near highly congested intersections and underestimate concentrations near uncongested intersections. The consequence of this is a tendency to overstate the air quality benefits of mitigating congestion at intersections. Such poor model performance is less difficult to manage for

demonstrating compliance with National Ambient Air Quality Standards for relatively short time frames than it is for forecasting individual exposure over an entire lifetime, especially given that some information needed for estimating 70-year lifetime exposure is unavailable. It is particularly difficult to reliably forecast MSAT exposure near roadways, and to determine the portion of time that people are actually exposed at a specific location.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The U.S. EPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the U.S. EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires U.S. EPA to determine a "safe" or "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld U.S. EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than safe or acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be

much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

Evaluation of Project MSAT Potential

The FHWA has developed a tiered approach for analyzing MSATs in NEPA documents. Depending on the specific project circumstances, FHWA has identified three levels of analysis:

- No analysis for projects with no potential for meaningful MSAT effects, Category (1);
- Qualitative analysis for projects with low potential MSAT effects, Category (2); or
- Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects, Category (3).

Category (1) is limited to projects that:

- qualify as a categorical exclusion under 23 CFR 771.117(c);
- are exempt under the Clean Air Act conformity rule under 40 CFR §93.126; or
- have no meaningful impacts on traffic volumes or vehicle mix.

This project does not meet any of these Category (1) requirements.

For a project to be of the magnitude to have a higher potential for MSAT effects, Category (3), a project must:

- Create or significantly alter a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location; or
- Create new or add significant capacity to urban highways such as interstates, urban arterials, or urban collector-distributor routes with traffic volumes where the Annual Average Daily Traffic (AADT) volume is projected to be in the range of 140,000 to 150,000, or greater, by the design year;

And also:

- be proposed to be located in proximity to populated areas, or in rural areas, in proximity to concentrations of vulnerable populations (i.e., schools, nursing homes, hospitals).

The estimated maximum design year (2030) AADT volume for the project segment is 62,600 vehicles (VRPA 2009). The estimated maximum design year AADT volume of 62,600 vehicles would be much less than the FHWA threshold of 140,000 AADT as the minimum volume for higher potential Category (3) MSAT effects (FHWA 2006a). Although the project does not meet the AADT requirement for Category (3), the project does create a major intermodal freight facility; therefore, the project would not be included in Category (3), projects with high potential for MSAT effects.

Evaluation of Project MSAT Impacts

A qualitative analysis provides a basis for identifying and comparing the potential differences among MSAT emissions from the various alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxics Emissions Among Transportation Project Alternatives*, found at www.fhwa.dot.gov/environment/ airtoxic/msatcompare/msatemissions.htm.

The amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for the Build Alternatives is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase would be offset somewhat by lower MSAT emission rates due to increased speeds; according to USEPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases would offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

The purpose of this project is to connect the new POE to the existing and planned roadway system in the area, and provide a new CVEF for CHP inspection of trucks entering California from Mexico. The State Route 11 Project falls under Level 2, Qualitative analysis projects with low potential MSAT effects. The types of projects included under Level 2 include those projects that serve to improve operations of highway, transit or freight without adding substantial new capacity or without creating a facility that is likely to meaningfully increase emissions.

The traffic activity data in Table 10 have been utilized in performing the analyses. The traffic activity data have been supplemented by available Caltrans data inventory systems for the base year (2006) values and also by Caltrans forecast modeling of the corridor for future year values.

As described above, emission factors for five of the seven priority MSATs (acrolein, benzene, 1,3-butadiene, formaldehyde, and diesel particulate matter) have been obtained for the San Diego County Air Basin using CT-EMFAC V2.6. CT-EMFAC model runs were conducted based on the assumption in the Tier II Traffic Technical Report (VRPA 2009) that diesel truck traffic would comprise 15 percent of traffic on SR-11. CT-EMFAC V2.6 does not calculate emissions of naphthalene and POM. Based on information from the USEPA on POM, (http://www.epa.gov/ttn/atw/hlthef/polycycl.html), POM includes a broad class of compounds that includes the polycyclic aromatic hydrocarbon compounds (PAHs), of which benzo(a)pyrene is a member. The USEPA has identified seven PAHs as probable human carcinogens: benzo(a)pyrene, benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, and indeno(1,2,3-cd)pyrene. The ARB does not provide speciation profiles for POM for vehicles, nor does it provide speciation profiles for the seven PAHs identified as probable human carcinogens. However, according to the ARB, one class of compounds typically present on diesel PM is polycyclic aromatic hydrocarbons (http://www.arb.ca.gov/research/diesel/dpm_health_fs.pdf). Because the majority of both naphthalene and POM emissions would be from diesel vehicles, and because diesel vehicles are assumed to make up 15% of the vehicles traveling on SR-11, naphthalene and POM were not evaluated separately from diesel PM.

It should be noted that only those alternatives with physical improvements (i.e., Build Alternatives) have been evaluated for the purpose of this analysis, because the No

Build Alternative would not construct SR-11. Results of the analyses are tabulated in Tables 11a (2015) and 11b (2030).

The CT-EMFAC Model, Version 2.6, provided emissions by segment for the three Build Alternatives (No Interchange, One Interchange, and Two Interchanges) and development options for each alternative (no toll, toll, and the SR-125 connector option). The configurations of these alternatives were provided in Figures 3 through 10.

Table 10
TRAFFIC ACTIVITY DATA FOR SR-11 CORRIDOR

Alternative	Variation	Segment	Peak VMT			Off-Peak VMT			Daily Total VMT			Speed, mph	
			LDV	Trucks	Total	LDV	Trucks	Total	LDV	Trucks	Total	Peak	Off-Peak
2015 Traffic Activity													
Two Interchange Alternative	B, No Toll	Segment 1	5,068	894	5,963	9,239	1,630	10,869	14,307	2,525	16,832	65	65
		Segment 2	8,500	1,500	10,000	15,442	2,725	18,167	23,942	4,225	28,167	65	65
		Segment 3	7,373	1,301	8,674	12,367	2,182	14,550	19,740	3,484	23,223	65	65
	B, Toll	Segment 1	4,420	780	5,200	8,011	1,414	9,425	12,431	2,194	14,625	65	65
		Segment 2	7,413	1,308	8,722	13,391	2,363	15,754	20,804	3,671	24,475	65	65
		Segment 3	6,688	1,180	7,869	11,044	1,949	12,994	17,733	3,129	20,862	65	65
	C, Toll	Segment 1	4,427	781	5,208	8,013	1,414	9,427	12,440	2,195	14,625	65	65
		Segment 2	7,550	1,332	8,882	13,686	2,415	16,101	21,236	3,747	24,983	65	65
		Segment 3	9,414	1,661	11,076	15,719	2,774	18,493	25,134	4,435	29,569	65	65
		Segment 4	12,200	2,153	14,353	19,483	3,438	22,921	31,683	5,591	37,274	65	65
		Segment 5	19,743	3,482	23,216	30,803	5,436	36,239	50,537	8,918	59,455	65	65
	D, No Toll	Segment 1	5,057	892	5,949	9,209	1,625	10,834	14,265	2,517	16,783	65	65
		Segment 2	8,285	1,462	9,747	15,219	2,686	17,905	23,504	4,148	27,652	65	65
		Segment 3	10,135	1,788	11,923	17,138	3,024	20,162	27,272	4,813	32,085	65	65
		Segment 4	12,458	2.199	14,657	20,006	3,530	23,536	32,464	5,729	38,193	65	65
		Segment 5	19,867	3,506	23,373	31,095	5,487	36,583	50,962	8,993	59,955	65	65
	D, Toll	Segment 1	4,416	779	5,196	7,984	1,409	9,393	12,400	2,188	14,589	65	65
		Segment 2	7,281	1,285	8,566	13,187	2,327	15,514	20.468	3,612	24,080	65	65
		Segment 3	9,234	1,629	10,863	15,362	2,711	18,073	24,596	4,340	28,936	65	65
		Segment 4	12,120	2,139	14,258	19,324	3,410	22,735	31.444	5,549	36,993	65	65
		Segment 5	19,595	3,458	23.053	30,540	5,389	35,930	50,136	8,847	58,983	65	65

Table 10 (cont.)
TRAFFIC ACTIVITY DATA FOR SR-11 CORRIDOR

Alternative	Variation	Segment	Peak VMT			Off-Peak VMT			Daily Total VMT			Speed, mph	
			LDV	Trucks	Total	LDV	Trucks	Total	LDV	Trucks	Total	Peak	Off-Peak
2015 Traffic Activity (cont.)													
One Interchange Alternative	B, No Toll	Segment 1	9,111	1,608	10,719	16,574	2,925	19,499	25,685	4,533	30,218	65	65
		Segment 2	10,962	1,934	12,896	19,161	3,381	22,542	30,122	5,316	35,438	65	65
	B, Toll	Segment 1	7,947	1,402	9,350	14,375	2,537	16,912	22,323	3,939	26,262	65	65
		Segment 2	9,844	1,737	11,581	17,068	3,012	20,080	26,912	4,749	31,661	65	65
	C, Toll	Segment 1	8,046	1,420	9,465	14,576	2,572	17,149	22,622	3,992	26,614	65	65
		Segment 2	11,612	2,049	13,662	20,880	3,685	24,565	32,492	5,734	38,226	65	65
No Interchange Alternative	B, No Toll	Entire Corridor	22,010	3,884	25,894	40,113	7,079	47,192	62,123	10,963	73,086	65	65
	B, Toll	Entire Corridor	19,198	3,388	22,586	34,759	6,134	40,893	53,956	9,522	63,478	65	65

Table 10 (cont.)
TRAFFIC ACTIVITY DATA FOR SR-11 CORRIDOR

Alternative	Variation	Segment	Peak VMT			Off-Peak VMT			Daily Total VMT			Speed, mph	
			LDV	Trucks	Total	LDV	Trucks	Total	LDV	Trucks	Total	Peak	Off-Peak
2030 Traffic Activity													
Two Interchange Alternative	B, No Toll	Segment 1	8,537	1,507	10,044	15,832	2,794	18,626	24,369	4,300	28,670	65	65
		Segment 2	5,246	926	6,172	0	0	0	5,246	926	6,172	60	60
			15,148	2,673	17,821	32,910	5,808	38,718	48,058	8,481	56,539	65	65
		Segment 3	5,925	1,046	6,971	0	0	0	5,925	1,046	6,971	60	60
			14,422	2,545	16,967	30,389	5,363	35,752	44,811	7,908	52,719	65	65
	B, Toll	Segment 1	7,360	1,299	8,659	13,526	2,387	15,913	20,886	3,686	24,572	65	65
		Segment 2	18,866	3,329	22,195	29,770	5,254	35,024	48,636	8,583	57,219	65	65
		Segment 3	5,867	1,035	6,902	0	0	0	5,867	1,035	6,902	60	60
			13,715	2,420	16,135	28,719	5,068	33,787	42,434	7,488	49,922	65	65
	C, Toll	Segment 1	7,361	1,299	8,660	13,527	2,387	15,914	20,888	3,686	24,574	65	65
		Segment 2	20,248	3,573	23,821	31,956	5,639	37,595	52,203	9,212	61.416	65	65
		Segment 3	6,615	1,167	7,782	0	0	0	6,615	1,167	7,782	50	50
			1,919	339	2,258	0	0	0	1,919	339	2,258	60	60
			18,333	3,235	21,568	39,615	6,991	46,606	57,948	10,226	68,174	65	65
		Segment 4	25,415	4,485	29,901	39,669	7,000	46,670	65,085	11,486	76,570	65	65
		Segment 5	38,993	6,881	45,874	60,437	10,665	71,102	99,430	17,546	116,977	65	65
	D, No Toll	Segment 1	8,261	1,458	9,718	15,443	2,725	18,168	23,703	4,183	27,886	65	65
		Segment 2	16,349	2,885	19,234	27,027	4,769	31,796	43,376	7,655	51,031	65	65
		Segment 3	6,466	1,141	7,607	-	-	-	-	-	-	50	50
			7,026	1,240	8,266	-	-	-	-	-	-	60	60
			13,814	2,438	16,252	39,218	6,921	46,139	66,525	11,740	78,264	65	65
		Segment 4	25,135	4,436	29,571	39,060	6,893	45,953	64,195	11,328	75,523	65	65
		Segment 5	38,680	6,826	45,506	60,061	10,599	70,660	98,741	17,425	116,166	65	65
	D, Toll	Segment 1	7,116	1,256	8,371	13,186	2,327	15,514	20,302	3,583	23,885	65	65
		Segment 2	15,177	2,678	17,855	24,102	4,253	28,355	39,279	6,932	46,211	65	65
		Segment 3	6,445	1,137	7,582	37,549	6,626	44,176	64,170	11,324	75,494	50	50
			7,094	1,252	8,346	-	-	-	-	-	-	60	60
			13,081	2,308	15,390	-	-	-	-	-	-	65	65
		Segment 4	24,945	4,402	29,347	38,570	6,806	45,377	63,515	11,209	74,724	65	65
		Segment 5	38,534	6,800	45,335	59,727	10,540	70.267	98,262	17,340	115,602	65	65

Table 10 (cont.)
TRAFFIC ACTIVITY DATA FOR SR-11 CORRIDOR

Alternative	Variation	Segment	Peak VMT			Off-Peak VMT			Daily Total VMT			Speed, mph	
			LDV	Trucks	Total	LDV	Trucks	Total	LDV	Trucks	Total	Peak	Off-Peak
2030 Traffic Activity													
One Interchange Alternative	B, No Toll	Segment 1	15,073	2,660	17,733	27,980	4,937	32,917	43,053	7,597	50,650	65	65
		Segment 2	26,840	4,737	31,577	41,858	7,387	49,245	68,698	12,124	80,822	65	65
	B, Toll	Segment 1	12,979	2,290	15,269	23,925	4,222	28,147	36,904	6,512	43,416	65	65
		Segment 2	25,676	4,532	30,208	39,339	6,942	46,281	65,015	11,474	76,489	65	65
	C, Toll	Segment 1	13,030	2,300	15,330	24,035	4,241	28,276	37,065	6,541	43,606	65	65
		Segment 2	28,084	4,956	33,040	44,251	7,809	52,060	72,335	12,765	85,100	65	65
No Interchange Alternative	B, No Toll	Entire Corridor	37,045	6,537	43,582	68,668	12,118	80,786	105,713	18,655	124,368	65	65
	B, Toll	Entire Corridor	31,900	5,630	37,530	58,672	10,354	69,026	90,572	15,984	106,556	65	65

Source: Caltrans Traffic Data
VMT = vehicle miles traveled
MPH = miles per hour
NOTE: Based on data from Traffic Impact Analysis, VRPA (2009), truck percentage assumed to be 15% for all segments and alternatives.

Table 11a
2015 TOTAL PROJECT MSAT EMISSION RATES

Alternative	Variation	Segment	Emissions, grams/day				
			Diesel PM	Formaldehyde	1,3-Butadiene	Benzene	Acrolein
Two Interchange Alternative	B, No Toll	Segment 1	219.20	54.49	12.17	60.60	2.84
		Segment 2	366.81	91.18	20.36	101.41	4.76
		Segment 3	302.45	75.18	16.79	83.61	3.92
		Total	**888.46**	**220.85**	**49.32**	**245.62**	**11.52**
	B, Toll	Segment 1	190.46	47.34	10.57	52.65	2.47
		Segment 2	318.75	79.23	17.69	88.12	4.14
		Segment 3	271.70	67.53	15.08	75.11	3.53
		Total	**780.91**	**194.1**	**43.34**	**215.88**	**10.14**
	C, Toll	Segment 1	190.59	47.37	10.58	52.69	2.47
		Segment 2	325.35	80.87	18.06	89.94	4.22
		Segment 3	385.08	95.71	21.37	106.46	5.00
		Segment 4	485.42	120.66	26.94	134.20	6.30
		Segment 5	774.28	192.46	42.98	214.05	10.05
		Total	**2160.72**	**537.07**	**119.93**	**597.34**	**28.04**
	D, No Toll	Segment 1	218.56	54.33	12.10	55.23	2.84
		Segment 2	360.11	89.51	19.94	91.00	4.67
		Segment 3	417.84	103.86	23.13	105.59	5.42
		Segment 4	497.39	123.63	27.54	125.69	6.45
		Segment 5	780.81	194.08	43.23	197.32	10.13
		Total	**2274.71**	**565.41**	**125.94**	**574.83**	**29.51**
	D, Toll	Segment 1	189.99	47.22	10.52	48.01	2.47
		Segment 2	313.59	77.95	17.36	79.25	4.07
		Segment 3	376.83	93.67	20.86	95.23	4.89
		Segment 4	481.76	119.75	26.67	121.74	6.25
		Segment 5	768.14	190.93	42.53	194.11	9.97
		Total	**2130.31**	**529.52**	**117.94**	**538.34**	**27.65**
One Interchange Alternative	B, No Toll	Segment 1	393.52	97.82	21.84	108.79	5.11
		Segment 2	461.91	114.71	25.62	127.58	5.99
		Total	**855.43**	**212.53**	**47.46**	**236.37**	**11.1**
	B, Toll	Segment 1	342.01	85.01	18.98	94.55	4.44
		Segment 2	412.32	102.49	22.89	113.99	5.35
		Total	**754.33**	**187.5**	**41.87**	**208.54**	**9.79**
	C, Toll	Segment 1	346.59	86.15	19.24	95.82	4.50
		Segment 2	497.83	123.74	27.63	137.63	6.46
		Total	**844.42**	**209.89**	**46.87**	**233.45**	**10.96**
No Interchange Alternative	B, No Toll	Entire Corridor	951.80	236.58	52.83	263.13	12.35
	B, Toll	Entire Corridor	826.69	205.48	45.89	228.54	10.73

Table 11b
2030 TOTAL PROJECT MSAT EMISSION RATES

Alternative	Variation	Segment	Emissions, grams/day				
			Diesel PM	Formaldehyde	1,3-Butadiene	Benzene	Acrolein
Two Interchange Alternative	B, No Toll	Segment 1	235.27	42.63	11.35	57.27	2.72
		Segment 2	509.15	91.76	24.37	123.27	5.85
		Segment 3	482.83	86.92	23.08	116.78	5.54
		Total	**1,227.25**	**221.31**	**58.80**	**297.32**	**14.11**
	B, Toll	Segment 1	201.64	36.54	9.73	49.09	2.33
		Segment 2	469.54	85.08	22.65	114.30	5.44
		Segment 3	460.21	82.83	21.99	111.28	5.27
		Total	**1,131.39**	**204.45**	**54.37**	**274.67**	**13.04**
	C, Toll	Segment 1	201.65	36.54	9.73	49.09	2.33
		Segment 2	503.98	91.33	24.32	122.69	5.83
		Segment 3	622.67	112.38	29.71	150.99	7.13
		Segment 4	628.34	113.86	30.21	153.96	7.27
		Segment 5	959.91	173.94	46.31	233.67	11.11
		Total	**2916.55**	**528.05**	**140.28**	**710.4**	**33.67**
	D. No Toll	Segment 1	228.83	41.47	11.01	50.56	2.65
		Segment 2	418.76	75.88	20.16	92.52	4.85
		Segment 3	618.15	111.08	29.24	134.24	7.03
		Segment 4	619.75	112.30	29.83	136.93	7.17
		Segment 5	953.26	172.74	45.89	210.61	11.04
		Total	**2838.75**	**513.47**	**136.13**	**624.86**	**32.74**
	D, Toll	Segment 1	196.00	35.52	9.43	43.30	2.27
		Segment 2	379.20	68.71	18.25	83.78	4.39
		Segment 3	595.41	106.95	28.14	129.21	6.76
		Segment 4	613.19	111.11	29.52	135.47	7.10
		Segment 5	943.16	170.50	45.23	207.62	10.88
		Total	**2726.96**	**492.79**	**130.57**	**599.38**	**31.40**
One Interchange Alternative	B, No Toll	Segment 1	415.63	75.32	20.05	101.18	4.81
		Segment 2	663.22	120.18	32.00	161.45	7.68
		Total	**1,078.85**	**195.50**	**52.05**	**262.63**	**12.49**
	B, Toll	Segment 1	356.27	64.56	17.19	86.73	4.12
		Segment 2	627.67	113.74	30.28	152.80	7.27
		Total	**983.94**	**178.30**	**47.47**	**239.53**	**11.39**
	C, Toll	Segment 1	357.83	64.84	17.26	87.11	4.14
		Segment 2	698.33	126.54	33.69	170.00	8.08
		Total	**1,056.16**	**191.38**	**50.95**	**257.11**	**12.22**
No Interchange Alternative	B, No Toll	Entire Corridor	1,020.56	184.93	49.24	248.44	11.81
	B, Toll	Entire Corridor	874.40	158.45	42.19	212.86	10.12

DISCUSSION OF RESULTS

Because existing conditions and the No Build Alternative do not involve construction of SR-11, it is not possible to compare existing MSAT emissions or MSAT emissions for the No Build Alternative with MSAT emissions with the proposed Build Alternatives. Differences in MSAT emissions among the proposed alternatives are noted in Tables 11a and 11b.

According to the results of analysis shown in Tables 11a and 11b, differences in MSAT emissions between alternatives would not be substantial. For the year 2015, the Two Interchange Alternative, Variation D, No Toll, would have the highest MSAT emissions among the alternatives. The lowest MSAT emissions would result from the One Interchange Alternative, Variation B, Toll.

For the year 2030, the Two Interchange Alternative, Variation C, Toll, would have the highest MSAT emissions among the alternatives. The lowest MSAT emissions would result from the No Interchange Alternative, Variation B, Toll.

Table 12 provides a comparison of the MSAT emissions from 2015 through 2030 on a per-VMT basis. As shown in the table, the analysis indicates that a significant decrease in MSAT emissions can be expected for the proposed alternatives from the year 2015 through the year 2030 on a per VMT basis. This decrease is prevalent throughout the highest-priority MSATs and the analyzed alternatives, regardless of the difference in mainline configurations as depicted in the figures. This decrease is also consistent with the aforementioned EPA's study that projects a significant reduction in on-highway emissions of benzene, formaldehyde, and 1,3-butadiene between 2000 and 2020.

According to the result of analysis shown in Table 12, reductions in existing MSAT emission rates per VMT expected between 2015 and 2030 are: between 24 and 38 percent of DPM, 33 and 46 percent of benzene, 35 and 46 percent of 1,3-butadiene, 33 and 45 percent of acrolein, and 33 and 55 percent of formaldehyde, depending on the implementation of Build Alternatives.

Table 12
COMPARISON IN TOTAL MSAT EMISSIONS
2015 TO 2030

Alternative	Variation	Segment	Emissions, grams/day				
			Diesel PM	Formaldehyde	1,3-Butadiene	Benzene	Acrolein
Two Interchange Alternative	B, No Toll	2015 Total	888.46	220.85	49.32	245.62	11.52
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,227.25	221.31	58.8	297.32	14.11
		2030 Per VMT	0.00812	0.00118	0.00039	0.00197	0.00009
		% Reduction per VMT	37.62	54.75	46.16	45.34	44.69
	B, Toll	2015 Total	780.91	194.1	43.34	215.88	10.14
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,131.39	204.45	54.37	274.67	13.04
		2030 Per VMT	0.00816	0.00147	0.00039	0.00198	0.00009
		% Reduction per VMT	37.33	54.44	45.73	44.96	44.37
	C, Toll	2015 Total	2160.72	537.07	119.93	597.34	28.04
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	2916.55	528.05	140.28	710.4	33.67
		2030 Per VMT	0.00984	0.00178	0.00047	0.00240	0.00011
		% Reduction per VMT	24.45	44.97	34.53	33.43	32.79
	D, No Toll	2015 Total	2274.71	565.41	125.94	574.83	29.51
		2015 Per VMT	0.01302	0.00324	0.00072	0.00329	0.00017
		2030 Total	2838.75	513.47	136.13	624.86	32.74
		2030 Per VMT	0.00814	0.00147	0.00039	0.00179	0.000094
		% Reduction per VMT	37.52	54.53	45.88	45.58	44.45
	D, Toll	2015 Total	2130.31	529.52	117.94	538.34	27.65
		2015 Per VMT	0.01302	0.00324	0.00072	0.00329	0.00017
		2030 Total	2726.96	492.79	130.57	599.38	31.4
		2030 Per VMT	0.00812	0.00147	0.00039	0.00178	0.000094
		% Reduction per VMT	37.66	54.68	46.09	45.78	44.70

Table 12 (cont.)
COMPARISON IN TOTAL MSAT EMISSIONS
2015 TO 2030

Alternative	Variation	Segment	Emissions, grams/day				
			Diesel PM	Formaldehyde	1,3-Butadiene	Benzene	Acrolein
One Interchange Alternative	B, No Toll	2015 Total	855.43	212.53	47.46	236.37	11.1
		2015 Per VMT	0.01303	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,078.85	195.5	52.05	262.63	12.49
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00010
		% Reduction per VMT	37.02	54.06	45.23	44.51	43.81
	B, Toll	2015 Total	754.33	187.5	41.87	208.54	9.79
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	983.94	178.3	47.47	239.53	11.39
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.23	44.51	43.80
	C, Toll	2015 Total	844.42	209.89	46.87	233.45	10.96
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,056.16	191.38	50.95	257.11	12.22
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.24	44.52	43.83
No Interchange Alternative	B, No Toll	2015 Total	951.8	236.58	52.83	263.13	12.35
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	1,020.56	184.93	49.24	248.44	11.81
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.23	44.51	43.80
	B, Toll	2015 Total	826.69	205.48	45.89	228.54	10.73
		2015 Per VMT	0.01302	0.00324	0.00072	0.00360	0.00017
		2030 Total	874.4	158.45	42.19	212.86	10.12
		2030 Per VMT	0.00821	0.00149	0.00040	0.00200	0.00009
		% Reduction per VMT	36.99	54.06	45.23	44.51	43.81

The Build Alternatives substantially relieve congestion in the Otay Mesa region over the No Build Alternative, which would have the effect of reducing MSAT emissions overall in the region. There are sensitive land uses (commercial and industrial) within 500 feet of the nearest lane affected by such emissions. Therefore, reduced emissions would benefit those land uses adjacent to the freeway.

Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of USEPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the USEPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

5.2 CONSTRUCTION IMPACTS

Regional Emissions

The principal criteria pollutants emitted during construction would be PM_{10} and $PM_{2.5}$. The source of the pollutants would be fugitive[3] dust created during clearing, grubbing, excavation, and grading; demolition of structures and pavement; vehicle travel on paved and unpaved roads; and material blown from unprotected graded areas, stockpiles, and haul trucks. Generally, the distance that particles drift from their source depends on their size, emission height, and wind speed. About 50 percent of fugitive dust is made up of relatively large particles, greater than 100 microns in diameter. These particles are responsible for the reduced visibility often associated with construction, as well as the nuisance caused by the deposition of dust on vehicles, and in exterior areas used by people for recreation and business. Given their relatively large size, these particles tend to settle within 20 to 30 feet of their source. Small particles, less than 100 microns in diameter, can travel nearly 330 feet before settling to the ground, depending on wind speed. These smaller particles also contribute to visibility and nuisance impacts, and include PM_{10} and $PM_{2.5}$, which are potential health hazards.

[2] "Fugitive" is a term used in air quality analysis to denote emission sources that are not confined to stacks, vents, or similar paths.

An additional important source of pollutants during construction would be the engine exhaust from construction equipment. The principal pollutants of concern would be NO_X and ROG emissions that would contribute to the formation of O_3, which is a regional nonattainment pollutant.

Federal conformity regulations require analysis of construction impacts for projects when construction activities will last for more than 5 years. The proposed project would be completed in 2015 and last less than 5 years; therefore, no quantitative estimates of regional construction emissions have been made. However, it is recommended that specific measures to control dust and particulates be incorporated into project specifications. These measures are identified in Chapter 6.0.

Local Emissions

According to 40 CFR § 93.123 (5), CO, PM_{10}, and $PM_{2.5}$ hot spot analyses are not required for construction-related activities that create a temporary increase in air emissions. Temporary is defined as increases that only occur during a construction phase and last 5 years or less at any individual site. The construction phase of the proposed project would last for approximately 2 years and would be considered temporary. Thus, no local hot spot is anticipated and a hot spot analysis is not required for construction of the proposed project.

Diesel particulate emissions may be a potential concern, as described in Section 2.8 of this report. While there is no formal guidance for impact analysis, potential adverse impacts would be increased if construction equipment and truck staging areas were to be located near schools, active recreation areas, or areas of higher population density. The nearest school to the project, San Ysidro High School, is approximately one mile from the State Route 11 alignment. Thus, a measure to reduce this potential impact has been identified in Chapter 6.0.

5.3 CUMULATIVE IMPACTS

The analysis of project impacts to regional air quality, as performed by SANDAG and the APCD in conjunction with the RTP and RTIP process, is a cumulative analysis. The proposed project would conform to the assumptions in the air quality conformity analyses for the 2030 RTP (SANDAG 2007) and 2008 RTIP (SANDAG 2008), which

are long-range planning documents that include roadway projects throughout the region. Therefore, the project would not result in a cumulative impact to air quality.

CHAPTER 6.0
POLLUTION ABATEMENT MEASURES

It is recommended that the following measures be incorporated into the project to minimize the emission of fugitive dust, PM_{10}, and $PM_{2.5}$:

- Minimize land disturbance.
- Use watering trucks to minimize dust; watering should be sufficient to confine dust plumes to the project work areas.
- Suspend grading and earth moving when wind gusts exceed 25 mph unless the soil is wet enough to prevent dust plumes.
- Stabilize the surface of inactive stockpiles.
- Limit vehicular paths on unpaved surfaces and stabilize any temporary roads.
- Minimize unnecessary vehicular and machinery activities.
- Street sweeping shall be conducted where sediment is tracked from the job site onto paved roads, and shall be performed immediately after soil disturbing activities occur or offsite tracking of material is observed.
- Revegetate disturbed land, including vehicular paths created during construction to avoid future off-road vehicular activities.

It is recommended that the following measures be incorporated into the project to minimize exposure to diesel particulate emissions.

- Locate construction equipment and truck staging and maintenance areas as far as feasible and nominally downwind of schools, active recreation areas, and other areas of high population density.

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CHAPTER 7.0
REFERENCES

California Air Resources Board (ARB). 1998. Final Carbon Monoxide Redesignation and Maintenance Plan for Ten Federal Planning Areas.

California Air Resources Board. 2002. California Air Resources Board, Board Meeting Summary. http://www.arb.ca.gov/research/aaqs/std-rs/bdsum620/bdsum620.htm. June 20.

California Air Resources Board. 2009a. Area Designations, http://www.arb.ca.gov/desig/desig.htm. November.

California Air Resources Board. 2009b. San Diego Air Quality Management Plans. http://www.arb.ca.gov/planning/sip/planarea/sansip.htm. November.

California Air Resources Board. 2009c. Ambient Air Quality Standards. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. November

California Air Resources Board. 2009d. Aerometric Data Analysis and Measurement Database. http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start. November.

California Department of Conservation. 2000. *A General Location Guide for Ultramafic Rocks in California-Areas Likely to Contain Naturally Occurring Asbestos*.

California Department of Transportation. 2007. Standard Environmental Reference. Chapter 11 – Air Quality. October.

Environmental Law Institute. 2005. NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles. 35 ELR 10273

Federal Highway Administration. 2006a. *Interim Guidance on Air Toxic Analysis in NEPA Documents*. February 3.

Federal Highway Administration. 2006b. *Transportation Conformity Guidance for Qualitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas* (PM Guidance).

Federal Highway Administration. 2009. *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents.* September 30.

San Diego Air Pollution Control District. 2005. Draft Fugitive Dust Regulations.

San Diego Air Pollution Control District. 2009. 2008 Annual Report.

San Diego Association of Governments. 2006. *State Route 11 Toll Road and East Otay Mesa Port of Entry Financial Feasibility Study.*

San Diego Association of Governments. 2007. 2030 Regional Transportation Plan: Pathways for the Future, 2007 Update. Final. November.

San Diego Association of Governments. 2008. 2008 Regional Transportation Improvement Program.

Sierra Club. 2004. Highway Health Hazards.

South Coast Air Quality Management District. 2000. Multiple Air Toxic Exposure Study-II.

United States Customs and Border Protection (CBP), General Services Administration (GSA), and Interagency Security Committee (ISC). 2006. Land Port of Entry Design Guide.

CBP, GSA, and ISC. 2007. Security and Information Technology Supplemental Guide.

United States Department of Defense (DoD). 2003. *DoD Minimum Antiterrorism Standards for Buildings.*

United States General Services Administration (GSA). 2008. Otay Mesa East POE Phase I

United States Environmental Protection Agency (USEPA). 2004. Areas Designated Nonattainment for the Fine Particle National Air Quality Standards. http://www.epa.gov/pmdesignations/1997standards/documents/final/factsheet.htm. December 17.

USEPA. 2006. *Transportation Conformity Guidance for Qualitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*. March.

USEPA. 2008. Federal Register Notice, FR73, Vol. 13, pp 3464-3467. January 18.

USEPA. 2009a. The Green Book Nonattainment Areas for Criteria Pollutants. http://www.epa.gov/air/oaqps/greenbk/. November.

USEPA. 2009b. Monitor Values Report – Criteria Air Pollutants. http://iaspub.epa.gov/airsdata/adaqs.monvals?geotype=co&geocode=06073&geoinfo=co%7E06073%7ESan+Diego+Co%2C+California&pol=CO+NO2+O3&year=2008+2007+2006&fld=monid&fld=siteid&fld=address&fld=city&fld=county&fld=stabbr&fld=regn&rpp=25. November.

University of California Davis. 1997. Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol.

University of California Davis. 2007. CT-EMFAC: A Computer Model to Estimate Transportation Project Emissions. December 10.

VRPA. 2009. Tier II Traffic Technical Report, State Route 11/Otay Mesa East Land Port of Entry.

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APPENDIX A

RTIP PROJECT LISTING

Table A.2–Phased Highway Projects - Revenue Constrained Plan[1]

YEAR BUILT BY	FREEWAY	FROM	TO	EXISTING	IMPROVEMENT	($ MILLIONS – 2006 DOLLARS)	
						COST	CUMULATIVE COST
2009	I-5	I-805	SR 56	10F	14F	$186	$186
2009	I-15	SR 56	Centre City Parkway	8F	10F + 4ML/MB	$427	$613
2009	SR 125	SR 905	San Miguel Road	--	4T	$640	$1,253
2009	SR 125	San Miguel Road	SR 54	--	4F	$160	$1,413
2010	SR 52	SR 125	SR 67	--	4F	$538	$1,951
2010	SR 75/282	Glorietta Boulevard	Alameda Boulevard	6C	6C+2TU (PE only)	$20	$1,971
2014	I-5	La Jolla Village Drive	I-5/I-805 Merge	8F/14F	8F/14F + 2HOV	$160	$2,131
2014	I-5	I-5/I-805 Merge	Cannon Road	8F/14F	8F/14F + 4ML	$1,440	$3,571
2014	I-5/I-805	North to North & South to South		--	HOV Connectors	$170	$3,741
2014	I-5/I-805	Port of Entry – Mexico		--	Inspection Facility	$30	$3,771
2014	SR 11	SR 905	Mexico	--	4T	$300	$4,071
2014	I-15	SR 163	SR 56	8F + 2ML (R)	10F + 4ML/MB	$414	$4,485
2014	I-15	Centre City Parkway	SR 78	8F	8F + 4ML	$210	$4,695
2014	SR 52	I-805	SR 125	4F/6F	6F + 2ML (R)	$330	$5,025
2014	SR 76	Melrose Drive	I-15	2C	4C	$500	$5,525
2014	SR 241	Orange County	I-5	--	4T	$402	$5,927
2014	I-805	Palomar Street	SR 94	8F	8F + 2HOV	$584	$6,511
2014	I-805/SR 94	North to West & East to South		--	HOV Connectors	$95	$6,606
2014	I-805	Carroll Canyon Road	I-5	8F	8F + 2HOV	$218	$6,824
2014	SR 905	I-805	Mexico	--	6F	$595	$7,419

2006 Regional Transportation Improvement Program - Non Carryover Projects
San Diego Region (in $000s)

Caltrans

MPO ID: CAL54 Capacity Status: NCI COMPLETED RTIP #: 06-16
TITLE: TMS on I-5, I-805 and SR-94 (Radar Scanners) Exempt Category: Other - Traffic signal synchronization projects
DESCRIPTION: From I-5,I-805 to SR94 - Install radar scanners
EA NO: 08080K PPNO: 0800 EST TOTAL COST: $3,649

	TOTAL	PRIOR	06/07	07/08	08/09	09/10	10/11	PE	RW	CON
STIP-RIP NHS	$397	$397						$397		
STIP-RIP State Cash	$3,252	$52	$3,200					$52		$3,200
TOTAL	**$3,649**	**$449**	**$3,200**					**$449**		**$3,200**

MPO ID: CAL66 Capacity Status: CI DELAYED - PENDING STATE LEGISLATION RTIP #: 06-16
TITLE: State Route 11
DESCRIPTION: From Border of Mexico east of SR 905/Otay Mesa Border Crossing to Future SR 125/905 junction - study for future construction of 4-lane freeway and truck bypass road
EA NO: 05630K PPNO: 1000 EST TOTAL COST: $13,801
RTP PAGE NO: A-6; B-5
EARMARK NO: CA393/740

	TOTAL	PRIOR	06/07	07/08	08/09	09/10	10/11	PE	RW	CON
HPP	$800		$800					$800		
STIP-IIP NHS	$6,882	$6,882						$6,882		
STIP-IIP Prior State Cash	$5,200		$200	$5,000				$5,200		
STIP-IIP State Cash	$919	$919						$919		
TOTAL	**$13,801**	**$7,801**	**$1,000**	**$5,000**				**$13,801**		

MPO ID: CAL74 Capacity Status: NCI COMPLETED RTIP #: 06-16
TITLE: Transportation Museum Exempt Category: Other - Transportation enhancement activities
DESCRIPTION: On Taylor Street in Old Town - interior rehab of existing Caltrans builidng
EA NO: 26480 PPNO: 0990 EST TOTAL COST: $950

	TOTAL	PRIOR	06/07	07/08	08/09	09/10	10/11	PE	RW	CON
STIP-IIP STP TE	$841	$164		$677				$164		$677
STIP-IIP State Cash	$109	$21		$88				$21		$88
TOTAL	**$950**	**$185**		**$765**				**$185**		**$765**

MPO ID: CAL78 Capacity Status: NCI COMPLETED - SPLIT INTO CAL78B AND CAL78C RTIP #: 06-16
TITLE: I-805 HOV/Managed Lanes - Split into CAL 78B/C Exempt Category: Other - Engineering studies
DESCRIPTION: From 905 to 5 - From SR 905 to I-5 - preliminary engineering for future construction of managed lanes
SANDAG ID: 1280501/2/3 EST TOTAL COST: $16,518

	TOTAL	PRIOR	06/07	07/08	08/09	09/10	10/11	PE	RW	CON
RSTP	$5,889		$5,889					$5,889		
TransNet - MC	$10,629	$42	$4,891	$5,696				$10,629		
TOTAL	**$16,518**	**$42**	**$10,780**	**$5,696**				**$16,518**		

APPENDIX B

INTERSECTION LOS DATA

Intersection LOS data were provided by VRPA in the attached tables from VRPA's Tier II Traffic Technical Report, State Route 11/Otay Mesa East Land Port of Entry.

Table 5-15
Horizon Year (2035)
Intersection Capacity Analysis
No Interchange Alternative

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Average Delay (sec)	LOS	Average Delay (sec)
Lone Star Rd and La Media Rd	C	25.8	C	21.5
Lone Star Rd and SR-125 SB Ramps	B	12.9	C	23.8
Lone Star Rd and SR-125 NB Ramps	B	12.4	B	13.2
Lone Star Rd and Piper Ranch Rd	C	29.4	B	11.6
Lone Star Rd and Sun Road Blvd	C	22.2	C	26.2
Lone Star Rd and Zinser Rd	B	19.7	B	15.3
Lone Star Rd and Vann Center Blvd	B	19.9	B	17.2
Lone Star Rd and Enrico Fermi Dr	B	16.7	B	16.8
Lone Star Rd and Alta Rd	C	21.9	C	26.7
Otay Mesa Rd and Lone Star Rd	B	10.8	B	11.0
Siempre Viva Rd and Lone Stare Rd	B	11.8	B	13.7
Zinser Rd and Piper Ranch Rd	B	14.4	B	12.6
Zinser Rd and Sun Road Blvd	C	25.7	C	31.0
Otay Mesa Rd and Britannia Blvd	B	19.5	C	21.9
Otay Mesa Rd and La Media Rd	F	>80.0	F	>80.0
Otay Mesa Rd and Piper Ranch Rd	C	39.3	D	36.9
Otay Mesa Rd and SR-125 SB Off Ramp	B	11.0	B	11.8
Otay Mesa Rd and SR-125 NB On Ramp	B	12.3	A	2.4
Otay Mesa Rd and Harvest Rd	C	21.5	B	17.9
Otay Mesa Rd and Sanyo Ave	C	21.4	C	28.2
Otay Mesa Rd and Vann Center Blvd	A	8.3	B	10.7
Otay Mesa Rd and Enrico Fermi Rd	C	23.2	D	37.3
Otay Mesa Rd and Alta Rd	C	21.6	C	21.4
SR 905 Britannia Blvd WB Ramps	B	12.2	B	13.6
SR 905 Britannia Blvd EB Ramps	B	11.8	B	15.8
SR 905 La Media Rd WB Off Ramp	C	17.9	E	65.9
SR 905 La Media Rd EB Ramps	B	30.3	C	24.0
Airway Rd and Britannia Blvd	C	28.2	C	24.5
Airway Rd and La Media Rd	D	43.5	D	41.7
Airway Rd and Sanyo Ave	C	27.0	D	35.2
Airway Rd and Paseo De Las Americas	B	16.4	B	19.4
Airway Rd and Enrico Fermi Dr	C	29.2	D	35.4
Airway Rd and Alta Rd	C	20.8	B	18.5
Siempre Viva Rd and Britannia Blvd	C	26.5	C	31.9
Siempre Viva Rd and La Media Rd	C	23.3	C	24.6
Siempre Viva Rd and Otay Center Dr	D	36.3	D	40.8
Siempre Viva Rd and SR-905 SB Ramps	B	12.0	D	42.3
Siempre Viva Rd and SR-905 NB Ramps	E	62.1	E	72.3
Siempre Viva Rd and Paseo De Las Americas	E	68.1	F	>80.0
Siempre Viva Rd and Enrico Fermi Dr	D	43.3	E	62.0
Siempre Viva Rd and Airway Rd	C	26.4	C	26.1
Siempre Viva Rd and Alta Rd	B	16.2	C	23.9

Notes:

All intersections will be signalized for all 2035 Conditions

">80.0" – Exceeds 80 seconds

Table 5-11
Horizon Year (2035)
Intersection Capacity Analysis
One Interchange Alternative

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Average Delay (sec)	LOS	Average Delay (sec)
Lone Star Rd and La Media Rd	C	25.3	B	15.4
Lone Star Rd and SR-125 SB Ramps	B	15.2	C	23.2
Lone Star Rd and SR-125 NB Ramps	B	15.7	B	13.0
Lone Star Rd and Piper Ranch Rd	B	19.7	C	23.6
Lone Star Rd and Sun Road Blvd	A	8.7	B	15.5
Lone Star Rd and Zinser Rd	B	13.4	D	41.7
Lone Star Rd and Vann Center Blvd	B	10.1	B	10.7
Lone Star Rd and Enrico Fermi Dr	B	13.7	B	13.0
Lone Star Rd and Alta Rd	C	23.4	C	28.4
Otay Mesa Rd and Lone Star Rd	B	12.7	C	21.6
Lone Star Rd and Siempre Viva Rd	B	11.7	B	13.6
Zinser Rd and Piper Ranch Rd	B	14.9	B	13.5
Zinser Rd and Sun Road Blvd	C	25.0	C	33.4
Otay Mesa Rd and Britannia Blvd	B	18.1	B	15.8
Otay Mesa Rd and La Media Rd	E	69.0	F	>80.0
Otay Mesa Rd and Piper Ranch Rd	C	31.5	C	26.5
Otay Mesa Rd and SR-125 SB Off Ramp	A	9.2	A	8.2
Otay Mesa Rd and SR-125 NB On Ramp	A	2.3	A	4.9
Otay Mesa Rd and Harvest Rd	B	19.9	C	20.4
Otay Mesa Rd and Sanyo Ave	C	23.7	C	23.4
Otay Mesa Rd and Vann Center Blvd	A	9.7	B	14.8
Otay Mesa Rd and Enrico Fermi Rd	C	23.1	C	29.4
Otay Mesa Rd and Alta Rd	D	53.1	D	38.0
SR 905 WB Ramps and Britannia Blvd	B	10.4	B	16.2
SR 905 EB Ramps and Britannia Blvd	B	13.2	B	17.7
SR 905 WB Off Ramp and La Media Rd	B	10.3	B	12.2
SR 905 EB Ramps and La Media Rd	B	13.6	B	16.1
SR 11 WB Ramps and Alta Rd	B	18.3	C	24.7
SR 11 EB Ramps and Alta Rd	B	15.7	C	20.9
Airway Rd and Britannia Blvd	C	32.9	C	29.0
Airway Rd and La Media Rd	D	42.4	D	42.8
Airway Rd and Sanyo Ave	C	27.7	C	25.3
Airway Rd and Paseo De Las Americas	B	18.1	B	16.7
Airway Rd and Enrico Fermi Dr	C	25.6	C	30.8
Airway Rd and Alta Rd	C	29.6	C	30.3
Siempre Viva Rd and Britannia Blvd	C	22.8	C	23.5
Siempre Viva Rd and La Media Rd	C	21.5	C	23.1
Siempre Viva Rd and Otay Center Dr	C	28.9	C	29.9
Siempre Viva Rd and SR-905 SB Ramps	B	13.5	B	14.1
Siempre Viva Rd and SR-905 NB Ramps	C	31.1	D	37.3
Siempre Viva Rd and Paseo De Las Americas	D	36.0	D	38.2
Siempre Viva Rd and Enrico Fermi Dr	C	29.4	C	23.3
Siempre Viva Rd and Airway Rd	B	17.3	C	21.0
Siempre Viva Rd and Alta Rd	C	31.6	D	36.9

Notes:

All intersections will be signalized for all 2035 Conditions

">80.0" – Exceeds 80 seconds

Table 5-7
Horizon Year (2035)
Intersection Capacity Analysis
Two Interchange Alternative

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Average Delay (sec)	LOS	Average Delay (sec)
Lone Star Rd and La Media Rd	C	23.4	C	21.0
Lone Star Rd and SR-125 SB Ramps	C	21.2	C	23.9
Lone Star Rd and SR-125 NB Ramps	B	11.8	B	10.5
Lone Star Rd and Piper Ranch Rd	B	16.9	B	10.9
Lone Star Rd and Sun Road Blvd	A	9.1	B	19.0
Lone Star Rd and Zinser Rd	B	13.8	B	15.4
Lone Star Rd and Vann Center Blvd	A	9.7	B	12.3
Lone Star Rd and Enrico Fermi Dr	B	15.0	B	10.5
Lone Star Rd and Alta Rd	C	21.8	C	28.1
Otay Mesa Rd and Lone Star Rd	A	8.7	A	9.2
Siempre Viva Rd and Lone Star Rd	A	9.9	B	15.4
Zinser Rd and Piper Ranch Rd	B	12.8	B	13.6
Zinser Rd and Sun Road Blvd	C	23.5	C	28.1
Otay Mesa Rd and Britannia Blvd	B	17.6	C	22.0
Otay Mesa Rd and La Media Rd	E	74.1	F	>80.0
Otay Mesa Rd and Piper Ranch Rd	C	27.3	C	25.9
Otay Mesa Rd and SR-125 SB Off Ramp	A	9.3	A	8.7
Otay Mesa Rd and SR-125 NB On Ramp	A	2.5	A	3.9
Otay Mesa Rd and Harvest Rd	B	19.4	B	17.7
Otay Mesa Rd and Sanyo Ave	C	22.9	C	25.7
Otay Mesa Rd and Vann Center Blvd	A	7.7	A	8.0
Otay Mesa Rd and Enrico Fermi Rd	C	25.4	F	>80.0
Otay Mesa Rd and Alta Rd	C	21.2	C	21.9
SR 905 WB Ramps and Britannia Blvd	A	8.5	B	12.8
SR 905 EB Ramps and Britannia Blvd	B	14.5	B	15.0
SR 905 WB Off Ramp and La Media Rd	B	10.2	B	12.7
SR 905 EB Ramps and La Media Rd	B	15.1	B	18.4
SR 11 WB Ramps and Enrico Fermi Dr	B	19.8	C	26.6
SR 11 EB Ramps and Enrico Fermi Dr	C	21.8	C	23.1
SR 11 WB On Ramp and Siempre Viva Rd	A	5.4	A	4.4
SR 11 EB Off Ramp and Siempre Viva Rd	A	8.0	B	10.4
Airway Rd and Britannia Blvd	C	26.5	C	21.6
Airway Rd and La Media Rd	D	40.3	D	39.2
Airway Rd and Sanyo Ave	C	25.4	C	25.1
Airway Rd and Paseo De Las Americas	B	15.0	B	14.4
Airway Rd and Enrico Fermi Dr	C	23.4	C	34.1
Airway Rd and Alta Rd	B	19.8	C	21.6
Siempre Viva Rd and Britannia Blvd	C	22.8	C	24.5
Siempre Viva Rd and La Media Rd	C	21.1	C	24.1
Siempre Viva Rd and Otay Center Dr	C	26.5	C	31.6
Siempre Viva Rd and SR-905 SB Ramps	A	8.2	A	9.5
Siempre Viva Rd and SR-905 NB Ramps	C	27.4	C	29.6
Siempre Viva Rd and Paseo De Las Americas	D	38.9	D	50.8
Siempre Viva Rd and Enrico Fermi Dr	C	29.3	C	28.3
Siempre Viva Rd and Airway Rd	C	21.4	C	21.9
Siempre Viva Rd and Alta Rd	C	30.2	B	19.3

Notes:

All intersections will be signalized for all 2035 Conditions

">80.0" – Exceeds 80 seconds

APPENDIX C

CO ANALYSIS DATA

CALINE4 Modeling – La Media and WB SR-905 Interchange
No Build – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 NoBuildam
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 905 WBLA	150	-4	0	-4	AG	214	2.1	.0	10.0
B. 905 WBRA	150	4	0	4	AG	319	2.1	.0	10.0
C. 905 ON 1	0	-15	120	-15	AG	383	2.1	.0	10.0
D. 905 ON 2	120	-15	155	-70	AG	383	2.1	.0	10.0
E. 905 ON 3	155	-70	130	-125	AG	383	2.1	.0	10.0
F. 905 ONA	-150	-4	0	-4	AG	50	2.1	.0	10.0
G. 905 OND	0	4	-150	4	AG	60	2.1	.0	10.0
H. LM NBTA	0	-150	0	0	AG	1536	2.1	.0	10.0
I. LM NBRA	13	-150	13	0	AG	363	2.1	.0	10.0
J. LM NBD	6	0	6	150	AG	1850	2.1	.0	10.0
K. LM SBLA	0	150	0	0	AG	0	2.1	.0	10.0
L. LM SBTA	-7	150	-7	0	AG	2238	2.1	.0	10.0
M. LM SBD	-7	0	-7	-150	AG	2440	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 NoBuildam
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	192.	.6	.0	.0	.0	.0	.0	.0	.0	.2
2. Recpt 2	197.	.6	.0	.0	.0	.0	.0	.0	.0	.2
3. Recpt 3	192.	.7	.0	.0	.0	.0	.0	.0	.0	.2
4. Recpt 4	201.	.4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	207.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	168.	.6	.0	.0	.0	.0	.0	.0	.0	.2
7. Recpt 7	28.	.6	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	20.	.7	.0	.0	.0	.0	.0	.0	.0	.1
9. Recpt 9	168.	.7	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	170.	.7	.0	.0	.0	.0	.0	.0	.0	.2
11. Recpt 11	171.	.7	.0	.0	.0	.0	.0	.0	.0	.2
12. Recpt 12	90.	.4	.0	.0	.1	.0	.0	.0	.0	.0
13. Recpt 13	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	160.	.3	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	101.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 NoBuildam
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.0	.0	.0	.0	.2
2. Recpt 2	.0	.2	.0	.0	.2
3. Recpt 3	.0	.2	.0	.0	.2
4. Recpt 4	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.1
6. Recpt 6	.0	.0	.0	.0	.4
7. Recpt 7	.0	.1	.0	.0	.4
8. Recpt 8	.0	.1	.0	.0	.4
9. Recpt 9	.0	.0	.0	.0	.4
10. Recpt 10	.0	.0	.0	.0	.4
11. Recpt 11	.0	.0	.0	.2	.3
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – La Media and WB SR-905 Interchange
No Build – pm peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 NoBuildpm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. 905 WBLA     *   150    -4     0    -4 *  AG    151   2.1     .0  10.0
B. 905 WBRA     *   150     4     0     4 *  AG    330   2.1     .0  10.0
C. 905 ON 1     *     0   -15   120   -15 *  AG    737   2.1     .0  10.0
D. 905 ON 2     *   120   -15   155   -70 *  AG    737   2.1     .0  10.0
E. 905 ON 3     *   155   -70   130  -125 *  AG    737   2.1     .0  10.0
F. 905 ONA      *  -150    -4     0    -4 *  AG     64   2.1     .0  10.0
G. 905 OND      *     0     4  -150     4 *  AG     54   2.1     .0  10.0
H. LM NBTA      *     0  -150     0     0 *  AG   2141   2.1     .0  10.0
I. LM NBRA      *    13  -150    13     0 *  AG    711   2.1     .0  10.0
J. LM NBD       *     6     0     6   150 *  AG   2462   2.1     .0  10.0
K. LM SBLA      *     0   150     0     0 *  AG      0   2.1     .0  10.0
L. LM SBTA      *    -7   150    -7     0 *  AG   2021   2.1     .0  10.0
M. LM SBD       *    -7     0    -7  -150 *  AG   2165   2.1     .0  10.0
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 NoBuildpm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	191.	.7	.0	.0	.0	.0	.0	.0	.0	.3
2. Recpt 2	197.	.7	.0	.0	.0	.0	.0	.0	.0	.2
3. Recpt 3	192.	.8	.0	.0	.0	.0	.0	.0	.0	.2
4. Recpt 4	201.	.5	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	206.	.4	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	91.	.7	.0	.0	.3	.0	.0	.0	.0	.2
7. Recpt 7	29.	.7	.0	.0	.0	.0	.0	.0	.0	.1
8. Recpt 8	20.	.7	.0	.0	.0	.0	.0	.0	.0	.2
9. Recpt 9	168.	.7	.0	.0	.0	.0	.0	.0	.0	.3
10. Recpt 10	169.	.7	.0	.0	.0	.0	.0	.0	.0	.3
11. Recpt 11	170.	.7	.0	.0	.0	.0	.0	.0	.0	.3
12. Recpt 12	91.	.5	.0	.0	.2	.0	.0	.0	.0	.1
13. Recpt 13	90.	.4	.0	.0	.1	.0	.0	.0	.0	.0
14. Recpt 14	160.	.4	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	104.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 NoBuildpm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.1	.0	.0	.0	.2
2. Recpt 2	.0	.2	.0	.0	.2
3. Recpt 3	.0	.3	.0	.0	.2
4. Recpt 4	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.1
6. Recpt 6	.0	.0	.0	.0	.2
7. Recpt 7	.0	.2	.0	.0	.3
8. Recpt 8	.0	.2	.0	.0	.3
9. Recpt 9	.0	.0	.0	.0	.4
10. Recpt 10	.0	.0	.0	.0	.3
11. Recpt 11	.0	.0	.0	.2	.2
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – La Media and WB SR-905 Interchange
Two-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 2 Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES      TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 905 WBLA	150	-4	0	-4	AG	210	2.1	.0	10.0
B. 905 WBRA	150	4	0	4	AG	314	2.1	.0	10.0
C. 905 ON 1	0	-15	120	-15	AG	386	2.1	.0	10.0
D. 905 ON 2	120	-15	155	-70	AG	386	2.1	.0	10.0
E. 905 ON 3	155	-70	130	-125	AG	386	2.1	.0	10.0
F. 905 ONA	-150	-4	0	-4	AG	50	2.1	.0	10.0
G. 905 OND	0	4	-150	4	AG	60	2.1	.0	10.0
H. LM NBTA	0	-150	0	0	AG	1494	2.1	.0	10.0
I. LM NBRA	13	-150	13	0	AG	360	2.1	.0	10.0
J. LM NBD	6	0	6	150	AG	1790	2.1	.0	10.0
K. LM SBLA	0	150	0	0	AG	0	2.1	.0	10.0
L. LM SBTA	-7	150	-7	0	AG	2180	2.1	.0	10.0
M. LM SBD	-7	0	-7	-150	AG	2378	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	192.	.6	.0	.0	.0	.0	.0	.0	.0	.2
2. Recpt 2	197.	.6	.0	.0	.0	.0	.0	.0	.0	.2
3. Recpt 3	192.	.7	.0	.0	.0	.0	.0	.0	.0	.2
4. Recpt 4	201.	.4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	207.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	168.	.6	.0	.0	.0	.0	.0	.0	.0	.2
7. Recpt 7	28.	.6	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	20.	.7	.0	.0	.0	.0	.0	.0	.0	.1
9. Recpt 9	168.	.7	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	170.	.7	.0	.0	.0	.0	.0	.0	.0	.2
11. Recpt 11	171.	.7	.0	.0	.0	.0	.0	.0	.0	.2
12. Recpt 12	90.	.4	.0	.0	.1	.0	.0	.0	.0	.0
13. Recpt 13	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	160.	.3	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	101.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.0	.0	.0	.0	.2
2. Recpt 2	.0	.2	.0	.0	.2
3. Recpt 3	.0	.2	.0	.0	.2
4. Recpt 4	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.1
6. Recpt 6	.0	.0	.0	.0	.4
7. Recpt 7	.0	.1	.0	.0	.4
8. Recpt 8	.0	.1	.0	.0	.4
9. Recpt 9	.0	.0	.0	.0	.4
10. Recpt 10	.0	.0	.0	.0	.4
11. Recpt 11	.0	.0	.0	.2	.2
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – La Media and WB SR-905 Interchange
Two-Interchange Alternative – pm peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 2 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 905 WBLA	*	150	-4	0	-4	*	AG	145	2.1	.0	10.0
B. 905 WBRA	*	150	4	0	4	*	AG	327	2.1	.0	10.0
C. 905 ON 1	*	0	-15	120	-15	*	AG	731	2.1	.0	10.0
D. 905 ON 2	*	120	-15	155	-70	*	AG	731	2.1	.0	10.0
E. 905 ON 3	*	155	-70	130	-125	*	AG	731	2.1	.0	10.0
F. 905 ONA	*	-150	-4	0	-4	*	AG	64	2.1	.0	10.0
G. 905 OND	*	0	4	-150	4	*	AG	54	2.1	.0	10.0
H. LM NBTA	*	0	-150	0	0	*	AG	2082	2.1	.0	10.0
I. LM NBRA	*	13	-150	13	0	*	AG	705	2.1	.0	10.0
J. LM NBD	*	6	0	6	150	*	AG	2400	2.1	.0	10.0
K. LM SBLA	*	0	150	0	0	*	AG	0	2.1	.0	10.0
L. LM SBTA	*	-7	150	-7	0	*	AG	1978	2.1	.0	10.0
M. LM SBD	*	-7	0	-7	-150	*	AG	2116	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	191.	.7	.0	.0	.0	.0	.0	.0	.0	.3
2. Recpt 2	197.	.7	.0	.0	.0	.0	.0	.0	.0	.2
3. Recpt 3	192.	.8	.0	.0	.0	.0	.0	.0	.0	.2
4. Recpt 4	201.	.5	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	206.	.4	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	91.	.7	.0	.0	.3	.0	.0	.0	.0	.2
7. Recpt 7	29.	.6	.0	.0	.0	.0	.0	.0	.0	.1
8. Recpt 8	20.	.7	.0	.0	.0	.0	.0	.0	.0	.2
9. Recpt 9	168.	.7	.0	.0	.0	.0	.0	.0	.0	.3
10. Recpt 10	169.	.7	.0	.0	.0	.0	.0	.0	.0	.3
11. Recpt 11	170.	.7	.0	.0	.0	.0	.0	.0	.0	.2
12. Recpt 12	91.	.5	.0	.0	.2	.0	.0	.0	.0	.0
13. Recpt 13	90.	.4	.0	.0	.1	.0	.0	.0	.0	.0
14. Recpt 14	160.	.4	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	104.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.1	.0	.0	.0	.2
2. Recpt 2	.0	.2	.0	.0	.2
3. Recpt 3	.0	.3	.0	.0	.2
4. Recpt 4	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.2
7. Recpt 7	.0	.2	.0	.0	.3
8. Recpt 8	.0	.2	.0	.0	.3
9. Recpt 9	.0	.0	.0	.0	.4
10. Recpt 10	.0	.0	.0	.0	.3
11. Recpt 11	.0	.0	.0	.2	.2
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – La Media and WB SR-905 Interchange
One-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 1 Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 905 WBLA	*	150	-4	0	-4	* AG	214	2.1	.0	10.0
B. 905 WBRA	*	150	4	0	4	* AG	312	2.1	.0	10.0
C. 905 ON 1	*	0	-15	120	-15	* AG	383	2.1	.0	10.0
D. 905 ON 2	*	120	-15	155	-70	* AG	383	2.1	.0	10.0
E. 905 ON 3	*	155	-70	130	-125	* AG	383	2.1	.0	10.0
F. 905 ONA	*	-150	-4	0	-4	* AG	50	2.1	.0	10.0
G. 905 OND	*	0	4	-150	4	* AG	60	2.1	.0	10.0
H. LM NBTA	*	0	-150	0	0	* AG	1465	2.1	.0	10.0
I. LM NBRA	*	13	-150	13	0	* AG	357	2.1	.0	10.0
J. LM NBD	*	6	0	6	150	* AG	1759	2.1	.0	10.0
K. LM SBLA	*	0	150	0	0	* AG	0	2.1	.0	10.0
L. LM SBTA	*	-7	150	-7	0	* AG	2150	2.1	.0	10.0
M. LM SBD	*	-7	0	-7	-150	* AG	2351	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	192.	.6	.0	.0	.0	.0	.0	.0	.0	.2
2. Recpt 2	197.	.6	.0	.0	.0	.0	.0	.0	.0	.2
3. Recpt 3	192.	.7	.0	.0	.0	.0	.0	.0	.0	.2
4. Recpt 4	201.	.4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	207.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	168.	.6	.0	.0	.0	.0	.0	.0	.0	.2
7. Recpt 7	28.	.6	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	20.	.6	.0	.0	.0	.0	.0	.0	.0	.1
9. Recpt 9	168.	.7	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	170.	.7	.0	.0	.0	.0	.0	.0	.0	.2
11. Recpt 11	171.	.7	.0	.0	.0	.0	.0	.0	.0	.2
12. Recpt 12	90.	.3	.0	.0	.1	.0	.0	.0	.0	.0
13. Recpt 13	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	160.	.3	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	101.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.0	.0	.0	.0	.2
2. Recpt 2	.0	.2	.0	.0	.2
3. Recpt 3	.0	.2	.0	.0	.2
4. Recpt 4	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.1
6. Recpt 6	.0	.0	.0	.0	.4
7. Recpt 7	.0	.1	.0	.0	.4
8. Recpt 8	.0	.1	.0	.0	.4
9. Recpt 9	.0	.0	.0	.0	.4
10. Recpt 10	.0	.0	.0	.0	.3
11. Recpt 11	.0	.0	.0	.2	.2
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – La Media and WB SR-905 Interchange
One-Interchange Alternative – pm peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 1 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 905 WBLA	*	150	-4	0	-4	*	AG	151	2.1	.0	10.0
B. 905 WBRA	*	150	4	0	4	*	AG	322	2.1	.0	10.0
C. 905 ON 1	*	0	-15	120	-15	*	AG	726	2.1	.0	10.0
D. 905 ON 2	*	120	-15	155	-70	*	AG	726	2.1	.0	10.0
E. 905 ON 3	*	155	-70	130	-125	*	AG	726	2.1	.0	10.0
F. 905 ONA	*	-150	-4	0	-4	*	AG	64	2.1	.0	10.0
G. 905 OND	*	0	4	-150	4	*	AG	55	2.1	.0	10.0
H. LM NBTA	*	0	-150	0	0	*	AG	2053	2.1	.0	10.0
I. LM NBRA	*	13	-150	13	0	*	AG	700	2.1	.0	10.0
J. LM NBD	*	6	0	6	150	*	AG	2366	2.1	.0	10.0
K. LM SBLA	*	0	150	0	0	*	AG	0	2.1	.0	10.0
L. LM SBTA	*	-7	150	-7	0	*	AG	1935	2.1	.0	10.0
M. LM SBD	*	-7	0	-7	-150	*	AG	2079	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	191.	.7	.0	.0	.0	.0	.0	.0	.0	.3
2. Recpt 2	197.	.7	.0	.0	.0	.0	.0	.0	.0	.2
3. Recpt 3	192.	.8	.0	.0	.0	.0	.0	.0	.0	.2
4. Recpt 4	201.	.5	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	206.	.4	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	91.	.7	.0	.0	.3	.0	.0	.0	.0	.2
7. Recpt 7	29.	.6	.0	.0	.0	.0	.0	.0	.0	.1
8. Recpt 8	20.	.7	.0	.0	.0	.0	.0	.0	.0	.2
9. Recpt 9	168.	.7	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	169.	.7	.0	.0	.0	.0	.0	.0	.0	.3
11. Recpt 11	170.	.7	.0	.0	.0	.0	.0	.0	.0	.2
12. Recpt 12	91.	.5	.0	.0	.2	.0	.0	.0	.0	.0
13. Recpt 13	90.	.4	.0	.0	.1	.0	.0	.0	.0	.0
14. Recpt 14	160.	.4	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	104.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.1	.0	.0	.0	.2
2. Recpt 2	.0	.2	.0	.0	.2
3. Recpt 3	.0	.3	.0	.0	.2
4. Recpt 4	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.2
7. Recpt 7	.0	.2	.0	.0	.3
8. Recpt 8	.0	.2	.0	.0	.3
9. Recpt 9	.0	.0	.0	.0	.4
10. Recpt 10	.0	.0	.0	.0	.3
11. Recpt 11	.0	.0	.0	.2	.2
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – La Media and WB SR-905 Interchange
No Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 No Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 905 WBLA	*	150	-4	0	-4	* AG	240	2.1	.0	10.0
B. 905 WBRA	*	150	4	0	4	* AG	368	2.1	.0	10.0
C. 905 ON 1	*	0	-15	120	-15	* AG	421	2.1	.0	10.0
D. 905 ON 2	*	120	-15	155	-70	* AG	421	2.1	.0	10.0
E. 905 ON 3	*	155	-70	130	-125	* AG	421	2.1	.0	10.0
F. 905 ONA	*	-150	-4	0	-4	* AG	50	2.1	.0	10.0
G. 905 OND	*	0	4	-150	4	* AG	60	2.1	.0	10.0
H. LM NBTA	*	0	-150	0	0	* AG	1787	2.1	.0	10.0
I. LM NBRA	*	13	-150	13	0	* AG	395	2.1	.0	10.0
J. LM NBD	*	6	0	6	150	* AG	2137	2.1	.0	10.0
K. LM SBLA	*	0	150	0	0	* AG	0	2.1	.0	10.0
L. LM SBTA	*	-7	150	-7	0	* AG	2598	2.1	.0	10.0
M. LM SBD	*	-7	0	-7	-150	* AG	2826	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	192.	.6	.0	.0	.0	.0	.0	.0	.0	.2
2. Recpt 2	198.	.7	.0	.0	.0	.0	.0	.0	.0	.2
3. Recpt 3	192.	.8	.0	.0	.0	.0	.0	.0	.0	.2
4. Recpt 4	201.	.4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	208.	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	167.	.7	.0	.0	.0	.0	.0	.0	.0	.2
7. Recpt 7	29.	.7	.0	.0	.0	.0	.0	.0	.0	.1
8. Recpt 8	20.	.8	.0	.0	.0	.0	.0	.0	.0	.1
9. Recpt 9	168.	.8	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	169.	.8	.0	.0	.0	.0	.0	.0	.0	.2
11. Recpt 11	171.	.8	.0	.0	.0	.0	.0	.0	.0	.2
12. Recpt 12	90.	.4	.0	.0	.1	.0	.0	.0	.0	.0
13. Recpt 13	85.	.3	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	160.	.4	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	101.	.3	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.0	.0	.0	.0	.2
2. Recpt 2	.0	.2	.0	.0	.2
3. Recpt 3	.0	.3	.0	.0	.3
4. Recpt 4	.0	.0	.0	.0	.2
5. Recpt 5	.0	.0	.0	.0	.1
6. Recpt 6	.0	.0	.0	.0	.5
7. Recpt 7	.0	.1	.0	.0	.4
8. Recpt 8	.0	.1	.0	.0	.4
9. Recpt 9	.0	.0	.0	.0	.5
10. Recpt 10	.0	.0	.0	.1	.4
11. Recpt 11	.0	.0	.0	.2	.3
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.1
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – La Media and WB SR-905 Interchange
No Interchange Alternative – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: La Media and WB SR 905 No Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. 905 WBLA	150	-4	0	-4	AG	169	2.1	.0	10.0
B. 905 WBRA	150	4	0	4	AG	381	2.1	.0	10.0
C. 905 ON 1	0	-15	120	-15	AG	799	2.1	.0	10.0
D. 905 ON 2	120	-15	155	-70	AG	799	2.1	.0	10.0
E. 905 ON 3	155	-70	130	-125	AG	799	2.1	.0	10.0
F. 905 ONA	-150	-4	0	-4	AG	64	2.1	.0	10.0
G. 905 OND	0	4	-150	4	AG	54	2.1	.0	10.0
H. LM NBTA	0	-150	0	0	AG	2587	2.1	.0	10.0
I. LM NBRA	13	-150	13	0	AG	773	2.1	.0	10.0
J. LM NBD	6	0	6	150	AG	2859	2.1	.0	10.0
K. LM SBLA	0	150	0	0	AG	0	2.1	.0	10.0
L. LM SBTA	-7	150	-7	0	AG	2350	2.1	.0	10.0
M. LM SBD	-7	0	-7	-150	AG	2512	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: La Media and WB SR 905 No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	16	14	1.8
2. Recpt 2	16	34	1.8
3. Recpt 3	16	54	1.8
4. Recpt 4	36	14	1.8
5. Recpt 5	56	14	1.8
6. Recpt 6	-17	-14	1.8
7. Recpt 7	-17	-34	1.8
8. Recpt 8	-17	-54	1.8
9. Recpt 9	-17	14	1.8
10. Recpt 10	-17	34	1.8
11. Recpt 11	-17	54	1.8
12. Recpt 12	-37	-14	1.8
13. Recpt 13	-57	-14	1.8
14. Recpt 14	-37	14	1.8
15. Recpt 15	-57	14	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	191.	.8	.0	.0	.0	.0	.0	.0	.0	.3
2. Recpt 2	198.	.8	.0	.0	.0	.0	.0	.0	.0	.3
3. Recpt 3	192.	.9	.0	.0	.0	.0	.0	.0	.0	.3
4. Recpt 4	201.	.5	.0	.0	.0	.0	.0	.0	.0	.2
5. Recpt 5	208.	.4	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	91.	.8	.0	.0	.3	.0	.0	.0	.0	.2
7. Recpt 7	29.	.7	.0	.0	.0	.0	.0	.0	.0	.2
8. Recpt 8	21.	.8	.0	.0	.0	.0	.0	.0	.0	.2
9. Recpt 9	168.	.8	.0	.0	.0	.0	.0	.0	.0	.3
10. Recpt 10	168.	.8	.0	.0	.0	.0	.0	.0	.0	.3
11. Recpt 11	170.	.8	.0	.0	.0	.0	.0	.0	.0	.3
12. Recpt 12	91.	.5	.0	.0	.2	.0	.0	.0	.0	.1
13. Recpt 13	90.	.4	.0	.0	.1	.0	.0	.0	.0	.0
14. Recpt 14	160.	.4	.0	.0	.0	.0	.0	.0	.0	.2
15. Recpt 15	104.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: La Media and WB SR 905 No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M
1. Recpt 1	.1	.0	.0	.0	.2
2. Recpt 2	.0	.3	.0	.0	.2
3. Recpt 3	.0	.3	.0	.0	.2
4. Recpt 4	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.1
6. Recpt 6	.0	.0	.0	.0	.3
7. Recpt 7	.0	.2	.0	.0	.4
8. Recpt 8	.0	.2	.0	.0	.4
9. Recpt 9	.0	.0	.0	.0	.4
10. Recpt 10	.0	.0	.0	.1	.3
11. Recpt 11	.0	.0	.0	.2	.2
12. Recpt 12	.0	.0	.0	.0	.1
13. Recpt 13	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.2
15. Recpt 15	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
No Build – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media NoBuild am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. OM EBLA      *  -150     0     0     0 *  AG    318   2.1     .0  10.0
B. OM EBTA      *  -150   -11     0   -11 *  AG   1862   2.1     .0  10.0
C. OM EBRA      *  -150   -20     0   -20 *  AG    312   2.1     .0  10.0
D. OM EBD       *     0   -11   150   -11 *  AG   2336   2.1     .0  10.0
E. OM WBLA      *   150     0     0     0 *  AG    436   2.1     .0  10.0
F. OM WBTA      *   150    11     0    11 *  AG   1129   2.1     .0  10.0
G. OM WBRA      *   150    20     0    20 *  AG    403   2.1     .0  10.0
H. OM WBD       *     0    11  -150    11 *  AG   1744   2.1     .0  10.0
I. LaMedia NBLA *     0  -150     0     0 *  AG    383   2.1     .0  10.0
J. LaMedia NBTA *     9  -150     9     0 *  AG   1289   2.1     .0  10.0
K. LaMedia NBRA *    17  -150    17     0 *  AG    127   2.1     .0  10.0
L. LaMedia NBD  *     9     0     9   150 *  AG   2010   2.1     .0  10.0
M. LaMedia SBLA *     0   150     0     0 *  AG    347   2.1     .0  10.0
N. LaMedia SBTA *    -9   150    -9     0 *  AG   1499   2.1     .0  10.0
O. LaMedia SBRA *   -17   150   -17     0 *  AG    232   2.1     .0  10.0
P. LaMedia SBD  *    -9     0    -9  -150 *  AG   2247   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media NoBuild am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-19	-30	1.8
2. Recpt 2	-19	-50	1.8
3. Recpt 3	-19	-70	1.8
4. Recpt 4	-39	-30	1.8
5. Recpt 5	-59	-30	1.8
6. Recpt 6	-27	21	1.8
7. Recpt 7	-47	21	1.8
8. Recpt 8	-67	21	1.8
9. Recpt 9	-27	41	1.8
10. Recpt 10	-27	61	1.8
11. Recpt 11	27	-21	1.8
12. Recpt 12	47	-21	1.8
13. Recpt 13	67	-21	1.8
14. Recpt 14	27	-41	1.8
15. Recpt 15	27	-61	1.8
16. Recpt 16	19	30	1.8
17. Recpt 17	19	50	1.8
18. Recpt 18	19	70	1.8
19. Recpt 19	39	30	1.8
20. Recpt 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media NoBuild am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	24.	.8	.0	.1	.0	.0	.0	.0	.0	.0
2. Recpt 2	13.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	13.	.8	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	71.	.7	.0	.0	.0	.2	.0	.0	.0	.0
5. Recpt 5	75.	.6	.0	.0	.0	.2	.0	.0	.0	.0
6. Recpt 6	161.	.8	.0	.1	.0	.0	.0	.0	.0	.2
7. Recpt 7	105.	.7	.0	.0	.0	.2	.0	.0	.0	.2
8. Recpt 8	103.	.7	.0	.0	.0	.2	.0	.0	.0	.3
9. Recpt 9	165.	.7	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	167.	.6	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	284.	.8	.0	.3	.0	.0	.0	.0	.0	.1
12. Recpt 12	284.	.8	.0	.1	.0	.3	.0	.0	.0	.1
13. Recpt 13	282.	.8	.0	.0	.0	.3	.0	.0	.0	.1
14. Recpt 14	345.	.7	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	347.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	195.	.8	.0	.0	.0	.1	.0	.0	.0	.0
17. Recpt 17	193.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	192.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	252.	.7	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	255.	.6	.0	.1	.0	.0	.0	.0	.0	.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media NoBuild am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.0	.0	.3
2. Recpt 2	.0	.0	.0	.2	.0	.0	.0	.3
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.4
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.1	.0	.0	.0	.0	.0	.2
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.1	.0	.0	.0	.0	.0	.1
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.1	.0	.0
16. Recpt 16	.0	.2	.0	.1	.0	.0	.0	.2
17. Recpt 17	.0	.0	.0	.3	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.3	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
No Build – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media NoBuild pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. OM EBLA	*	-150	0	0	0	*	AG	256	2.1	.0	10.0
B. OM EBTA	*	-150	-11	0	-11	*	AG	1242	2.1	.0	10.0
C. OM EBRA	*	-150	-20	0	-20	*	AG	421	2.1	.0	10.0
D. OM EBD	*	0	-11	150	-11	*	AG	2165	2.1	.0	10.0
E. OM WBLA	*	150	0	0	0	*	AG	140	2.1	.0	10.0
F. OM WBTA	*	150	11	0	11	*	AG	2048	2.1	.0	10.0
G. OM WBRA	*	150	20	0	20	*	AG	382	2.1	.0	10.0
H. OM WBD	*	0	11	-150	11	*	AG	2741	2.1	.0	10.0
I. LaMedia NBLA	*	0	-150	0	0	*	AG	343	2.1	.0	10.0
J. LaMedia NBTA	*	9	-150	9	0	*	AG	1649	2.1	.0	10.0
K. LaMedia NBRA	*	17	-150	17	0	*	AG	480	2.1	.0	10.0
L. LaMedia NBD	*	9	0	9	150	*	AG	2287	2.1	.0	10.0
M. LaMedia SBLA	*	0	150	0	0	*	AG	443	2.1	.0	10.0
N. LaMedia SBTA	*	-9	150	-9	0	*	AG	1419	2.1	.0	10.0
O. LaMedia SBRA	*	-17	150	-17	0	*	AG	350	2.1	.0	10.0
P. LaMedia SBD	*	-9	0	-9	-150	*	AG	1980	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media NoBuild pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recept 1	-19	-30	1.8
2. Recept 2	-19	-50	1.8
3. Recept 3	-19	-70	1.8
4. Recept 4	-39	-30	1.8
5. Recept 5	-59	-30	1.8
6. Recept 6	-27	21	1.8
7. Recept 7	-47	21	1.8
8. Recept 8	-67	21	1.8
9. Recept 9	-27	41	1.8
10. Recept 10	-27	61	1.8
11. Recept 11	27	-21	1.8
12. Recept 12	47	-21	1.8
13. Recept 13	67	-21	1.8
14. Recept 14	27	-41	1.8
15. Recept 15	27	-61	1.8
16. Recept 16	19	30	1.8
17. Recept 17	19	50	1.8
18. Recept 18	19	70	1.8
19. Recept 19	39	30	1.8
20. Recept 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media NoBuild pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	13.	.8	.0	.0	.0	.0	.0	.0	.0	.1
2. Recpt 2	13.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	11.	.8	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	71.	.7	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	75.	.7	.0	.0	.0	.2	.0	.1	.0	.0
6. Recpt 6	118.	.9	.0	.0	.0	.1	.0	.0	.0	.4
7. Recpt 7	105.	.8	.0	.0	.0	.2	.0	.0	.0	.3
8. Recpt 8	104.	.8	.0	.0	.0	.2	.0	.0	.0	.4
9. Recpt 9	164.	.7	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	166.	.7	.0	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	335.	.8	.0	.0	.0	.2	.0	.1	.0	.0
12. Recpt 12	287.	.8	.0	.0	.0	.3	.0	.0	.0	.2
13. Recpt 13	284.	.8	.0	.0	.0	.3	.0	.0	.0	.2
14. Recpt 14	344.	.7	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	346.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	193.	.9	.0	.0	.0	.0	.0	.1	.0	.0
17. Recpt 17	193.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	192.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	251.	.7	.0	.0	.0	.0	.0	.0	.0	.2
20. Recpt 20	255.	.7	.0	.0	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media NoBuild pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.2	.0	.0
2. Recpt 2	.0	.0	.0	.2	.0	.0	.0	.2
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.3
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.1	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.0	.0	.2	.0	.1	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.1	.0	.0
16. Recpt 16	.0	.2	.0	.1	.0	.0	.0	.2
17. Recpt 17	.0	.0	.0	.3	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.4	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
Two-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media 2 Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. OM EBLA      *  -150     0     0     0 *  AG    311   2.1     .0  10.0
B. OM EBTA      *  -150   -11     0   -11 *  AG   1740   2.1     .0  10.0
C. OM EBRA      *  -150   -20     0   -20 *  AG    300   2.1     .0  10.0
D. OM EBD       *     0   -11   150   -11 *  AG   2190   2.1     .0  10.0
E. OM WBLA      *   150     0     0     0 *  AG    409   2.1     .0  10.0
F. OM WBTA      *   150    11     0    11 *  AG   1055   2.1     .0  10.0
G. OM WBRA      *   150    20     0    20 *  AG    384   2.1     .0  10.0
H. OM WBD       *     0    11  -150    11 *  AG   1648   2.1     .0  10.0
I. LaMedia NBLA *     0  -150     0     0 *  AG    368   2.1     .0  10.0
J. LaMedia NBTA *     9  -150     9     0 *  AG   1265   2.1     .0  10.0
K. LaMedia NBRA *    17  -150    17     0 *  AG    119   2.1     .0  10.0
L. LaMedia NBD  *     9     0     9   150 *  AG   1960   2.1     .0  10.0
M. LaMedia SBLA *     0   150     0     0 *  AG    331   2.1     .0  10.0
N. LaMedia SBTA *    -9   150    -9     0 *  AG   1471   2.1     .0  10.0
O. LaMedia SBRA *   -17   150   -17     0 *  AG    227   2.1     .0  10.0
P. LaMedia SBD  *    -9     0    -9  -150 *  AG   2180   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-19	-30	1.8
2. Recpt 2	-19	-50	1.8
3. Recpt 3	-19	-70	1.8
4. Recpt 4	-39	-30	1.8
5. Recpt 5	-59	-30	1.8
6. Recpt 6	-27	21	1.8
7. Recpt 7	-47	21	1.8
8. Recpt 8	-67	21	1.8
9. Recpt 9	-27	41	1.8
10. Recpt 10	-27	61	1.8
11. Recpt 11	27	-21	1.8
12. Recpt 12	47	-21	1.8
13. Recpt 13	67	-21	1.8
14. Recpt 14	27	-41	1.8
15. Recpt 15	27	-61	1.8
16. Recpt 16	19	30	1.8
17. Recpt 17	19	50	1.8
18. Recpt 18	19	70	1.8
19. Recpt 19	39	30	1.8
20. Recpt 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	24.	.8	.0	.1	.0	.0	.0	.0	.0	.0
2. Recpt 2	13.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	12.	.8	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	73.	.6	.0	.0	.0	.2	.0	.0	.0	.0
5. Recpt 5	75.	.6	.0	.0	.0	.2	.0	.0	.0	.0
6. Recpt 6	162.	.7	.0	.0	.0	.0	.0	.0	.0	.2
7. Recpt 7	105.	.7	.0	.0	.0	.2	.0	.0	.0	.2
8. Recpt 8	103.	.7	.0	.0	.0	.2	.0	.0	.0	.3
9. Recpt 9	165.	.6	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	167.	.6	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	284.	.8	.0	.2	.0	.0	.0	.0	.0	.1
12. Recpt 12	284.	.7	.0	.0	.0	.3	.0	.0	.0	.1
13. Recpt 13	282.	.7	.0	.0	.0	.3	.0	.0	.0	.1
14. Recpt 14	345.	.6	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	347.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	195.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	193.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	192.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	252.	.6	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	255.	.6	.0	.1	.0	.0	.0	.0	.0	.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.0	.0	.3
2. Recpt 2	.0	.0	.0	.2	.0	.0	.0	.3
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.3
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.1	.0	.0	.0	.0	.0	.2
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.1	.0	.0	.0	.0	.0	.1
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.1	.0	.0
16. Recpt 16	.0	.2	.0	.1	.0	.0	.0	.2
17. Recpt 17	.0	.0	.0	.2	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.3	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
Two-Interchange Alternative – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media 2 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
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II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. OM EBLA	-150	0	0	0	AG	250	2.1	.0	10.0
B. OM EBTA	-150	-11	0	-11	AG	1161	2.1	.0	10.0
C. OM EBRA	-150	-20	0	-20	AG	405	2.1	.0	10.0
D. OM EBD	0	-11	150	-11	AG	2033	2.1	.0	10.0
E. OM WBLA	150	0	0	0	AG	131	2.1	.0	10.0
F. OM WBTA	150	11	0	11	AG	1914	2.1	.0	10.0
G. OM WBRA	150	20	0	20	AG	364	2.1	.0	10.0
H. OM WBD	0	11	-150	11	AG	2586	2.1	.0	10.0
I. LaMedia NBLA	0	-150	0	0	AG	330	2.1	.0	10.0
J. LaMedia NBTA	9	-150	9	0	AG	1618	2.1	.0	10.0
K. LaMedia NBRA	17	-150	17	0	AG	450	2.1	.0	10.0
L. LaMedia NBD	9	0	9	150	AG	2232	2.1	.0	10.0
M. LaMedia SBLA	0	150	0	0	AG	422	2.1	.0	10.0
N. LaMedia SBTA	-9	150	-9	0	AG	1392	2.1	.0	10.0
O. LaMedia SBRA	-17	150	-17	0	AG	342	2.1	.0	10.0
P. LaMedia SBD	-9	0	-9	-150	AG	1928	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-19	-30	1.8
2. Recpt 2	-19	-50	1.8
3. Recpt 3	-19	-70	1.8
4. Recpt 4	-39	-30	1.8
5. Recpt 5	-59	-30	1.8
6. Recpt 6	-27	21	1.8
7. Recpt 7	-47	21	1.8
8. Recpt 8	-67	21	1.8
9. Recpt 9	-27	41	1.8
10. Recpt 10	-27	61	1.8
11. Recpt 11	27	-21	1.8
12. Recpt 12	47	-21	1.8
13. Recpt 13	67	-21	1.8
14. Recpt 14	27	-41	1.8
15. Recpt 15	27	-61	1.8
16. Recpt 16	19	30	1.8
17. Recpt 17	19	50	1.8
18. Recpt 18	19	70	1.8
19. Recpt 19	39	30	1.8
20. Recpt 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	13.	.8	.0	.0	.0	.0	.0	.0	.0	.1
2. Recpt 2	13.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	11.	.8	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	71.	.7	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	75.	.6	.0	.0	.0	.2	.0	.1	.0	.0
6. Recpt 6	118.	.9	.0	.0	.0	.1	.0	.0	.0	.3
7. Recpt 7	105.	.8	.0	.0	.0	.2	.0	.0	.0	.3
8. Recpt 8	104.	.8	.0	.0	.0	.2	.0	.0	.0	.4
9. Recpt 9	164.	.7	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	166.	.7	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	341.	.8	.0	.0	.0	.2	.0	.1	.0	.0
12. Recpt 12	287.	.8	.0	.0	.0	.3	.0	.0	.0	.2
13. Recpt 13	284.	.8	.0	.0	.0	.3	.0	.0	.0	.2
14. Recpt 14	344.	.7	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	347.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	193.	.9	.0	.0	.0	.0	.0	.1	.0	.0
17. Recpt 17	193.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	191.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	251.	.7	.0	.0	.0	.0	.0	.0	.0	.2
20. Recpt 20	255.	.7	.0	.0	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.2	.0	.0
2. Recpt 2	.0	.0	.0	.2	.0	.0	.0	.2
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.3
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.1	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.0	.0	.2	.0	.1	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.1	.0	.0
16. Recpt 16	.0	.2	.0	.1	.0	.0	.0	.2
17. Recpt 17	.0	.0	.0	.3	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.3	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
One-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media 1 Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. OM EBLA      *  -150     0     0     0 *  AG    314   2.1     .0  10.0
B. OM EBTA      *  -150   -11     0   -11 *  AG   1644   2.1     .0  10.0
C. OM EBRA      *  -150   -20     0   -20 *  AG    314   2.1     .0  10.0
D. OM EBD       *     0   -11   150   -11 *  AG   2066   2.1     .0  10.0
E. OM WBLA      *   150     0     0     0 *  AG    394   2.1     .0  10.0
F. OM WBTA      *   150    11     0    11 *  AG    996   2.1     .0  10.0
G. OM WBRA      *   150    20     0    20 *  AG    356   2.1     .0  10.0
H. OM WBD       *     0    11  -150    11 *  AG   1610   2.1     .0  10.0
I. LaMedia NBLA *     0  -150     0     0 *  AG    385   2.1     .0  10.0
J. LaMedia NBTA *     9  -150     9     0 *  AG   1303   2.1     .0  10.0
K. LaMedia NBRA *    17  -150    17     0 *  AG    115   2.1     .0  10.0
L. LaMedia NBD  *     9     0     9   150 *  AG   1973   2.1     .0  10.0
M. LaMedia SBLA *     0   150     0     0 *  AG    307   2.1     .0  10.0
N. LaMedia SBTA *    -9   150    -9     0 *  AG   1515   2.1     .0  10.0
O. LaMedia SBRA *   -17   150   -17     0 *  AG    229   2.1     .0  10.0
P. LaMedia SBD  *    -9     0    -9  -150 *  AG   2223   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-19	-30	1.8
2. Recpt 2	-19	-50	1.8
3. Recpt 3	-19	-70	1.8
4. Recpt 4	-39	-30	1.8
5. Recpt 5	-59	-30	1.8
6. Recpt 6	-27	21	1.8
7. Recpt 7	-47	21	1.8
8. Recpt 8	-67	21	1.8
9. Recpt 9	-27	41	1.8
10. Recpt 10	-27	61	1.8
11. Recpt 11	27	-21	1.8
12. Recpt 12	47	-21	1.8
13. Recpt 13	67	-21	1.8
14. Recpt 14	27	-41	1.8
15. Recpt 15	27	-61	1.8
16. Recpt 16	19	30	1.8
17. Recpt 17	19	50	1.8
18. Recpt 18	19	70	1.8
19. Recpt 19	39	30	1.8
20. Recpt 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	24.	.8	.0	.1	.0	.0	.0	.0	.0	.0
2. Recpt 2	13.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	12.	.8	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	71.	.6	.0	.0	.0	.2	.0	.0	.0	.0
5. Recpt 5	75.	.6	.0	.0	.0	.2	.0	.0	.0	.0
6. Recpt 6	162.	.7	.0	.0	.0	.0	.0	.0	.0	.2
7. Recpt 7	105.	.7	.0	.0	.0	.2	.0	.0	.0	.2
8. Recpt 8	103.	.7	.0	.0	.0	.2	.0	.0	.0	.3
9. Recpt 9	165.	.6	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	167.	.6	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	284.	.8	.0	.2	.0	.0	.0	.0	.0	.1
12. Recpt 12	284.	.7	.0	.0	.0	.3	.0	.0	.0	.1
13. Recpt 13	282.	.7	.0	.0	.0	.3	.0	.0	.0	.1
14. Recpt 14	345.	.6	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	347.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	193.	.8	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	193.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	192.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	252.	.6	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	255.	.6	.0	.1	.0	.0	.0	.0	.0	.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.0	.0	.3
2. Recpt 2	.0	.0	.0	.2	.0	.0	.0	.3
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.3
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.1	.0	.0	.0	.0	.0	.2
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.1	.0	.0	.0	.0	.0	.1
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.1	.0	.0
16. Recpt 16	.0	.2	.0	.0	.0	.0	.0	.2
17. Recpt 17	.0	.0	.0	.2	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.3	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
One-Interchange Alternative – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media 1 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
 BRG= WORST CASE           VD=   .0 CM/S
CLAS=     7 (G)            VS=   .0 CM/S
MIXH=  100. M             AMB=   .0 PPM
SIGTH=    5. DEGREES      TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. OM EBLA	-150	0	0	0	AG	252	2.1	.0	10.0
B. OM EBTA	-150	-11	0	-11	AG	1097	2.1	.0	10.0
C. OM EBRA	-150	-20	0	-20	AG	424	2.1	.0	10.0
D. OM EBD	0	-11	150	-11	AG	1922	2.1	.0	10.0
E. OM WBLA	150	0	0	0	AG	126	2.1	.0	10.0
F. OM WBTA	150	11	0	11	AG	1808	2.1	.0	10.0
G. OM WBRA	150	20	0	20	AG	338	2.1	.0	10.0
H. OM WBD	0	11	-150	11	AG	2499	2.1	.0	10.0
I. LaMedia NBLA	0	-150	0	0	AG	346	2.1	.0	10.0
J. LaMedia NBTA	9	-150	9	0	AG	1666	2.1	.0	10.0
K. LaMedia NBRA	17	-150	17	0	AG	434	2.1	.0	10.0
L. LaMedia NBD	9	0	9	150	AG	2256	2.1	.0	10.0
M. LaMedia SBLA	0	150	0	0	AG	391	2.1	.0	10.0
N. LaMedia SBTA	-9	150	-9	0	AG	1433	2.1	.0	10.0
O. LaMedia SBRA	-17	150	-17	0	AG	345	2.1	.0	10.0
P. LaMedia SBD	-9	0	-9	-150	AG	1983	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-19	-30	1.8
2. Recpt 2	-19	-50	1.8
3. Recpt 3	-19	-70	1.8
4. Recpt 4	-39	-30	1.8
5. Recpt 5	-59	-30	1.8
6. Recpt 6	-27	21	1.8
7. Recpt 7	-47	21	1.8
8. Recpt 8	-67	21	1.8
9. Recpt 9	-27	41	1.8
10. Recpt 10	-27	61	1.8
11. Recpt 11	27	-21	1.8
12. Recpt 12	47	-21	1.8
13. Recpt 13	67	-21	1.8
14. Recpt 14	27	-41	1.8
15. Recpt 15	27	-61	1.8
16. Recpt 16	19	30	1.8
17. Recpt 17	19	50	1.8
18. Recpt 18	19	70	1.8
19. Recpt 19	39	30	1.8
20. Recpt 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	13.	.8	.0	.0	.0	.0	.0	.0	.0	.1
2. Recpt 2	13.	.8	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	11.	.8	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	71.	.7	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	75.	.6	.0	.0	.0	.2	.0	.1	.0	.0
6. Recpt 6	118.	.8	.0	.0	.0	.1	.0	.0	.0	.3
7. Recpt 7	105.	.8	.0	.0	.0	.2	.0	.0	.0	.3
8. Recpt 8	104.	.8	.0	.0	.0	.2	.0	.0	.0	.4
9. Recpt 9	164.	.7	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	166.	.7	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	341.	.8	.0	.0	.0	.2	.0	.0	.0	.0
12. Recpt 12	287.	.7	.0	.0	.0	.3	.0	.0	.0	.2
13. Recpt 13	284.	.7	.0	.0	.0	.3	.0	.0	.0	.2
14. Recpt 14	344.	.7	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	346.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	193.	.8	.0	.0	.0	.0	.0	.1	.0	.0
17. Recpt 17	193.	.8	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	191.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	251.	.7	.0	.0	.0	.0	.0	.0	.0	.2
20. Recpt 20	255.	.6	.0	.0	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.2	.0	.0
2. Recpt 2	.0	.0	.0	.2	.0	.0	.0	.2
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.3
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.1	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.0	.0	.2	.0	.1	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.1	.0	.0
16. Recpt 16	.0	.2	.0	.1	.0	.0	.0	.2
17. Recpt 17	.0	.0	.0	.3	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.3	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
No Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media No Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
   U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
 BRG= WORST CASE           VD=   .0 CM/S
CLAS=     7 (G)            VS=   .0 CM/S
MIXH=  100. M             AMB=   .0 PPM
SIGTH=    5. DEGREES      TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. OM EBLA	*	-150	0	0	0	*	AG	332	2.1	.0	10.0
B. OM EBTA	*	-150	-11	0	-11	*	AG	2060	2.1	.0	10.0
C. OM EBRA	*	-150	-20	0	-20	*	AG	351	2.1	.0	10.0
D. OM EBD	*	0	-11	150	-11	*	AG	2597	2.1	.0	10.0
E. OM WBLA	*	150	0	0	0	*	AG	519	2.1	.0	10.0
F. OM WBTA	*	150	11	0	11	*	AG	1249	2.1	.0	10.0
G. OM WBRA	*	150	20	0	20	*	AG	488	2.1	.0	10.0
H. OM WBD	*	0	11	-150	11	*	AG	1921	2.1	.0	10.0
I. LaMedia NBLA	*	0	-150	0	0	*	AG	430	2.1	.0	10.0
J. LaMedia NBTA	*	9	-150	9	0	*	AG	1456	2.1	.0	10.0
K. LaMedia NBRA	*	17	-150	17	0	*	AG	151	2.1	.0	10.0
L. LaMedia NBD	*	9	0	9	150	*	AG	2276	2.1	.0	10.0
M. LaMedia SBLA	*	0	150	0	0	*	AG	386	2.1	.0	10.0
N. LaMedia SBTA	*	-9	150	-9	0	*	AG	1693	2.1	.0	10.0
O. LaMedia SBRA	*	-17	150	-17	0	*	AG	242	2.1	.0	10.0
P. LaMedia SBD	*	-9	0	-9	-150	*	AG	2563	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-19	-30	1.8
2. Recpt 2	-19	-50	1.8
3. Recpt 3	-19	-70	1.8
4. Recpt 4	-39	-30	1.8
5. Recpt 5	-59	-30	1.8
6. Recpt 6	-27	21	1.8
7. Recpt 7	-47	21	1.8
8. Recpt 8	-67	21	1.8
9. Recpt 9	-27	41	1.8
10. Recpt 10	-27	61	1.8
11. Recpt 11	27	-21	1.8
12. Recpt 12	47	-21	1.8
13. Recpt 13	67	-21	1.8
14. Recpt 14	27	-41	1.8
15. Recpt 15	27	-61	1.8
16. Recpt 16	19	30	1.8
17. Recpt 17	19	50	1.8
18. Recpt 18	19	70	1.8
19. Recpt 19	39	30	1.8
20. Recpt 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	24.	.9	.0	.2	.0	.0	.0	.0	.0	.0
2. Recpt 2	13.	.9	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	13.	.9	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	71.	.7	.0	.0	.0	.2	.0	.0	.0	.0
5. Recpt 5	75.	.7	.0	.0	.0	.2	.0	.0	.0	.0
6. Recpt 6	161.	.8	.0	.1	.0	.0	.0	.0	.0	.2
7. Recpt 7	105.	.8	.0	.0	.0	.2	.0	.0	.0	.3
8. Recpt 8	103.	.8	.0	.0	.0	.2	.0	.0	.0	.3
9. Recpt 9	165.	.7	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	167.	.7	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	341.	.9	.0	.0	.0	.3	.0	.0	.0	.0
12. Recpt 12	284.	.8	.0	.1	.0	.3	.0	.0	.0	.2
13. Recpt 13	282.	.8	.0	.0	.0	.4	.0	.0	.0	.2
14. Recpt 14	345.	.7	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	347.	.7	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	195.	.9	.0	.0	.0	.1	.0	.0	.0	.0
17. Recpt 17	193.	.9	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	192.	.8	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	251.	.7	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	255.	.7	.0	.1	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.0	.0	.3
2. Recpt 2	.0	.0	.0	.2	.0	.1	.0	.3
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.4
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.1	.0	.0	.0	.0	.0	.3
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.3
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.0	.0	.2	.0	.1	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.1	.0	.0
16. Recpt 16	.0	.2	.0	.1	.0	.0	.0	.2
17. Recpt 17	.0	.0	.0	.3	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.4	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Otay Mesa Road and La Media
No Interchange Alternative – pm peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Otay Mesa and La Media No Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. OM EBLA	*	-150	0	0	0	*	AG	267	2.1	.0	10.0
B. OM EBTA	*	-150	-11	0	-11	*	AG	1374	2.1	.0	10.0
C. OM EBRA	*	-150	-20	0	-20	*	AG	473	2.1	.0	10.0
D. OM EBD	*	0	-11	150	-11	*	AG	2437	2.1	.0	10.0
E. OM WBLA	*	150	0	0	0	*	AG	166	2.1	.0	10.0
F. OM WBTA	*	150	11	0	11	*	AG	2266	2.1	.0	10.0
G. OM WBRA	*	150	20	0	20	*	AG	424	2.1	.0	10.0
H. OM WBD	*	0	11	-150	11	*	AG	3017	2.1	.0	10.0
I. LaMedia NBLA	*	0	-150	0	0	*	AG	386	2.1	.0	10.0
J. LaMedia NBTA	*	9	-150	9	0	*	AG	1863	2.1	.0	10.0
K. LaMedia NBRA	*	17	-150	17	0	*	AG	571	2.1	.0	10.0
L. LaMedia NBD	*	9	0	9	150	*	AG	2554	2.1	.0	10.0
M. LaMedia SBLA	*	0	150	0	0	*	AG	492	2.1	.0	10.0
N. LaMedia SBTA	*	-9	150	-9	0	*	AG	1602	2.1	.0	10.0
O. LaMedia SBRA	*	-17	150	-17	0	*	AG	365	2.1	.0	10.0
P. LaMedia SBD	*	-9	0	-9	-150	*	AG	2241	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Otay Mesa and La Media No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-19	-30	1.8
2. Recpt 2	-19	-50	1.8
3. Recpt 3	-19	-70	1.8
4. Recpt 4	-39	-30	1.8
5. Recpt 5	-59	-30	1.8
6. Recpt 6	-27	21	1.8
7. Recpt 7	-47	21	1.8
8. Recpt 8	-67	21	1.8
9. Recpt 9	-27	41	1.8
10. Recpt 10	-27	61	1.8
11. Recpt 11	27	-21	1.8
12. Recpt 12	47	-21	1.8
13. Recpt 13	67	-21	1.8
14. Recpt 14	27	-41	1.8
15. Recpt 15	27	-61	1.8
16. Recpt 16	19	30	1.8
17. Recpt 17	19	50	1.8
18. Recpt 18	19	70	1.8
19. Recpt 19	39	30	1.8
20. Recpt 20	59	30	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Otay Mesa and La Media No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	24.	.9	.0	.1	.0	.0	.0	.0	.0	.0
2. Recpt 2	13.	.9	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	12.	.9	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	71.	.8	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	75.	.7	.0	.0	.0	.2	.0	.1	.0	.0
6. Recpt 6	118.	1.0	.0	.0	.0	.2	.0	.0	.0	.4
7. Recpt 7	105.	.9	.0	.0	.0	.2	.0	.0	.0	.4
8. Recpt 8	104.	.9	.0	.0	.0	.2	.0	.0	.0	.5
9. Recpt 9	164.	.8	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	166.	.7	.0	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	298.	1.0	.0	.0	.0	.3	.0	.0	.0	.2
12. Recpt 12	287.	.9	.0	.0	.0	.3	.0	.0	.0	.2
13. Recpt 13	284.	.9	.0	.0	.0	.4	.0	.0	.0	.2
14. Recpt 14	344.	.8	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	346.	.8	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	193.	1.0	.0	.0	.0	.1	.0	.2	.0	.0
17. Recpt 17	193.	.9	.0	.0	.0	.0	.0	.1	.0	.0
18. Recpt 18	192.	.9	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	251.	.8	.0	.1	.0	.0	.0	.0	.0	.3
20. Recpt 20	255.	.7	.0	.1	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Otay Mesa and La Media No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.2	.0	.0	.0	.3
2. Recpt 2	.0	.0	.0	.2	.0	.0	.0	.3
3. Recpt 3	.0	.0	.0	.2	.0	.0	.0	.3
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.1	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.1	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.1	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.2	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.1	.0	.0
15. Recpt 15	.0	.0	.1	.2	.0	.1	.0	.0
16. Recpt 16	.0	.3	.0	.1	.0	.0	.0	.2
17. Recpt 17	.0	.1	.0	.3	.0	.0	.0	.2
18. Recpt 18	.0	.0	.0	.4	.0	.0	.0	.2
19. Recpt 19	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
No Build – am peak hour

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: SR905 and WB Siempre Viva No Build am
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide

  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=   150. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH=  100. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    497   2.1     .0  10.0
B. SV EBTA      *  -150   -15     0   -15 *  AG   1206   2.1     .0  10.0
C. SV EBD       *     0   -15   150   -15 *  AG   2419   2.1     .0  10.0
D. SV WBTA      *   150     6     0     6 *  AG   1138   2.1     .0  10.0
E. SV WBRA      *   150    15     0    15 *  AG    810   2.1     .0  10.0
F. SV WBD       *     0     6  -150     6 *  AG   1614   2.1     .0  10.0
G. 905 NBRA     *   -45  -126     0     4 *  AG   1213   2.1     .0  10.0
H. 905 NBLA     *   -45  -130     0     0 *  AG    476   2.1     .0  10.0
I. 905 NBD      *     0     0    -8   148 *  AG   1307   2.1     .0  10.0

III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Recpt 1  *      5    -25   1.8
2. Recpt 2  *     25    -25   1.8
3. Recpt 3  *     45    -25   1.8
4. Recpt 4  *     -3    -45   1.8
5. Recpt 5  *    -11    -65   1.8
6. Recpt 6  *      5     25   1.8
7. Recpt 7  *     25     25   1.8
8. Recpt 8  *     45     25   1.8
9. Recpt 9  *      4     45   1.8
10. Recpt 10 *     3     65   1.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva No Build am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	.8	.0	.0	.3	.0	.0	.0	.0	.0
2. Recpt 2	299.	.6	.0	.0	.3	.0	.0	.1	.0	.0
3. Recpt 3	286.	.6	.0	.0	.3	.0	.0	.1	.0	.0
4. Recpt 4	359.	.6	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	4.	.6	.0	.0	.0	.0	.0	.0	.2	.0
6. Recpt 6	198.	1.1	.0	.0	.0	.0	.0	.0	.4	.2
7. Recpt 7	210.	.6	.0	.0	.0	.0	.0	.0	.2	.0
8. Recpt 8	253.	.5	.0	.0	.0	.0	.1	.2	.0	.0
9. Recpt 9	193.	.8	.0	.0	.0	.0	.0	.0	.2	.1
10. Recpt 10	190.	.8	.0	.0	.0	.0	.0	.0	.2	.0

RECEPTOR	(PPM) I
1. Recpt 1	.4
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.3
5. Recpt 5	.2
6. Recpt 6	.3
7. Recpt 7	.0
8. Recpt 8	.0
9. Recpt 9	.3
10. Recpt 10	.4

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
No Build – pm peak hour

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: SR905 and WB Siempre Viva No Build pm
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide

  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=   150. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH=  100. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
 A. SV EBLA     *  -150     0     0     0 *  AG    725   2.1     .0  10.0
 B. SV EBTA     *  -150   -15     0   -15 *  AG   1228   2.1     .0  10.0
 C. SV EBD      *     0   -15   150   -15 *  AG   2144   2.1     .0  10.0
 D. SV WBTA     *   150     6     0     6 *  AG   1633   2.1     .0  10.0
 E. SV WBRA     *   150    15     0    15 *  AG   1027   2.1     .0  10.0
 F. SV WBD      *     0     6  -150     6 *  AG   2226   2.1     .0  10.0
 G. 905 NBRA    *   -45  -126     0     4 *  AG    916   2.1     .0  10.0
 H. 905 NBLA    *   -45  -130     0     0 *  AG    593   2.1     .0  10.0
 I. 905 NBD     *     0     0    -8   148 *  AG   1752   2.1     .0  10.0

 III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
 1. Recpt 1 *      5    -25   1.8
 2. Recpt 2 *     25    -25   1.8
 3. Recpt 3 *     45    -25   1.8
 4. Recpt 4 *     -3    -45   1.8
 5. Recpt 5 *    -11    -65   1.8
 6. Recpt 6 *      5     25   1.8
 7. Recpt 7 *     25     25   1.8
 8. Recpt 8 *     45     25   1.8
 9. Recpt 9 *      4     45   1.8
10. Recpt 10 *     3     65   1.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva No Build pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	.9	.0	.0	.2	.0	.0	.0	.0	.0
2. Recpt 2	298.	.6	.0	.0	.3	.0	.0	.2	.0	.0
3. Recpt 3	286.	.7	.0	.0	.3	.0	.0	.2	.0	.0
4. Recpt 4	359.	.7	.0	.0	.0	.0	.0	.0	.1	.0
5. Recpt 5	4.	.6	.0	.0	.0	.0	.0	.0	.1	.1
6. Recpt 6	198.	1.2	.0	.0	.0	.0	.1	.1	.3	.2
7. Recpt 7	239.	.6	.0	.0	.0	.0	.2	.2	.0	.0
8. Recpt 8	253.	.6	.0	.0	.0	.0	.2	.2	.0	.0
9. Recpt 9	193.	1.0	.0	.0	.0	.0	.0	.1	.2	.1
10. Recpt 10	190.	.9	.0	.0	.0	.0	.0	.0	.1	.0

RECEPTOR	(PPM) I
1. Recpt 1	.5
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.3
5. Recpt 5	.2
6. Recpt 6	.4
7. Recpt 7	.1
8. Recpt 8	.0
9. Recpt 9	.5
10. Recpt 10	.5

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
Two-Interchange Alternative – am peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: SR905 and WB Siempre Viva 2 Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    443   2.1     .0  10.0
B. SV EBTA      *  -150   -15     0   -15 *  AG   1190   2.1     .0  10.0
C. SV EBD       *     0   -15   150   -15 *  AG   2223   2.1     .0  10.0
D. SV WBTA      *   150     6     0     6 *  AG    985   2.1     .0  10.0
E. SV WBRA      *   150    15     0    15 *  AG    667   2.1     .0  10.0
F. SV WBD       *     0     6  -150     6 *  AG   1427   2.1     .0  10.0
G. 905 NBRA     *   -45  -126     0     4 *  AG   1033   2.1     .0  10.0
H. 905 NBLA     *   -45  -130     0     0 *  AG    422   2.1     .0  10.0
I. 905 NBD      *     0     0    -8   148 *  AG   1110   2.1     .0  10.0

III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*----------------------
1. Recpt 1  *      5    -25   1.8
2. Recpt 2  *     25    -25   1.8
3. Recpt 3  *     45    -25   1.8
4. Recpt 4  *     -3    -45   1.8
5. Recpt 5  *    -11    -65   1.8
6. Recpt 6  *      5     25   1.8
7. Recpt 7  *     25     25   1.8
8. Recpt 8  *     45     25   1.8
9. Recpt 9  *      4     45   1.8
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10. Recpt 10 * 3 65 1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	.7	.0	.0	.2	.0	.0	.0	.0	.0
2. Recpt 2	299.	.6	.0	.0	.3	.0	.0	.1	.0	.0
3. Recpt 3	286.	.6	.0	.0	.3	.0	.0	.1	.0	.0
4. Recpt 4	359.	.6	.0	.0	.0	.0	.0	.0	.1	.0
5. Recpt 5	4.	.5	.0	.0	.0	.0	.0	.0	.2	.0
6. Recpt 6	198.	1.0	.0	.0	.0	.0	.0	.0	.3	.1
7. Recpt 7	210.	.5	.0	.0	.0	.0	.0	.0	.2	.0
8. Recpt 8	253.	.5	.0	.0	.0	.0	.1	.1	.0	.0
9. Recpt 9	193.	.7	.0	.0	.0	.0	.0	.0	.2	.0
10. Recpt 10	190.	.7	.0	.0	.0	.0	.0	.0	.1	.0

RECEPTOR	(PPM) I
1. Recpt 1	.3
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.2
5. Recpt 5	.2
6. Recpt 6	.2
7. Recpt 7	.0
8. Recpt 8	.0
9. Recpt 9	.3

10. Recpt 10 * .3

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
Two-Interchange Alternative – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: SR905 and WB Siempre Viva 2 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I.  SITE VARIABLES

      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    646   2.1     .0  10.0
B. SV EBTA      *  -150   -15     0   -15 *  AG   1200   2.1     .0  10.0
C. SV EBD       *     0   -15   150   -15 *  AG   1980   2.1     .0  10.0
D. SV WBTA      *   150     6     0     6 *  AG   1406   2.1     .0  10.0
E. SV WBRA      *   150    15     0    15 *  AG    846   2.1     .0  10.0
F. SV WBD       *     0     6  -150     6 *  AG   1954   2.1     .0  10.0
G. 905 NBRA     *   -45  -126     0     4 *  AG    780   2.1     .0  10.0
H. 905 NBLA     *   -45  -130     0     0 *  AG    548   2.1     .0  10.0
I. 905 NBD      *     0     0    -8   148 *  AG   1492   2.1     .0  10.0

III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*----------------------
1. Recpt 1  *      5    -25   1.8
2. Recpt 2  *     25    -25   1.8
3. Recpt 3  *     45    -25   1.8
4. Recpt 4  *     -3    -45   1.8
5. Recpt 5  *    -11    -65   1.8
6. Recpt 6  *      5     25   1.8
7. Recpt 7  *     25     25   1.8
8. Recpt 8  *     45     25   1.8
```

9. Recpt 9	*	4	45	1.8
10. Recpt 10	*	3	65	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	.8	.0	.0	.2	.0	.0	.0	.0	.0
2. Recpt 2	298.	.6	.0	.0	.3	.0	.0	.1	.0	.0
3. Recpt 3	284.	.6	.0	.0	.2	.0	.0	.2	.0	.0
4. Recpt 4	359.	.6	.0	.0	.0	.0	.0	.0	.1	.0
5. Recpt 5	4.	.6	.0	.0	.0	.0	.0	.0	.1	.1
6. Recpt 6	198.	1.1	.0	.0	.0	.0	.0	.1	.3	.2
7. Recpt 7	242.	.5	.0	.0	.0	.0	.1	.2	.0	.0
8. Recpt 8	253.	.6	.0	.0	.0	.0	.1	.2	.0	.0
9. Recpt 9	193.	.9	.0	.0	.0	.0	.0	.0	.2	.1
10. Recpt 10	190.	.8	.0	.0	.0	.0	.0	.0	.1	.0

RECEPTOR	(PPM) I
1. Recpt 1	.4
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.3
5. Recpt 5	.2
6. Recpt 6	.3
7. Recpt 7	.0

```
 8. Recpt 8  *   .0
 9. Recpt 9  *   .4
10. Recpt 10 *   .4
```

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
One-Interchange Alternative – am peak hour

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: SR905 and WB Siempre Viva 1 Int am
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide

  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=   150. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH=  100. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)

 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    550   2.1     .0  10.0
B. SV EBTA      *  -150   -15     0   -15 *  AG   1426   2.1     .0  10.0
C. SV EBD       *     0   -15   150   -15 *  AG   2452   2.1     .0  10.0
D. SV WBTA      *   150     6     0     6 *  AG    996   2.1     .0  10.0
E. SV WBRA      *   150    15     0    15 *  AG    828   2.1     .0  10.0
F. SV WBD       *     0     6  -150     6 *  AG   1435   2.1     .0  10.0
G. 905 NBRA     *   -45  -126     0     4 *  AG   1026   2.1     .0  10.0
H. 905 NBLA     *   -45  -130     0     0 *  AG    439   2.1     .0  10.0
I. 905 NBD      *     0     0    -8   148 *  AG   1378   2.1     .0  10.0

 III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. Recpt 1  *      5    -25   1.8
2. Recpt 2  *     25    -25   1.8
3. Recpt 3  *     45    -25   1.8
4. Recpt 4  *     -3    -45   1.8
5. Recpt 5  *    -11    -65   1.8
6. Recpt 6  *      5     25   1.8
7. Recpt 7  *     25     25   1.8
```

```
 8. Recpt 8  *     45     25   1.8
 9. Recpt 9  *      4     45   1.8
10. Recpt 10 *      3     65   1.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	.8	.0	.0	.3	.0	.0	.0	.0	.0
2. Recpt 2	299.	.6	.0	.0	.3	.0	.0	.1	.0	.0
3. Recpt 3	286.	.6	.0	.0	.3	.0	.0	.1	.0	.0
4. Recpt 4	359.	.6	.0	.0	.0	.0	.0	.0	.1	.0
5. Recpt 5	4.	.6	.0	.0	.0	.0	.0	.0	.2	.0
6. Recpt 6	198.	1.1	.0	.0	.0	.0	.0	.0	.3	.1
7. Recpt 7	210.	.5	.0	.0	.0	.0	.0	.0	.2	.0
8. Recpt 8	253.	.5	.0	.1	.0	.0	.1	.1	.0	.0
9. Recpt 9	193.	.8	.0	.0	.0	.0	.0	.0	.2	.0
10. Recpt 10	190.	.7	.0	.0	.0	.0	.0	.0	.1	.0

RECEPTOR	(PPM) I
1. Recpt 1	.4
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.3
5. Recpt 5	.2
6. Recpt 6	.3
7. Recpt 7	.0
8. Recpt 8	.0
9. Recpt 9	.4
10. Recpt 10	.4

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
One-Interchange Alternative – pm peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: SR905 and WB Siempre Viva 1 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I.  SITE VARIABLES

      U=    .5 M/S            Z0= 100. CM            ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    802   2.1     .0  10.0
B. SV EBTA      *  -150   -15     0   -15 *  AG   1395   2.1     .0  10.0
C. SV EBD       *     0   -15   150   -15 *  AG   2170   2.1     .0  10.0
D. SV WBTA      *   150     6     0     6 *  AG   1414   2.1     .0  10.0
E. SV WBRA      *   150    15     0    15 *  AG   1050   2.1     .0  10.0
F. SV WBD       *     0     6  -150     6 *  AG   1958   2.1     .0  10.0
G. 905 NBRA     *   -45  -126     0     4 *  AG    775   2.1     .0  10.0
H. 905 NBLA     *   -45  -130     0     0 *  AG    544   2.1     .0  10.0
I. 905 NBD      *     0     0    -8   148 *  AG   1852   2.1     .0  10.0

III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*----------------------
1. Recpt 1  *      5    -25   1.8
2. Recpt 2  *     25    -25   1.8
3. Recpt 3  *     45    -25   1.8
4. Recpt 4  *     -3    -45   1.8
5. Recpt 5  *    -11    -65   1.8
6. Recpt 6  *      5     25   1.8
7. Recpt 7  *     25     25   1.8
8. Recpt 8  *     45     25   1.8
9. Recpt 9  *      4     45   1.8
10. Recpt 10 *     3     65   1.8
```

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	.9	.0	.0	.2	.0	.0	.0	.0	.0
2. Recpt 2	286.	.6	.0	.2	.1	.0	.0	.2	.0	.0
3. Recpt 3	284.	.7	.0	.0	.3	.0	.0	.2	.0	.0
4. Recpt 4	1.	.7	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	4.	.6	.0	.0	.0	.0	.0	.0	.1	.0
6. Recpt 6	198.	1.2	.0	.0	.0	.0	.1	.1	.3	.2
7. Recpt 7	239.	.6	.0	.0	.0	.0	.2	.2	.0	.0
8. Recpt 8	253.	.6	.0	.1	.0	.0	.2	.2	.0	.0
9. Recpt 9	193.	.9	.0	.0	.0	.0	.0	.0	.2	.1
10. Recpt 10	190.	.9	.0	.0	.0	.0	.0	.0	.1	.0

RECEPTOR	(PPM) I
1. Recpt 1	.5
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.3
5. Recpt 5	.2
6. Recpt 6	.4
7. Recpt 7	.1
8. Recpt 8	.0
9. Recpt 9	.5
10. Recpt 10	.5

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
No Interchange Alternative – am peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: SR905 and WB Siempre Viva No Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    523   2.1     .0  10.0
B. SV EBTA      *  -150   -15     0   -15 *  AG   1392   2.1     .0  10.0
C. SV EBD       *     0   -15   150   -15 *  AG   2683   2.1     .0  10.0
D. SV WBTA      *   150     6     0     6 *  AG   1239   2.1     .0  10.0
E. SV WBRA      *   150    15     0    15 *  AG    936   2.1     .0  10.0
F. SV WBD       *     0     6  -150     6 *  AG   1693   2.1     .0  10.0
G. 905 NBRA     *   -45  -126     0     4 *  AG   1291   2.1     .0  10.0
H. 905 NBLA     *   -45  -130     0     0 *  AG    454   2.1     .0  10.0
I. 905 NBD      *     0     0    -8   148 *  AG   1459   2.1     .0  10.0

III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*----------------------
1. Recpt 1  *      5    -25   1.8
2. Recpt 2  *     25    -25   1.8
3. Recpt 3  *     45    -25   1.8
4. Recpt 4  *     -3    -45   1.8
5. Recpt 5  *    -11    -65   1.8
6. Recpt 6  *      5     25   1.8
7. Recpt 7  *     25     25   1.8
8. Recpt 8  *     45     25   1.8
9. Recpt 9  *      4     45   1.8
```

10. Recpt 10 * 3 65 1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	.9	.0	.0	.3	.0	.0	.0	.0	.0
2. Recpt 2	299.	.7	.0	.0	.3	.0	.0	.1	.0	.0
3. Recpt 3	286.	.7	.0	.0	.3	.0	.0	.1	.0	.0
4. Recpt 4	359.	.7	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	4.	.6	.0	.0	.0	.0	.0	.0	.2	.0
6. Recpt 6	198.	1.2	.0	.0	.0	.0	.0	.0	.4	.1
7. Recpt 7	210.	.6	.0	.0	.0	.1	.1	.0	.2	.0
8. Recpt 8	252.	.6	.0	.1	.0	.0	.2	.2	.0	.0
9. Recpt 9	193.	.9	.0	.0	.0	.0	.0	.0	.2	.0
10. Recpt 10	190.	.8	.0	.0	.0	.0	.0	.0	.2	.0

RECEPTOR	(PPM) I
1. Recpt 1	.4
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.3
5. Recpt 5	.2
6. Recpt 6	.3
7. Recpt 7	.0
8. Recpt 8	.0

```
 9. Recpt 9  *   .4
10. Recpt 10 *   .4
```

CALINE4 Modeling – Siempre Viva Road and SR-905 NB Interchange
No Interchange Alternative – pm peak hour

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: SR905 and WB Siempre Viva No Int pm
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide

  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=   150. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH=  100. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    763   2.1     .0  10.0
B. SV EBTA      *  -150   -15     0   -15 *  AG   1419   2.1     .0  10.0
C. SV EBD       *     0   -15   150   -15 *  AG   2394   2.1     .0  10.0
D. SV WBTA      *   150     6     0     6 *  AG   1765   2.1     .0  10.0
E. SV WBRA      *   150    15     0    15 *  AG   1187   2.1     .0  10.0
F. SV WBD       *     0     6  -150     6 *  AG   2328   2.1     .0  10.0
G. 905 NBRA     *   -45  -126     0     4 *  AG    975   2.1     .0  10.0
H. 905 NBLA     *   -45  -130     0     0 *  AG    563   2.1     .0  10.0
I. 905 NBD      *     0     0    -8   148 *  AG   1950   2.1     .0  10.0

 III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*----------------------
1. Recpt 1  *      5    -25   1.8
2. Recpt 2  *     25    -25   1.8
3. Recpt 3  *     45    -25   1.8
4. Recpt 4  *     -3    -45   1.8
5. Recpt 5  *    -11    -65   1.8
6. Recpt 6  *      5     25   1.8
7. Recpt 7  *     25     25   1.8
8. Recpt 8  *     45     25   1.8
```

9. Recpt 9	*	4	45	1.8
10. Recpt 10	*	3	65	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR905 and WB Siempre Viva No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	354.	1.0	.0	.0	.2	.0	.0	.0	.0	.0
2. Recpt 2	298.	.7	.0	.0	.3	.0	.0	.2	.0	.0
3. Recpt 3	286.	.7	.0	.0	.3	.0	.0	.2	.0	.0
4. Recpt 4	1.	.8	.0	.0	.0	.0	.0	.0	.1	.0
5. Recpt 5	4.	.7	.0	.0	.0	.0	.0	.0	.2	.1
6. Recpt 6	198.	1.3	.0	.0	.0	.0	.1	.1	.3	.2
7. Recpt 7	238.	.7	.0	.0	.0	.0	.2	.2	.0	.0
8. Recpt 8	252.	.7	.0	.1	.0	.0	.2	.2	.0	.0
9. Recpt 9	193.	1.0	.0	.0	.0	.0	.0	.1	.2	.1
10. Recpt 10	190.	.9	.0	.0	.0	.0	.0	.0	.1	.0

RECEPTOR	(PPM) I
1. Recpt 1	.5
2. Recpt 2	.0
3. Recpt 3	.0
4. Recpt 4	.4
5. Recpt 5	.2
6. Recpt 6	.4
7. Recpt 7	.1

```
 8. Recpt 8  *   .0
 9. Recpt 9  *   .5
10. Recpt 10 *   .5
```

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
No Build – am peak hour

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Paseo de las Americas & Siempre Viva No
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=   150. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH=  100. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
 A. SV EBLA1     *  -142   -21  -105     0 *  AG    279   2.1     .0  10.0
 B. SV EBLA2     *  -105     0     0     0 *  AG    279   2.1     .0  10.0
 C. SV EBTA1     *  -142   -25  -105    -4 *  AG   1782   2.1     .0  10.0
 D. SV EBTA2     *  -105    -4     0    -4 *  AG   1782   2.1     .0  10.0
 E. SV EBRA1     *  -142   -27  -105    -6 *  AG    546   2.1     .0  10.0
 F. SV EBRA2     *  -105    -6     0    -6 *  AG    546   2.1     .0  10.0
 G. SV EBD       *     0    -4   150    -4 *  AG   2039   2.1     .0  10.0
 H. SV WBLA      *   150     0     0     0 *  AG    329   2.1     .0  10.0
 I. SV WBTA      *   150     4     0     4 *  AG   1690   2.1     .0  10.0
 J. SV WBRA      *   150     6     0     6 *  AG    150   2.1     .0  10.0
 K. SV WBD1      *     0     4  -105     4 *  AG   2111   2.1     .0  10.0
 L. SV WBD2      *  -105     4  -142   -17 *  AG   2111   2.1     .0  10.0
 M. PDLA NBLA    *     0  -150     0     0 *  AG    318   2.1     .0  10.0
 N. PDLA NBTA    *     4  -150     4     0 *  AG    100   2.1     .0  10.0
 O. PDLA NBRA    *     6  -150     6     0 *  AG    159   2.1     .0  10.0
 P. PDLA NBD     *     4     0     4   150 *  AG    529   2.1     .0  10.0
 Q. PDLA SBLA    *     0   150     0     0 *  AG     98   2.1     .0  10.0
 R. PDLA SBTA    *    -4   150    -4     0 *  AG    184   2.1     .0  10.0
```

S.	PDLA SBRA	*	-6	150	-6	0	*	AG	103	2.1	.0	10.0
T.	PDLA SBD	*	-4	0	-4	-150	*	AG	1059	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva No
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva No
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	79.	.8	.0	.0	.0	.0	.0	.0	.3	.0
2. Recpt 2	79.	.8	.0	.0	.0	.0	.0	.0	.3	.0
3. Recpt 3	79.	.8	.0	.0	.0	.1	.0	.0	.2	.0
4. Recpt 4	70.	.5	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	14.	.5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	100.	.8	.0	.0	.0	.0	.0	.0	.2	.0
7. Recpt 7	99.	.8	.0	.0	.0	.0	.0	.0	.2	.0
8. Recpt 8	249.	.9	.0	.0	.2	.1	.0	.0	.0	.0
9. Recpt 9	171.	.6	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	172.	.5	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.9	.0	.0	.0	.3	.0	.1	.0	.0
12. Recpt 12	280.	.8	.0	.0	.0	.3	.0	.0	.0	.0
13. Recpt 13	279.	.8	.0	.0	.0	.2	.0	.0	.2	.0
14. Recpt 14	293.	.5	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	302.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.9	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	.9	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	.8	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	189.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva No
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. Recpt 2	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
6. Recpt 6	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
11. Recpt 11	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
No Build – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Paseo de las Americas & Siempre Viva Np
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA1	-142	-21	-105	0	AG	113	2.1	.0	10.0
B. SV EBLA2	-105	0	0	0	AG	113	2.1	.0	10.0
C. SV EBTA1	-142	-25	-105	-4	AG	1858	2.1	.0	10.0
D. SV EBTA2	-105	-4	0	-4	AG	1858	2.1	.0	10.0
E. SV EBRA1	-142	-27	-105	-6	AG	350	2.1	.0	10.0
F. SV EBRA2	-105	-6	0	-6	AG	350	2.1	.0	10.0
G. SV EBD	0	-4	150	-4	AG	2385	2.1	.0	10.0
H. SV WBLA	150	0	0	0	AG	176	2.1	.0	10.0
I. SV WBTA	150	4	0	4	AG	1954	2.1	.0	10.0
J. SV WBRA	150	6	0	6	AG	107	2.1	.0	10.0
K. SV WBD1	0	4	-105	4	AG	2861	2.1	.0	10.0
L. SV WBD2	-105	4	-142	-17	AG	2861	2.1	.0	10.0
M. PDLA NBLA	0	-150	0	0	AG	601	2.1	.0	10.0
N. PDLA NBTA	4	-150	4	0	AG	202	2.1	.0	10.0
O. PDLA NBRA	6	-150	6	0	AG	361	2.1	.0	10.0
P. PDLA NBD	4	0	4	150	AG	422	2.1	.0	10.0
Q. PDLA SBLA	0	150	0	0	AG	166	2.1	.0	10.0
R. PDLA SBTA	-4	150	-4	0	AG	111	2.1	.0	10.0
S. PDLA SBRA	-6	150	-6	0	AG	306	2.1	.0	10.0
T. PDLA SBD	-4	0	-4	-150	AG	637	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva Np
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva Np
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	79.	.8	.0	.0	.0	.0	.0	.0	.4	.0
2. Recpt 2	79.	.8	.0	.0	.0	.0	.0	.0	.3	.0
3. Recpt 3	80.	.8	.0	.0	.0	.1	.0	.0	.2	.0
4. Recpt 4	70.	.5	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	21.	.5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	100.	.8	.0	.0	.0	.0	.0	.0	.3	.0
7. Recpt 7	100.	.8	.0	.0	.0	.0	.0	.0	.3	.0
8. Recpt 8	249.	1.0	.0	.0	.2	.1	.0	.0	.0	.0
9. Recpt 9	170.	.6	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	171.	.5	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	282.	.9	.0	.0	.0	.3	.0	.0	.0	.0
12. Recpt 12	281.	.9	.0	.0	.0	.3	.0	.0	.1	.0
13. Recpt 13	280.	.9	.0	.0	.0	.2	.0	.0	.2	.0
14. Recpt 14	293.	.5	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	338.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.9	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	.9	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	.9	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.6	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	187.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva Np
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	*	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.3	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	*	.0	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	.1	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
Two-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Paseo de las Americas & Siempre Viva 2am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM            ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA1	-142	-21	-105	0	AG	254	2.1	.0	10.0
B. SV EBLA2	-105	0	0	0	AG	254	2.1	.0	10.0
C. SV EBTA1	-142	-25	-105	-4	AG	1581	2.1	.0	10.0
D. SV EBTA2	-105	-4	0	-4	AG	1581	2.1	.0	10.0
E. SV EBRA1	-142	-27	-105	-6	AG	388	2.1	.0	10.0
F. SV EBRA2	-105	-6	0	-6	AG	388	2.1	.0	10.0
G. SV EBD	0	-4	150	-4	AG	1773	2.1	.0	10.0
H. SV WBLA	150	0	0	0	AG	223	2.1	.0	10.0
I. SV WBTA	150	4	0	4	AG	1332	2.1	.0	10.0
J. SV WBRA	150	6	0	6	AG	129	2.1	.0	10.0
K. SV WBD1	0	4	-105	4	AG	1652	2.1	.0	10.0
L. SV WBD2	-105	4	-142	-17	AG	1652	2.1	.0	10.0
M. PDLA NBLA	0	-150	0	0	AG	226	2.1	.0	10.0
N. PDLA NBTA	4	-150	4	0	AG	77	2.1	.0	10.0
O. PDLA NBRA	6	-150	6	0	AG	108	2.1	.0	10.0
P. PDLA NBD	4	0	4	150	AG	460	2.1	.0	10.0
Q. PDLA SBLA	0	150	0	0	AG	84	2.1	.0	10.0
R. PDLA SBTA	-4	150	-4	0	AG	141	2.1	.0	10.0
S. PDLA SBRA	-6	150	-6	0	AG	94	2.1	.0	10.0
T. PDLA SBD	-4	0	-4	-150	AG	752	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva 2am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva 2am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	79.	.7	.0	.0	.0	.0	.0	.0	.3	.0
2. Recpt 2	79.	.6	.0	.0	.0	.0	.0	.0	.3	.0
3. Recpt 3	80.	.7	.0	.0	.0	.0	.0	.0	.2	.0
4. Recpt 4	70.	.4	.0	.0	.0	.0	.0	.0	.1	.0
5. Recpt 5	12.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	100.	.7	.0	.0	.0	.0	.0	.0	.2	.0
7. Recpt 7	99.	.7	.0	.0	.0	.0	.0	.0	.2	.0
8. Recpt 8	249.	.8	.0	.0	.1	.1	.0	.0	.0	.0
9. Recpt 9	171.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	172.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.8	.0	.0	.0	.3	.0	.1	.0	.0
12. Recpt 12	280.	.7	.0	.0	.0	.2	.0	.0	.0	.0
13. Recpt 13	279.	.7	.0	.0	.0	.2	.0	.0	.2	.0
14. Recpt 14	293.	.4	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	301.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.8	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	.7	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	.7	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	189.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva 2am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
Two-Interchange Alternative – pm peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Paseo de las Americas & Siempre Viva 2pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA1	-142	-21	-105	0	AG	103	2.1	.0	10.0
B. SV EBLA2	-105	0	0	0	AG	103	2.1	.0	10.0
C. SV EBTA1	-142	-25	-105	-4	AG	1627	2.1	.0	10.0
D. SV EBTA2	-105	-4	0	-4	AG	1627	2.1	.0	10.0
E. SV EBRA1	-142	-27	-105	-6	AG	249	2.1	.0	10.0
F. SV EBRA2	-105	-6	0	-6	AG	249	2.1	.0	10.0
G. SV EBD	0	-4	150	-4	AG	2014	2.1	.0	10.0
H. SV WBLA	150	0	0	0	AG	119	2.1	.0	10.0
I. SV WBTA	150	4	0	4	AG	1540	2.1	.0	10.0
J. SV WBRA	150	6	0	6	AG	92	2.1	.0	10.0
K. SV WBD1	0	4	-105	4	AG	2246	2.1	.0	10.0
L. SV WBD2	-105	4	-142	-17	AG	2246	2.1	.0	10.0
M. PDLA NBLA	0	-150	0	0	AG	427	2.1	.0	10.0
N. PDLA NBTA	4	-150	4	0	AG	155	2.1	.0	10.0
O. PDLA NBRA	6	-150	6	0	AG	245	2.1	.0	10.0
P. PDLA NBD	4	0	4	150	AG	350	2.1	.0	10.0
Q. PDLA SBLA	0	150	0	0	AG	142	2.1	.0	10.0
R. PDLA SBTA	-4	150	-4	0	AG	85	2.1	.0	10.0
S. PDLA SBRA	-6	150	-6	0	AG	279	2.1	.0	10.0
T. PDLA SBD	-4	0	-4	-150	AG	453	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva 2pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva 2pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	79.	.7	.0	.0	.0	.0	.0	.0	.3	.0
2. Recpt 2	79.	.7	.0	.0	.0	.0	.0	.0	.3	.0
3. Recpt 3	80.	.7	.0	.0	.0	.0	.0	.0	.2	.0
4. Recpt 4	70.	.4	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	100.	.7	.0	.0	.0	.0	.0	.0	.2	.0
7. Recpt 7	100.	.7	.0	.0	.0	.0	.0	.0	.2	.0
8. Recpt 8	249.	.8	.0	.0	.1	.1	.0	.0	.0	.0
9. Recpt 9	170.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	171.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	282.	.8	.0	.0	.0	.3	.0	.0	.0	.0
12. Recpt 12	281.	.7	.0	.0	.0	.2	.0	.0	.1	.0
13. Recpt 13	280.	.7	.0	.0	.0	.1	.0	.0	.2	.0
14. Recpt 14	293.	.4	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	342.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.8	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	.8	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	.7	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	187.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva 2pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
One-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Paseo de las Americas & Siempre Viva 1am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. SV EBLA1     *  -142   -21  -105     0 *  AG    289   2.1     .0  10.0
B. SV EBLA2     *  -105     0     0     0 *  AG    289   2.1     .0  10.0
C. SV EBTA1     *  -142   -25  -105    -4 *  AG   1745   2.1     .0  10.0
D. SV EBTA2     *  -105    -4     0    -4 *  AG   1745   2.1     .0  10.0
E. SV EBRA1     *  -142   -27  -105    -6 *  AG    423   2.1     .0  10.0
F. SV EBRA2     *  -105    -6     0    -6 *  AG    423   2.1     .0  10.0
G. SV EBD       *     0    -4   150    -4 *  AG   1960   2.1     .0  10.0
H. SV WBLA      *   150     0     0     0 *  AG    243   2.1     .0  10.0
I. SV WBTA      *   150     4     0     4 *  AG   1489   2.1     .0  10.0
J. SV WBRA      *   150     6     0     6 *  AG    147   2.1     .0  10.0
K. SV WBD1      *     0     4  -105     4 *  AG   1842   2.1     .0  10.0
L. SV WBD2      *  -105     4  -142   -17 *  AG   1842   2.1     .0  10.0
M. PDLA NBLA    *     0  -150     0     0 *  AG    246   2.1     .0  10.0
N. PDLA NBTA    *     4  -150     4     0 *  AG     86   2.1     .0  10.0
O. PDLA NBRA    *     6  -150     6     0 *  AG    118   2.1     .0  10.0
P. PDLA NBD     *     4     0     4   150 *  AG    522   2.1     .0  10.0
Q. PDLA SBLA    *     0   150     0     0 *  AG     96   2.1     .0  10.0
R. PDLA SBTA    *    -4   150    -4     0 *  AG    157   2.1     .0  10.0
S. PDLA SBRA    *    -6   150    -6     0 *  AG    107   2.1     .0  10.0
T. PDLA SBD     *    -4     0    -4  -150 *  AG    823   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva 1am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva 1am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	79.	.7	.0	.0	.0	.0	.0	.0	.3	.0
2. Recpt 2	79.	.7	.0	.0	.0	.0	.0	.0	.3	.0
3. Recpt 3	80.	.7	.0	.0	.0	.1	.0	.0	.2	.0
4. Recpt 4	70.	.4	.0	.0	.0	.0	.0	.0	.1	.0
5. Recpt 5	12.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	100.	.7	.0	.0	.0	.0	.0	.0	.2	.0
7. Recpt 7	99.	.7	.0	.0	.0	.0	.0	.0	.2	.0
8. Recpt 8	249.	.8	.0	.0	.1	.1	.0	.0	.0	.0
9. Recpt 9	171.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	172.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.8	.0	.0	.0	.3	.0	.1	.0	.0
12. Recpt 12	280.	.8	.0	.0	.0	.3	.0	.0	.0	.0
13. Recpt 13	279.	.8	.0	.0	.0	.2	.0	.0	.2	.0
14. Recpt 14	293.	.5	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	302.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.8	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	.8	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	.8	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	189.	.4	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva 1am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
One-Interchange Alternative – pm peak hour

```
CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Paseo de las Americas & Siempre Viva 1pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM            ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA1	-142	-21	-105	0	AG	117	2.1	.0	10.0
B. SV EBLA2	-105	0	0	0	AG	117	2.1	.0	10.0
C. SV EBTA1	-142	-25	-105	-4	AG	1800	2.1	.0	10.0
D. SV EBTA2	-105	-4	0	-4	AG	1800	2.1	.0	10.0
E. SV EBRA1	-142	-27	-105	-6	AG	272	2.1	.0	10.0
F. SV EBRA2	-105	-6	0	-6	AG	272	2.1	.0	10.0
G. SV EBD	0	-4	150	-4	AG	2230	2.1	.0	10.0
H. SV WBLA	150	0	0	0	AG	130	2.1	.0	10.0
I. SV WBTA	150	4	0	4	AG	1721	2.1	.0	10.0
J. SV WBRA	150	6	0	6	AG	105	2.1	.0	10.0
K. SV WBD1	0	4	-105	4	AG	2504	2.1	.0	10.0
L. SV WBD2	-105	4	-142	-17	AG	2504	2.1	.0	10.0
M. PDLA NBLA	0	-150	0	0	AG	466	2.1	.0	10.0
N. PDLA NBTA	4	-150	4	0	AG	172	2.1	.0	10.0
O. PDLA NBRA	6	-150	6	0	AG	268	2.1	.0	10.0
P. PDLA NBD	4	0	4	150	AG	397	2.1	.0	10.0
Q. PDLA SBLA	0	150	0	0	AG	162	2.1	.0	10.0
R. PDLA SBTA	-4	150	-4	0	AG	94	2.1	.0	10.0
S. PDLA SBRA	-6	150	-6	0	AG	317	2.1	.0	10.0
T. PDLA SBD	-4	0	-4	-150	AG	496	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva 1pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva 1pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	79.	.7	.0	.0	.0	.0	.0	.0	.4	.0
2. Recpt 2	79.	.7	.0	.0	.0	.0	.0	.0	.3	.0
3. Recpt 3	80.	.7	.0	.0	.0	.1	.0	.0	.2	.0
4. Recpt 4	70.	.5	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	100.	.8	.0	.0	.0	.0	.0	.0	.3	.0
7. Recpt 7	100.	.8	.0	.0	.0	.0	.0	.0	.3	.0
8. Recpt 8	249.	.9	.0	.0	.2	.1	.0	.0	.0	.0
9. Recpt 9	170.	.5	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	171.	.5	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	282.	.8	.0	.0	.0	.3	.0	.0	.0	.0
12. Recpt 12	281.	.8	.0	.0	.0	.3	.0	.0	.1	.0
13. Recpt 13	280.	.8	.0	.0	.0	.2	.0	.0	.2	.0
14. Recpt 14	293.	.5	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	342.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.9	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	.8	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	.8	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.5	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	187.	.5	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva 1pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.3	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	.1	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
No Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Paseo de las Americas & Siempre Viva Noa
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM          ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA1	*	-142	-21	-105	0	*	AG	327	2.1	.0	10.0
B. SV EBLA2	*	-105	0	0	0	*	AG	327	2.1	.0	10.0
C. SV EBTA1	*	-142	-25	-105	-4	*	AG	2429	2.1	.0	10.0
D. SV EBTA2	*	-105	-4	0	-4	*	AG	2429	2.1	.0	10.0
E. SV EBRA1	*	-142	-27	-105	-6	*	AG	664	2.1	.0	10.0
F. SV EBRA2	*	-105	-6	0	-6	*	AG	664	2.1	.0	10.0
G. SV EBD	*	0	-4	150	-4	*	AG	2768	2.1	.0	10.0
H. SV WBLA	*	150	0	0	0	*	AG	435	2.1	.0	10.0
I. SV WBTA	*	150	4	0	4	*	AG	2303	2.1	.0	10.0
J. SV WBRA	*	150	6	0	6	*	AG	197	2.1	.0	10.0
K. SV WBD1	*	0	4	-105	4	*	AG	2811	2.1	.0	10.0
L. SV WBD2	*	-105	4	-142	-17	*	AG	2811	2.1	.0	10.0
M. PDLA NBLA	*	0	-150	0	0	*	AG	387	2.1	.0	10.0
N. PDLA NBTA	*	4	-150	4	0	*	AG	116	2.1	.0	10.0
O. PDLA NBRA	*	6	-150	6	0	*	AG	211	2.1	.0	10.0
P. PDLA NBD	*	4	0	4	150	*	AG	640	2.1	.0	10.0
Q. PDLA SBLA	*	0	150	0	0	*	AG	128	2.1	.0	10.0
R. PDLA SBTA	*	-4	150	-4	0	*	AG	213	2.1	.0	10.0
S. PDLA SBRA	*	-6	150	-6	0	*	AG	121	2.1	.0	10.0
T. PDLA SBD	*	-4	0	-4	-150	*	AG	1312	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva Noa
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva Noa
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	79.	1.0	.0	.0	.0	.0	.0	.0	.4	.0
2. Recpt 2	79.	.9	.0	.0	.0	.0	.0	.0	.4	.0
3. Recpt 3	79.	1.0	.0	.0	.0	.2	.0	.0	.2	.0
4. Recpt 4	70.	.6	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	14.	.6	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	100.	1.0	.0	.0	.0	.0	.0	.0	.3	.0
7. Recpt 7	253.	1.1	.0	.0	.1	.2	.0	.0	.0	.0
8. Recpt 8	249.	1.1	.0	.0	.2	.2	.0	.0	.0	.0
9. Recpt 9	171.	.7	.0	.0	.0	.1	.0	.0	.0	.0
10. Recpt 10	172.	.6	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	282.	1.1	.0	.0	.0	.4	.0	.2	.0	.0
12. Recpt 12	280.	1.0	.0	.0	.0	.3	.0	.1	.1	.0
13. Recpt 13	279.	1.0	.0	.0	.0	.2	.0	.0	.2	.0
14. Recpt 14	293.	.6	.0	.0	.0	.2	.0	.0	.0	.0
15. Recpt 15	302.	.5	.0	.0	.0	.1	.0	.0	.0	.0
16. Recpt 16	258.	1.1	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	1.0	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	1.0	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.7	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	189.	.6	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva Noa
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
2. Recpt 2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2
6. Recpt 6	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.4	.1	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
10. Recpt 10	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.2
11. Recpt 11	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.1
15. Recpt 15	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1
16. Recpt 16	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.1	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2

CALINE4 Modeling – Siempre Viva Road and Paseo de las Americas
No Interchange Alternative – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Paseo de las Americas & Siempre Viva Nop
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA1     *  -142   -21  -105     0 *  AG    133   2.1     .0  10.0
B. SV EBLA2     *  -105     0     0     0 *  AG    133   2.1     .0  10.0
C. SV EBTA1     *  -142   -25  -105    -4 *  AG   2533   2.1     .0  10.0
D. SV EBTA2     *  -105    -4     0    -4 *  AG   2533   2.1     .0  10.0
E. SV EBRA1     *  -142   -27  -105    -6 *  AG    426   2.1     .0  10.0
F. SV EBRA2     *  -105    -6     0    -6 *  AG    426   2.1     .0  10.0
G. SV EBD       *     0    -4   150    -4 *  AG   3228   2.1     .0  10.0
H. SV WBLA      *   150     0     0     0 *  AG    232   2.1     .0  10.0
I. SV WBTA      *   150     4     0     4 *  AG   2662   2.1     .0  10.0
J. SV WBRA      *   150     6     0     6 *  AG    141   2.1     .0  10.0
K. SV WBD1      *     0     4  -105     4 *  AG   3753   2.1     .0  10.0
L. SV WBD2      *  -105     4  -142   -17 *  AG   3753   2.1     .0  10.0
M. PDLA NBLA    *     0  -150     0     0 *  AG    731   2.1     .0  10.0
N. PDLA NBTA    *     4  -150     4     0 *  AG    234   2.1     .0  10.0
O. PDLA NBRA    *     6  -150     6     0 *  AG    478   2.1     .0  10.0
P. PDLA NBD     *     4     0     4   150 *  AG    508   2.1     .0  10.0
Q. PDLA SBLA    *     0   150     0     0 *  AG    217   2.1     .0  10.0
R. PDLA SBTA    *    -4   150    -4     0 *  AG    129   2.1     .0  10.0
S. PDLA SBRA    *    -6   150    -6     0 *  AG    360   2.1     .0  10.0
T. PDLA SBD     *    -4     0    -4  -150 *  AG    787   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Paseo de las Americas & Siempre Viva Nop
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-14	-16	1.8
2. Recpt 2	-34	-16	1.8
3. Recpt 3	-54	-16	1.8
4. Recpt 4	-14	-36	1.8
5. Recpt 5	-14	-56	1.8
6. Recpt 6	-16	14	1.8
7. Recpt 7	-36	14	1.8
8. Recpt 8	-56	14	1.8
9. Recpt 9	-16	34	1.8
10. Recpt 10	-16	54	1.8
11. Recpt 11	16	-14	1.8
12. Recpt 12	36	-14	1.8
13. Recpt 13	56	-14	1.8
14. Recpt 14	16	-34	1.8
15. Recpt 15	16	-54	1.8
16. Recpt 16	14	16	1.8
17. Recpt 17	34	16	1.8
18. Recpt 18	54	16	1.8
19. Recpt 19	14	36	1.8
20. Recpt 20	14	56	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Paseo de las Americas & Siempre Viva Nop
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	78.	1.0	.0	.0	.0	.0	.0	.0	.5	.0
2. Recpt 2	79.	1.0	.0	.0	.0	.0	.0	.0	.4	.0
3. Recpt 3	80.	1.0	.0	.0	.0	.1	.0	.0	.3	.0
4. Recpt 4	70.	.6	.0	.0	.0	.0	.0	.0	.2	.0
5. Recpt 5	21.	.6	.0	.0	.0	.0	.0	.0	.1	.0
6. Recpt 6	100.	1.0	.0	.0	.0	.0	.0	.0	.3	.0
7. Recpt 7	102.	1.0	.0	.0	.0	.0	.0	.0	.4	.0
8. Recpt 8	249.	1.2	.0	.0	.2	.2	.0	.0	.0	.0
9. Recpt 9	170.	.7	.0	.0	.0	.1	.0	.0	.0	.0
10. Recpt 10	171.	.7	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	282.	1.2	.0	.0	.0	.4	.0	.1	.0	.0
12. Recpt 12	281.	1.1	.0	.0	.0	.3	.0	.0	.2	.0
13. Recpt 13	280.	1.1	.0	.0	.0	.2	.0	.0	.3	.0
14. Recpt 14	293.	.7	.0	.0	.0	.2	.0	.0	.0	.0
15. Recpt 15	337.	.6	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	1.2	.0	.0	.0	.2	.0	.0	.0	.0
17. Recpt 17	259.	1.1	.0	.0	.0	.2	.0	.0	.0	.0
18. Recpt 18	260.	1.1	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	250.	.7	.0	.0	.0	.1	.0	.0	.0	.0
20. Recpt 20	187.	.6	.0	.0	.0	.0	.0	.0	.1	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Paseo de las Americas & Siempre Viva Nop
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1
6. Recpt 6	*	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.3	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.6	.2	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.0	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	*	.0	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	*	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	*	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	*	.1	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	*	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	*	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
No Build – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi No Build a
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    273   2.1     .0  10.0
B. SV EBTA      *  -150    -6     0    -6 *  AG   1082   2.1     .0  10.0
C. SV EBRA      *  -150    -8     0    -8 *  AG    253   2.1     .0  10.0
D. SV EBD       *     0    -6   150    -6 *  AG   1372   2.1     .0  10.0
E. SV WBLA      *   150     0     0     0 *  AG     62   2.1     .0  10.0
F. SV WBTA      *   150     6     0     6 *  AG    953   2.1     .0  10.0
G. SV WBRA      *   150     8     0     8 *  AG    132   2.1     .0  10.0
H. SV WBD       *     0     6  -150     6 *  AG   1333   2.1     .0  10.0
I. EF NBLA      *     0  -150     0     0 *  AG    105   2.1     .0  10.0
J. EF NBTA      *     6  -150     6     0 *  AG     77   2.1     .0  10.0
K. EF NBRA      *     8  -150     8     0 *  AG     28   2.1     .0  10.0
L. EF NBD       *     6     0     6   150 *  AG    482   2.1     .0  10.0
M. EF SBLA      *     0   150     0     0 *  AG    160   2.1     .0  10.0
N. EF SBTA      *    -6   150    -6     0 *  AG    346   2.1     .0  10.0
O. EF SBRA      *    -8   150    -8     0 *  AG    290   2.1     .0  10.0
P. EF SBD       *    -6     0    -6  -150 *  AG    729   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi No Build a
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi No Build a
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	9.	.5	.0	.1	.0	.0	.0	.0	.0	.0
2. Recpt 2	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	8.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	78.	.5	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	79.	.5	.0	.0	.0	.1	.0	.1	.0	.0
6. Recpt 6	101.	.5	.0	.0	.0	.2	.0	.2	.0	.0
7. Recpt 7	101.	.5	.0	.0	.0	.2	.0	.1	.0	.0
8. Recpt 8	100.	.5	.0	.0	.0	.2	.0	.0	.0	.2
9. Recpt 9	170.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	171.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.6	.0	.2	.0	.0	.0	.0	.0	.2
12. Recpt 12	279.	.6	.0	.2	.0	.0	.0	.0	.0	.1
13. Recpt 13	279.	.6	.0	.1	.0	.1	.0	.0	.0	.2
14. Recpt 14	350.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	351.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.6	.0	.1	.0	.0	.0	.0	.0	.2
17. Recpt 17	249.	.4	.0	.0	.0	.0	.0	.0	.0	.1
18. Recpt 18	195.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	259.	.5	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	260.	.5	.0	.1	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi No Build a
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
No Build – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi No Build a
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
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I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA	-150	0	0	0	AG	302	2.1	.0	10.0
B. SV EBTA	-150	-6	0	-6	AG	1049	2.1	.0	10.0
C. SV EBRA	-150	-8	0	-8	AG	207	2.1	.0	10.0
D. SV EBD	0	-6	150	-6	AG	1263	2.1	.0	10.0
E. SV WBLA	150	0	0	0	AG	31	2.1	.0	10.0
F. SV WBTA	150	6	0	6	AG	1190	2.1	.0	10.0
G. SV WBRA	150	8	0	8	AG	289	2.1	.0	10.0
H. SV WBD	0	6	-150	6	AG	1762	2.1	.0	10.0
I. EF NBLA	0	-150	0	0	AG	278	2.1	.0	10.0
J. EF NBTA	6	-150	6	0	AG	139	2.1	.0	10.0
K. EF NBRA	8	-150	8	0	AG	68	2.1	.0	10.0
L. EF NBD	6	0	6	150	AG	730	2.1	.0	10.0
M. EF SBLA	0	150	0	0	AG	146	2.1	.0	10.0
N. EF SBTA	-6	150	-6	0	AG	85	2.1	.0	10.0
O. EF SBRA	-8	150	-8	0	AG	294	2.1	.0	10.0
P. EF SBD	-6	0	-6	-150	AG	323	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi No Build a
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi No Build a
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	78.	.5	.0	.0	.0	.2	.0	.1	.0	.0
2. Recpt 2	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	78.	.5	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	79.	.5	.0	.0	.0	.1	.0	.1	.0	.0
6. Recpt 6	100.	.6	.0	.0	.0	.1	.0	.3	.0	.0
7. Recpt 7	100.	.6	.0	.0	.0	.2	.0	.2	.0	.0
8. Recpt 8	99.	.6	.0	.0	.0	.2	.0	.1	.0	.2
9. Recpt 9	168.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	170.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.6	.0	.2	.0	.0	.0	.0	.0	.2
12. Recpt 12	280.	.6	.0	.2	.0	.0	.0	.0	.0	.2
13. Recpt 13	279.	.6	.0	.1	.0	.1	.0	.0	.0	.2
14. Recpt 14	350.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	351.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.6	.0	.1	.0	.0	.0	.0	.0	.3
17. Recpt 17	249.	.4	.0	.0	.0	.0	.0	.0	.0	.1
18. Recpt 18	195.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	259.	.6	.0	.1	.0	.0	.0	.0	.0	.3
20. Recpt 20	260.	.6	.0	.1	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi No Build a
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.1	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.1	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
Two-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi 2 Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    332   2.1     .0  10.0
B. SV EBTA      *  -150    -6     0    -6 *  AG    869   2.1     .0  10.0
C. SV EBRA      *  -150    -8     0    -8 *  AG    249   2.1     .0  10.0
D. SV EBD       *     0    -6   150    -6 *  AG   1124   2.1     .0  10.0
E. SV WBLA      *   150     0     0     0 *  AG     57   2.1     .0  10.0
F. SV WBTA      *   150     6     0     6 *  AG    688   2.1     .0  10.0
G. SV WBRA      *   150     8     0     8 *  AG    115   2.1     .0  10.0
H. SV WBD       *     0     6  -150     6 *  AG   1040   2.1     .0  10.0
I. EF NBLA      *     0  -150     0     0 *  AG    102   2.1     .0  10.0
J. EF NBTA      *     6  -150     6     0 *  AG     97   2.1     .0  10.0
K. EF NBRA      *     8  -150     8     0 *  AG     26   2.1     .0  10.0
L. EF NBD       *     6     0     6   150 *  AG    544   2.1     .0  10.0
M. EF SBLA      *     0   150     0     0 *  AG    229   2.1     .0  10.0
N. EF SBTA      *    -6   150    -6     0 *  AG    158   2.1     .0  10.0
O. EF SBRA      *    -8   150    -8     0 *  AG    250   2.1     .0  10.0
P. EF SBD       *    -6     0    -6  -150 *  AG    464   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	10.	.4	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	9.	.3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	79.	.4	.0	.0	.0	.2	.0	.0	.0	.0
5. Recpt 5	79.	.4	.0	.0	.0	.1	.0	.0	.0	.0
6. Recpt 6	101.	.4	.0	.0	.0	.1	.0	.2	.0	.0
7. Recpt 7	101.	.4	.0	.0	.0	.1	.0	.1	.0	.0
8. Recpt 8	100.	.4	.0	.0	.0	.1	.0	.0	.0	.1
9. Recpt 9	170.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	171.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	280.	.5	.0	.2	.0	.0	.0	.0	.0	.1
12. Recpt 12	279.	.5	.0	.2	.0	.0	.0	.0	.0	.1
13. Recpt 13	278.	.5	.0	.1	.0	.1	.0	.0	.0	.1
14. Recpt 14	350.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	351.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.5	.0	.1	.0	.0	.0	.0	.0	.2
17. Recpt 17	249.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	198.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	259.	.5	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	260.	.5	.0	.1	.0	.0	.0	.0	.0	.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi 2 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.1	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
Two-Interchange Alternative - pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi 2 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA	*	-150	0	0	0	*	AG	356	2.1	.0	10.0
B. SV EBTA	*	-150	-6	0	-6	*	AG	838	2.1	.0	10.0
C. SV EBRA	*	-150	-8	0	-8	*	AG	200	2.1	.0	10.0
D. SV EBD	*	0	-6	150	-6	*	AG	1028	2.1	.0	10.0
E. SV WBLA	*	150	0	0	0	*	AG	29	2.1	.0	10.0
F. SV WBTA	*	150	6	0	6	*	AG	859	2.1	.0	10.0
G. SV WBRA	*	150	8	0	8	*	AG	252	2.1	.0	10.0
H. SV WBD	*	0	6	-150	6	*	AG	1395	2.1	.0	10.0
I. EF NBLA	*	0	-150	0	0	*	AG	268	2.1	.0	10.0
J. EF NBTA	*	6	-150	6	0	*	AG	174	2.1	.0	10.0
K. EF NBRA	*	8	-150	8	0	*	AG	63	2.1	.0	10.0
L. EF NBD	*	6	0	6	150	*	AG	782	2.1	.0	10.0
M. EF SBLA	*	0	150	0	0	*	AG	127	2.1	.0	10.0
N. EF SBTA	*	-6	150	-6	0	*	AG	107	2.1	.0	10.0
O. EF SBRA	*	-8	150	-8	0	*	AG	268	2.1	.0	10.0
P. EF SBD	*	-6	0	-6	-150	*	AG	336	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	11.	.5	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	78.	.4	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	78.	.4	.0	.0	.0	.0	.0	.1	.0	.0
6. Recpt 6	100.	.5	.0	.0	.0	.1	.0	.2	.0	.0
7. Recpt 7	100.	.5	.0	.0	.0	.1	.0	.1	.0	.0
8. Recpt 8	100.	.5	.0	.0	.0	.1	.0	.0	.0	.2
9. Recpt 9	168.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	170.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.5	.0	.2	.0	.0	.0	.0	.0	.2
12. Recpt 12	280.	.5	.0	.1	.0	.0	.0	.0	.0	.2
13. Recpt 13	279.	.5	.0	.1	.0	.1	.0	.0	.0	.2
14. Recpt 14	350.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	351.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.6	.0	.0	.0	.0	.0	.0	.0	.2
17. Recpt 17	249.	.4	.0	.0	.0	.0	.0	.0	.0	.1
18. Recpt 18	195.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	259.	.5	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	260.	.5	.0	.1	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi 2 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.1	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.1	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.1	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.1	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
One-Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi 1 Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    268   2.1     .0  10.0
B. SV EBTA      *  -150    -6     0    -6 *  AG   1004   2.1     .0  10.0
C. SV EBRA      *  -150    -8     0    -8 *  AG    271   2.1     .0  10.0
D. SV EBD       *     0    -6   150    -6 *  AG   1269   2.1     .0  10.0
E. SV WBLA      *   150     0     0     0 *  AG     60   2.1     .0  10.0
F. SV WBTA      *   150     6     0     6 *  AG    729   2.1     .0  10.0
G. SV WBRA      *   150     8     0     8 *  AG    120   2.1     .0  10.0
H. SV WBD       *     0     6  -150     6 *  AG   1117   2.1     .0  10.0
I. EF NBLA      *     0  -150     0     0 *  AG    113   2.1     .0  10.0
J. EF NBTA      *     6  -150     6     0 *  AG    106   2.1     .0  10.0
K. EF NBRA      *     8  -150     8     0 *  AG     27   2.1     .0  10.0
L. EF NBD       *     6     0     6   150 *  AG    494   2.1     .0  10.0
M. EF SBLA      *     0   150     0     0 *  AG    238   2.1     .0  10.0
N. EF SBTA      *    -6   150    -6     0 *  AG    173   2.1     .0  10.0
O. EF SBRA      *    -8   150    -8     0 *  AG    275   2.1     .0  10.0
P. EF SBD       *    -6     0    -6  -150 *  AG    504   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	10.	.5	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	8.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	79.	.4	.0	.0	.0	.2	.0	.0	.0	.0
5. Recpt 5	79.	.4	.0	.0	.0	.1	.0	.0	.0	.0
6. Recpt 6	101.	.5	.0	.0	.0	.1	.0	.2	.0	.0
7. Recpt 7	101.	.5	.0	.0	.0	.2	.0	.1	.0	.0
8. Recpt 8	100.	.5	.0	.0	.0	.2	.0	.0	.0	.1
9. Recpt 9	170.	.3	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	171.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	280.	.5	.0	.2	.0	.0	.0	.0	.0	.1
12. Recpt 12	279.	.5	.0	.2	.0	.0	.0	.0	.0	.1
13. Recpt 13	278.	.5	.0	.1	.0	.1	.0	.0	.0	.1
14. Recpt 14	350.	.3	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	351.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.5	.0	.1	.0	.0	.0	.0	.0	.2
17. Recpt 17	249.	.3	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	198.	.3	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	259.	.5	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	260.	.5	.0	.1	.0	.0	.0	.0	.0	.1

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi 1 Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
One-Interchange Alternative – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi 1 Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    303   2.1     .0  10.0
B. SV EBTA      *  -150    -6     0    -6 *  AG    964   2.1     .0  10.0
C. SV EBRA      *  -150    -8     0    -8 *  AG    222   2.1     .0  10.0
D. SV EBD       *     0    -6   150    -6 *  AG   1162   2.1     .0  10.0
E. SV WBLA      *   150     0     0     0 *  AG     31   2.1     .0  10.0
F. SV WBTA      *   150     6     0     6 *  AG    910   2.1     .0  10.0
G. SV WBRA      *   150     8     0     8 *  AG    262   2.1     .0  10.0
H. SV WBD       *     0     6  -150     6 *  AG   1503   2.1     .0  10.0
I. EF NBLA      *     0  -150     0     0 *  AG    298   2.1     .0  10.0
J. EF NBTA      *     6  -150     6     0 *  AG    190   2.1     .0  10.0
K. EF NBRA      *     8  -150     8     0 *  AG     66   2.1     .0  10.0
L. EF NBD       *     6     0     6   150 *  AG    755   2.1     .0  10.0
M. EF SBLA      *     0   150     0     0 *  AG    132   2.1     .0  10.0
N. EF SBTA      *    -6   150    -6     0 *  AG    117   2.1     .0  10.0
O. EF SBRA      *    -8   150    -8     0 *  AG    295   2.1     .0  10.0
P. EF SBD       *    -6     0    -6  -150 *  AG    370   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	10.	.5	.0	.0	.0	.0	.0	.0	.0	.1
2. Recpt 2	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	9.	.4	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	78.	.4	.0	.0	.0	.2	.0	.1	.0	.0
5. Recpt 5	79.	.4	.0	.0	.0	.1	.0	.1	.0	.0
6. Recpt 6	100.	.5	.0	.0	.0	.1	.0	.2	.0	.0
7. Recpt 7	100.	.5	.0	.0	.0	.1	.0	.2	.0	.0
8. Recpt 8	100.	.5	.0	.0	.0	.1	.0	.0	.0	.2
9. Recpt 9	168.	.4	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	170.	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.6	.0	.2	.0	.0	.0	.0	.0	.2
12. Recpt 12	280.	.6	.0	.2	.0	.0	.0	.0	.0	.2
13. Recpt 13	279.	.5	.0	.1	.0	.1	.0	.0	.0	.2
14. Recpt 14	350.	.4	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	351.	.3	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.6	.0	.1	.0	.0	.0	.0	.0	.3
17. Recpt 17	249.	.4	.0	.0	.0	.0	.0	.0	.0	.1
18. Recpt 18	193.	.4	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	259.	.5	.0	.1	.0	.0	.0	.0	.0	.2
20. Recpt 20	260.	.5	.0	.1	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi 1 Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.1	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.1	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.1	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
No Interchange Alternative – am peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi No Int am
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide


 I.  SITE VARIABLES

       U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
     BRG= WORST CASE           VD=   .0 CM/S
    CLAS=     7 (G)            VS=   .0 CM/S
    MIXH=  100. M             AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)


 II.  LINK VARIABLES

     LINK      *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. SV EBLA      *  -150     0     0     0 *  AG    448   2.1     .0  10.0
B. SV EBTA      *  -150    -6     0    -6 *  AG   1380   2.1     .0  10.0
C. SV EBRA      *  -150    -8     0    -8 *  AG    433   2.1     .0  10.0
D. SV EBD       *     0    -6   150    -6 *  AG   1787   2.1     .0  10.0
E. SV WBLA      *   150     0     0     0 *  AG     90   2.1     .0  10.0
F. SV WBTA      *   150     6     0     6 *  AG   1216   2.1     .0  10.0
G. SV WBRA      *   150     8     0     8 *  AG    184   2.1     .0  10.0
H. SV WBD       *     0     6  -150     6 *  AG   1847   2.1     .0  10.0
I. EF NBLA      *     0  -150     0     0 *  AG    181   2.1     .0  10.0
J. EF NBTA      *     6  -150     6     0 *  AG    156   2.1     .0  10.0
K. EF NBRA      *     8  -150     8     0 *  AG     41   2.1     .0  10.0
L. EF NBD       *     6     0     6   150 *  AG    788   2.1     .0  10.0
M. EF SBLA      *     0   150     0     0 *  AG    366   2.1     .0  10.0
N. EF SBTA      *    -6   150    -6     0 *  AG    254   2.1     .0  10.0
O. EF SBRA      *    -8   150    -8     0 *  AG    450   2.1     .0  10.0
P. EF SBD       *    -6     0    -6  -150 *  AG    777   2.1     .0  10.0
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	10.	.7	.0	.1	.0	.0	.0	.0	.0	.1
2. Recpt 2	9.	.6	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	9.	.5	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	78.	.6	.0	.0	.0	.3	.0	.1	.0	.0
5. Recpt 5	78.	.6	.0	.1	.0	.1	.0	.1	.0	.0
6. Recpt 6	101.	.7	.0	.0	.0	.2	.0	.3	.0	.0
7. Recpt 7	101.	.6	.0	.0	.0	.2	.0	.2	.0	.1
8. Recpt 8	101.	.7	.0	.0	.0	.2	.0	.0	.0	.2
9. Recpt 9	169.	.5	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	171.	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.8	.0	.3	.1	.0	.0	.0	.0	.2
12. Recpt 12	279.	.7	.0	.2	.0	.0	.0	.0	.0	.2
13. Recpt 13	279.	.7	.0	.2	.0	.2	.0	.0	.0	.2
14. Recpt 14	350.	.5	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	351.	.4	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.7	.0	.1	.0	.0	.0	.0	.0	.3
17. Recpt 17	249.	.5	.0	.0	.0	.0	.0	.0	.0	.1
18. Recpt 18	198.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	258.	.7	.0	.2	.0	.0	.0	.0	.0	.3
20. Recpt 20	260.	.7	.0	.2	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi No Int am
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0	.1	.0
2. Recpt 2	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.1	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.1
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.1	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.1	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.1	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

CALINE4 Modeling – Siempre Viva Road and Enrico Fermi Road
No Interchange Alternative – pm peak hour

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
         JUNE 1989 VERSION
         PAGE   1

     JOB: Siempre Viva and Enrico Fermi No Int pm
     RUN: Hour 1           (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide
```

I. SITE VARIABLES

```
      U=    .5 M/S            Z0= 100. CM           ALT=   150. (M)
    BRG= WORST CASE           VD=   .0 CM/S
   CLAS=     7 (G)            VS=   .0 CM/S
   MIXH=  100. M             AMB=   .0 PPM
  SIGTH=    5. DEGREES       TEMP=  6.5 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SV EBLA	*	-150	0	0	0	*	AG	495	2.1	.0	10.0
B. SV EBTA	*	-150	-6	0	-6	*	AG	1338	2.1	.0	10.0
C. SV EBRA	*	-150	-8	0	-8	*	AG	355	2.1	.0	10.0
D. SV EBD	*	0	-6	150	-6	*	AG	1640	2.1	.0	10.0
E. SV WBLA	*	150	0	0	0	*	AG	46	2.1	.0	10.0
F. SV WBTA	*	150	6	0	6	*	AG	1518	2.1	.0	10.0
G. SV WBRA	*	150	8	0	8	*	AG	403	2.1	.0	10.0
H. SV WBD	*	0	6	-150	6	*	AG	2476	2.1	.0	10.0
I. EF NBLA	*	0	-150	0	0	*	AG	475	2.1	.0	10.0
J. EF NBTA	*	6	-150	6	0	*	AG	279	2.1	.0	10.0
K. EF NBRA	*	8	-150	8	0	*	AG	99	2.1	.0	10.0
L. EF NBD	*	6	0	6	150	*	AG	1177	2.1	.0	10.0
M. EF SBLA	*	0	150	0	0	*	AG	203	2.1	.0	10.0
N. EF SBTA	*	-6	150	-6	0	*	AG	172	2.1	.0	10.0
O. EF SBRA	*	-8	150	-8	0	*	AG	483	2.1	.0	10.0
P. EF SBD	*	-6	0	-6	-150	*	AG	573	2.1	.0	10.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Siempre Viva and Enrico Fermi No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	-16	-18	1.8
2. Recpt 2	-16	-38	1.8
3. Recpt 3	-16	-58	1.8
4. Recpt 4	-36	-18	1.8
5. Recpt 5	-56	-18	1.8
6. Recpt 6	-18	16	1.8
7. Recpt 7	-38	16	1.8
8. Recpt 8	-58	16	1.8
9. Recpt 9	-18	36	1.8
10. Recpt 10	-18	56	1.8
11. Recpt 11	18	-16	1.8
12. Recpt 12	38	-16	1.8
13. Recpt 13	58	-16	1.8
14. Recpt 14	18	-36	1.8
15. Recpt 15	18	-56	1.8
16. Recpt 16	16	18	1.8
17. Recpt 17	16	38	1.8
18. Recpt 18	16	58	1.8
19. Recpt 19	36	18	1.8
20. Recpt 20	56	18	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Siempre Viva and Enrico Fermi No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	10.	.7	.0	.1	.0	.0	.0	.0	.0	.2
2. Recpt 2	9.	.6	.0	.0	.0	.0	.0	.0	.0	.1
3. Recpt 3	9.	.5	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	78.	.6	.0	.0	.0	.2	.0	.2	.0	.0
5. Recpt 5	78.	.6	.0	.1	.0	.1	.0	.2	.0	.0
6. Recpt 6	100.	.8	.0	.0	.0	.2	.0	.3	.1	.0
7. Recpt 7	100.	.7	.0	.0	.0	.2	.0	.2	.0	.1
8. Recpt 8	101.	.7	.0	.0	.0	.2	.0	.1	.0	.3
9. Recpt 9	168.	.5	.0	.0	.0	.0	.0	.0	.0	.1
10. Recpt 10	170.	.5	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	281.	.8	.0	.3	.0	.0	.0	.0	.0	.2
12. Recpt 12	280.	.8	.0	.2	.0	.0	.0	.0	.0	.2
13. Recpt 13	279.	.7	.0	.2	.0	.2	.0	.0	.0	.2
14. Recpt 14	350.	.5	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	351.	.5	.0	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	258.	.8	.0	.1	.0	.0	.0	.0	.0	.4
17. Recpt 17	249.	.6	.0	.0	.0	.0	.0	.0	.0	.2
18. Recpt 18	193.	.5	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	258.	.8	.0	.2	.0	.0	.0	.0	.0	.3
20. Recpt 20	260.	.8	.0	.2	.0	.0	.0	.0	.0	.2

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Siempre Viva and Enrico Fermi No Int pm
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	CONC/LINK (PPM) I	J	K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.1	.0	.0	.1	.0
2. Recpt 2	.0	.0	.0	.1	.0	.0	.0	.0
3. Recpt 3	.0	.0	.0	.1	.0	.0	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	.0	.0	.0	.2	.0	.0	.0	.0
15. Recpt 15	.0	.0	.0	.2	.0	.0	.0	.0
16. Recpt 16	.0	.0	.0	.1	.0	.0	.0	.0
17. Recpt 17	.0	.0	.0	.1	.0	.0	.0	.0
18. Recpt 18	.0	.0	.0	.2	.0	.0	.0	.0
19. Recpt 19	.0	.0	.0	.0	.0	.0	.0	.0
20. Recpt 20	.0	.0	.0	.0	.0	.0	.0	.0

APPENDIX D

MSAT EVALUATION

MSAT Modeling – 2015 Two-Interchange Alternative, B, No Toll

Segment 1

```
Title             :       State Route 11 2015b2i seg1
Version           :       CT-EMFAC 2.6
Run Date          :       06 January 2010  10:20 AM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               5963
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              10869
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
        50                     0.009259                          0.00                          0.00                      0.000000
```

55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	16,832.00	100.00	219.203136
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		16,832.00	100.00	219.203136

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	16,832.00	100.00	54.485184
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		16,832.00	100.00	54.485184

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000
55	0.000530	0.00	0.00	0.000000

60	0.000602	0.00	0.00	0.000000
65	0.000721	16,832.00	100.00	12.135872
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		16,832.00	100.00	12.135872

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	16,832.00	100.00	55.394112
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		16,832.00	100.00	55.394112

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000
60	0.000141	0.00	0.00	0.000000

65	0.000169	16,832.00	100.00	2.844608
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		16,832.00	100.00	2.844608

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	16,832.00	100.00	16.764672
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		16,832.00	100.00	16.764672

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	258.95	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	258.95	0.031074

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	258.95	5.204972

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	258.95	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	258.95	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	219.203136	0.219203	0.000241630
FORMALDEHYDE	54.485184	0.054485	0.000060060
BUTADIENE	12.166946	0.012167	0.000013412
BENZENE	60.599084	0.060599	0.000066799
ACROLEIN	2.844608	0.002845	0.000003136
ACETALDEHYDE	16.764672	0.016765	0.000018480

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, B, No Toll

Segment 2

```
 Title             :       State Route 11 2015b2i seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:20 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              10000
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              18167
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	28,167.00	100.00	366.818841
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		28,167.00	100.00	366.818841

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	28,167.00	100.00	91.176579
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		28,167.00	100.00	91.176579

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	28,167.00	100.00	20.308407
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		28,167.00	100.00	20.308407

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	28,167.00	100.00	92.697597
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		28,167.00	100.00	92.697597

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	28,167.00	100.00	4.760223
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		28,167.00	100.00	4.760223

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	28,167.00	100.00	28.054332
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		28,167.00	100.00	28.054332

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	433.34	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	433.34	0.052001

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	433.34	8.710103

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	433.34	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	433.34	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	366.818841	0.366819	0.000404349
FORMALDEHYDE	91.176579	0.091177	0.000100505
BUTADIENE	20.360408	0.020360	0.000022444
BENZENE	101.407700	0.101408	0.000111783
ACROLEIN	4.760223	0.004760	0.000005247
ACETALDEHYDE	28.054332	0.028054	0.000030925

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MSAT Modeling – 2015 Two-Interchange Alternative, B, No Toll

Segment 3

```
Title             :       State Route 11 2015b2i seg3
Version           :       CT-EMFAC 2.6
Run Date          :       06 January 2010  10:21 AM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               8674
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              14550
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	23,224.00	100.00	302.446152
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		23,224.00	100.00	302.446152

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	23,224.00	100.00	75.176088
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		23,224.00	100.00	75.176088

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	23,224.00	100.00	16.744504
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		23,224.00	100.00	16.744504

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	23,224.00	100.00	76.430184
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		23,224.00	100.00	76.430184

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	23,224.00	100.00	3.924856
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		23,224.00	100.00	3.924856

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	23,224.00	100.00	23.131104
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		23,224.00	100.00	23.131104

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	357.29	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	357.29	0.042875

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	357.29	7.181575

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	357.29	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	357.29	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	302.446152	0.302446	0.000333390
FORMALDEHYDE	75.176088	0.075176	0.000082867
BUTADIENE	16.787379	0.016787	0.000018505
BENZENE	83.611759	0.083612	0.000092166
ACROLEIN	3.924856	0.003925	0.000004326
ACETALDEHYDE	23.131104	0.023131	0.000025498

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, B, Toll

Segment 1

```
 Title             :       State Route 11 2015bto2i Seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:25 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               5200
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               9425
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	14,625.00	100.00	190.461375
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		14,625.00	100.00	190.461375

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	14,625.00	100.00	47.341125
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		14,625.00	100.00	47.341125

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	14,625.00	100.00	10.544625
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		14,625.00	100.00	10.544625

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	14,625.00	100.00	48.130875
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		14,625.00	100.00	48.130875

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	14,625.00	100.00	2.471625
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		14,625.00	100.00	2.471625

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	14,625.00	100.00	14.566500
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		14,625.00	100.00	14.566500

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	225.00	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	225.00	0.027000

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	225.00	4.522500

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	225.00	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	225.00	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	190.461375	0.190461	0.000209948
FORMALDEHYDE	47.341125	0.047341	0.000052185
BUTADIENE	10.571625	0.010572	0.000011653
BENZENE	52.653375	0.052653	0.000058040
ACROLEIN	2.471625	0.002472	0.000002725
ACETALDEHYDE	14.566500	0.014567	0.000016057

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MSAT Modeling – 2015 Two-Interchange Alternative, B, Toll

Segment 2

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Title             :       State Route 11 2015bto2i Seg2
Version           :       CT-EMFAC 2.6
Run Date          :       06 January 2010  10:26 AM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               8722
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              15754
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100
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Running Exhaust Emissions (grams)

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.030138	0.00	0.00	0.000000
10	0.022163	0.00	0.00	0.000000
15	0.016276	0.00	0.00	0.000000
20	0.012643	0.00	0.00	0.000000
25	0.010881	0.00	0.00	0.000000
30	0.009663	0.00	0.00	0.000000
35	0.008902	0.00	0.00	0.000000
40	0.008648	0.00	0.00	0.000000

45	0.008768	0.00	0.00	0.000000
50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	24,476.00	100.00	318.750948
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		24,476.00	100.00	318.750948

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	24,476.00	100.00	79.228812
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		24,476.00	100.00	79.228812

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000

50	0.000493	0.00	0.00	0.000000
55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	24,476.00	100.00	17.647196
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		24,476.00	100.00	17.647196

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	24,476.00	100.00	80.550516
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		24,476.00	100.00	80.550516

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000

55	0.000124	0.00	0.00	0.000000
60	0.000141	0.00	0.00	0.000000
65	0.000169	24,476.00	100.00	4.136444
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		24,476.00	100.00	4.136444

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	24,476.00	100.00	24.378096
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		24,476.00	100.00	24.378096

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	376.55	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	376.55	0.045186

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	376.55	7.568732

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	376.55	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	376.55	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	318.750948	0.318751	0.000351363
FORMALDEHYDE	79.228812	0.079229	0.000087335
BUTADIENE	17.692382	0.017692	0.000019503
BENZENE	88.119248	0.088119	0.000097135
ACROLEIN	4.136444	0.004136	0.000004560
ACETALDEHYDE	24.378096	0.024378	0.000026872

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, B, Toll

Segment 3

```
 Title             :       State Route 11 2015bto2i Seg3
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:26 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               7869
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              12994
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	20,863.00	100.00	271.698849
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		20,863.00	100.00	271.698849

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	20,863.00	100.00	67.533531
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		20,863.00	100.00	67.533531

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	20,863.00	100.00	15.042223
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		20,863.00	100.00	15.042223

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	20,863.00	100.00	68.660133
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		20,863.00	100.00	68.660133

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	20,863.00	100.00	3.525847
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		20,863.00	100.00	3.525847

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	20,863.00	100.00	20.779548
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		20,863.00	100.00	20.779548

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	320.97	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	320.97	0.038516

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	320.97	6.451482

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	320.97	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	320.97	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	271.698849	0.271699	0.000299497
FORMALDEHYDE	67.533531	0.067534	0.000074443
BUTADIENE	15.080739	0.015081	0.000016624
BENZENE	75.111615	0.075112	0.000082796
ACROLEIN	3.525847	0.003526	0.000003887
ACETALDEHYDE	20.779548	0.020780	0.000022906

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, C, Toll

Segment 1

```
 Title             :       State Route 11 2015c2i2 seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:34 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               5208
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               9427
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	14,635.00	100.00	190.591605
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		14,635.00	100.00	190.591605

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	14,635.00	100.00	47.373495
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		14,635.00	100.00	47.373495

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	14,635.00	100.00	10.551835
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		14,635.00	100.00	10.551835

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	14,635.00	100.00	48.163785
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		14,635.00	100.00	48.163785

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	14,635.00	100.00	2.473315
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		14,635.00	100.00	2.473315

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	14,635.00	100.00	14.576460
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		14,635.00	100.00	14.576460

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	225.15	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	225.15	0.027018

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	225.15	4.525592

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	225.15	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	225.15	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	190.591605	0.190592	0.000210091
FORMALDEHYDE	47.373495	0.047373	0.000052220
BUTADIENE	10.578853	0.010579	0.000011661
BENZENE	52.689377	0.052689	0.000058080
ACROLEIN	2.473315	0.002473	0.000002726
ACETALDEHYDE	14.576460	0.014576	0.000016068

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, C, Toll

Segment 2

```
 Title             :       State Route 11 2015c2i2 seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:35 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               8882
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              16101
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	24,983.00	100.00	325.353609
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		24,983.00	100.00	325.353609

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	24,983.00	100.00	80.869971
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		24,983.00	100.00	80.869971

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	24,983.00	100.00	18.012743
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		24,983.00	100.00	18.012743

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	24,983.00	100.00	82.219053
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		24,983.00	100.00	82.219053

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	24,983.00	100.00	4.222127
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		24,983.00	100.00	4.222127

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	24,983.00	100.00	24.883068
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		24,983.00	100.00	24.883068

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	384.35	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	384.35	0.046122

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	384.35	7.725512

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	384.35	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	384.35	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	325.353609	0.325354	0.000358641
FORMALDEHYDE	80.869971	0.080870	0.000089144
BUTADIENE	18.058865	0.018059	0.000019906
BENZENE	89.944565	0.089945	0.000099147
ACROLEIN	4.222127	0.004222	0.000004654
ACETALDEHYDE	24.883068	0.024883	0.000027429

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, C, Toll

Segment 3

```
 Title             :       State Route 11 2015c2i2 seg3
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:35 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              11076
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              18493
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	29,569.00	100.00	385.077087
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		29,569.00	100.00	385.077087

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	29,569.00	100.00	95.714853
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		29,569.00	100.00	95.714853

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	29,569.00	100.00	21.319249
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		29,569.00	100.00	21.319249

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	29,569.00	100.00	97.311579
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		29,569.00	100.00	97.311579

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	29,569.00	100.00	4.997161
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		29,569.00	100.00	4.997161

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	29,569.00	100.00	29.450724
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		29,569.00	100.00	29.450724

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	454.91	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	454.91	0.054589

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	454.91	9.143645

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	454.91	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	454.91	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	385.077087	0.385077	0.000424475
FORMALDEHYDE	95.714853	0.095715	0.000105508
BUTADIENE	21.373838	0.021374	0.000023561
BENZENE	106.455224	0.106455	0.000117347
ACROLEIN	4.997161	0.004997	0.000005508
ACETALDEHYDE	29.450724	0.029451	0.000032464

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, C, Toll

Segment 4

```
 Title             :       State Route 11 2015c2i2 seg4
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:35 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              14353
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              22921
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	37,274.00	100.00	485.419302
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		37,274.00	100.00	485.419302

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	37,274.00	100.00	120.655938
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		37,274.00	100.00	120.655938

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	37,274.00	100.00	26.874554
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		37,274.00	100.00	26.874554

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	37,274.00	100.00	122.668734
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		37,274.00	100.00	122.668734

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	37,274.00	100.00	6.299306
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		37,274.00	100.00	6.299306

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	37,274.00	100.00	37.124904
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		37,274.00	100.00	37.124904

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	573.45	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	573.45	0.068814

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	573.45	11.526268

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	573.45	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	573.45	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	485.419302	0.485419	0.000535083
FORMALDEHYDE	120.655938	0.120656	0.000133000
BUTADIENE	26.943368	0.026943	0.000029700
BENZENE	134.195002	0.134195	0.000147925
ACROLEIN	6.299306	0.006299	0.000006944
ACETALDEHYDE	37.124904	0.037125	0.000040923

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MSAT Modeling – 2015 Two-Interchange Alternative, C, Toll

Segment 5

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 Title             :       State Route 11 2015c2i2 seg5
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:35 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23216
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              36239
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	59,455.00	100.00	774.282465
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		59,455.00	100.00	774.282465

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	59,455.00	100.00	192.455835
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		59,455.00	100.00	192.455835

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	59,455.00	100.00	42.867055
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		59,455.00	100.00	42.867055

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	59,455.00	100.00	195.666405
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		59,455.00	100.00	195.666405

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	59,455.00	100.00	10.047895
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		59,455.00	100.00	10.047895

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	59,455.00	100.00	59.217180
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		59,455.00	100.00	59.217180

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	914.69	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	914.69	0.109763

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	914.69	18.385315

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	914.69	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	914.69	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	774.282465	0.774282	0.000853500
FORMALDEHYDE	192.455835	0.192456	0.000212146
BUTADIENE	42.976818	0.042977	0.000047374
BENZENE	214.051720	0.214052	0.000235952
ACROLEIN	10.047895	0.010048	0.000011076
ACETALDEHYDE	59.217180	0.059217	0.000065276

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, No Toll

Segment 1

```
 Title             :       State Route 11 2015d2i seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:41 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               5949
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              10834
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100

==============================================================================================================


          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
        50                     0.009259                          0.00                          0.00                      0.000000
```

55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	16,783.00	100.00	218.565009
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		16,783.00	100.00	218.565009

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	16,783.00	100.00	54.326571
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		16,783.00	100.00	54.326571

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000
55	0.000530	0.00	0.00	0.000000

60	0.000602	0.00	0.00	0.000000
65	0.000721	16,783.00	100.00	12.100543
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		16,783.00	100.00	12.100543

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	16,783.00	100.00	55.232853
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		16,783.00	100.00	55.232853

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000
60	0.000141	0.00	0.00	0.000000

65	0.000169	16,783.00	100.00	2.836327
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		16,783.00	100.00	2.836327

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	16,783.00	100.00	16.715868
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		16,783.00	100.00	16.715868

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	258.20	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	258.20	0.030984

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	258.20	5.189820

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	258.20	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	258.20	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	218.565009	0.218565	0.000240927
FORMALDEHYDE	54.326571	0.054327	0.000059885
BUTADIENE	12.131527	0.012132	0.000013373
BENZENE	60.422673	0.060423	0.000066605
ACROLEIN	2.836327	0.002836	0.000003127
ACETALDEHYDE	16.715868	0.016716	0.000018426

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, No Toll

Segment 2

```
Title             :       State Route 11 2015d2i seg2
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:41 PM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               9747
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              17905
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	27,652.00	100.00	360.111996
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		27,652.00	100.00	360.111996

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	27,652.00	100.00	89.509524
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		27,652.00	100.00	89.509524

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	27,652.00	100.00	19.937092
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		27,652.00	100.00	19.937092

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	27,652.00	100.00	91.002732
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		27,652.00	100.00	91.002732

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	27,652.00	100.00	4.673188
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		27,652.00	100.00	4.673188

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	27,652.00	100.00	27.541392
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		27,652.00	100.00	27.541392

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	425.42	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	425.42	0.051050

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	425.42	8.550849

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	425.42	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	425.42	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	360.111996	0.360112	0.000396956
FORMALDEHYDE	89.509524	0.089510	0.000098667
BUTADIENE	19.988142	0.019988	0.000022033
BENZENE	99.553581	0.099554	0.000109739
ACROLEIN	4.673188	0.004673	0.000005151
ACETALDEHYDE	27.541392	0.027541	0.000030359

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, No Toll

Segment 3

```
Title             :       State Route 11 2015d2i seg3
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:41 PM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              11923
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              20162
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	32,085.00	100.00	417.842955
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		32,085.00	100.00	417.842955

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	32,085.00	100.00	103.859145
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		32,085.00	100.00	103.859145

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	32,085.00	100.00	23.133285
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		32,085.00	100.00	23.133285

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	32,085.00	100.00	105.591735
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		32,085.00	100.00	105.591735

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	32,085.00	100.00	5.422365
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		32,085.00	100.00	5.422365

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	32,085.00	100.00	31.956660
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		32,085.00	100.00	31.956660

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	493.62	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	493.62	0.059234

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	493.62	9.921669

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	493.62	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	493.62	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	417.842955	0.417843	0.000460593
FORMALDEHYDE	103.859145	0.103859	0.000114485
BUTADIENE	23.192519	0.023193	0.000025565
BENZENE	115.513404	0.115513	0.000127332
ACROLEIN	5.422365	0.005422	0.000005977
ACETALDEHYDE	31.956660	0.031957	0.000035226

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, No Toll

Segment 4

```
Title             :       State Route 11 2015d2i seg4
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:42 PM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              14657
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23536
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	38,193.00	100.00	497.387439
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		38,193.00	100.00	497.387439

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	38,193.00	100.00	123.630741
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		38,193.00	100.00	123.630741

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	38,193.00	100.00	27.537153
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		38,193.00	100.00	27.537153

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	38,193.00	100.00	125.693163
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		38,193.00	100.00	125.693163

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	38,193.00	100.00	6.454617
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		38,193.00	100.00	6.454617

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	38,193.00	100.00	38.040228
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		38,193.00	100.00	38.040228

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	587.58	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	587.58	0.070510

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	587.58	11.810451

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	587.58	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	587.58	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	497.387439	0.497387	0.000548276
FORMALDEHYDE	123.630741	0.123631	0.000136280
BUTADIENE	27.607663	0.027608	0.000030432
BENZENE	137.503614	0.137504	0.000151572
ACROLEIN	6.454617	0.006455	0.000007115
ACETALDEHYDE	38.040228	0.038040	0.000041932

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, No Toll

Segment 5

```
Title             :       State Route 11 2015d2i seg5
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:42 PM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23373
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              36583
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	59,956.00	100.00	780.806988
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		59,956.00	100.00	780.806988

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	59,956.00	100.00	194.077572
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		59,956.00	100.00	194.077572

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	59,956.00	100.00	43.228276
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		59,956.00	100.00	43.228276

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	59,956.00	100.00	197.315196
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		59,956.00	100.00	197.315196

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	59,956.00	100.00	10.132564
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		59,956.00	100.00	10.132564

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	59,956.00	100.00	59.716176
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		59,956.00	100.00	59.716176

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	922.40	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	922.40	0.110688

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	922.40	18.540240

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	922.40	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	922.40	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	780.806988	0.780807	0.000860692
FORMALDEHYDE	194.077572	0.194078	0.000213934
BUTADIENE	43.338964	0.043339	0.000047773
BENZENE	215.855436	0.215855	0.000237940
ACROLEIN	10.132564	0.010133	0.000011169
ACETALDEHYDE	59.716176	0.059716	0.000065826

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, Toll

Segment 1

```
 Title             :       State Route 11 2015dto2i seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:43 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               5196
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               9393
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	14,589.00	100.00	189.992547
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		14,589.00	100.00	189.992547

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	14,589.00	100.00	47.224593
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		14,589.00	100.00	47.224593

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	14,589.00	100.00	10.518669
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		14,589.00	100.00	10.518669

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	14,589.00	100.00	48.012399
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		14,589.00	100.00	48.012399

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	14,589.00	100.00	2.465541
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		14,589.00	100.00	2.465541

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	14,589.00	100.00	14.530644
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		14,589.00	100.00	14.530644

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	224.45	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	224.45	0.026934

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	224.45	4.511368

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	224.45	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	224.45	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	189.992547	0.189993	0.000209431
FORMALDEHYDE	47.224593	0.047225	0.000052056
BUTADIENE	10.545603	0.010546	0.000011625
BENZENE	52.523767	0.052524	0.000057898
ACROLEIN	2.465541	0.002466	0.000002718
ACETALDEHYDE	14.530644	0.014531	0.000016017

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, Toll

Segment 2

```
Title             :       State Route 11 2015dto2i seg2
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:43 PM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               8566
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              15514
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	24,080.00	100.00	313.593840
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		24,080.00	100.00	313.593840

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	24,080.00	100.00	77.946960
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		24,080.00	100.00	77.946960

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	24,080.00	100.00	17.361680
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		24,080.00	100.00	17.361680

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	24,080.00	100.00	79.247280
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		24,080.00	100.00	79.247280

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	24,080.00	100.00	4.069520
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		24,080.00	100.00	4.069520

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	24,080.00	100.00	23.983680
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		24,080.00	100.00	23.983680

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	370.46	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	370.46	0.044455

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	370.46	7.446277

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	370.46	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	370.46	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	313.593840	0.313594	0.000345678
FORMALDEHYDE	77.946960	0.077947	0.000085922
BUTADIENE	17.406135	0.017406	0.000019187
BENZENE	86.693557	0.086694	0.000095563
ACROLEIN	4.069520	0.004070	0.000004486
ACETALDEHYDE	23.983680	0.023984	0.000026437

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MSAT Modeling – 2015 Two-Interchange Alternative, D, Toll

Segment 3

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 Title             :       State Route 11 2015dto2i seg3
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:43 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              10863
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              18073
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	28,936.00	100.00	376.833528
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		28,936.00	100.00	376.833528

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	28,936.00	100.00	93.665832
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		28,936.00	100.00	93.665832

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	28,936.00	100.00	20.862856
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		28,936.00	100.00	20.862856

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	28,936.00	100.00	95.228376
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		28,936.00	100.00	95.228376

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	28,936.00	100.00	4.890184
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		28,936.00	100.00	4.890184

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	28,936.00	100.00	28.820256
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		28,936.00	100.00	28.820256

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	445.17	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	445.17	0.053420

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	445.17	8.947902

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	445.17	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	445.17	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	376.833528	0.376834	0.000415388
FORMALDEHYDE	93.665832	0.093666	0.000103249
BUTADIENE	20.916276	0.020916	0.000023056
BENZENE	104.176278	0.104176	0.000114835
ACROLEIN	4.890184	0.004890	0.000005391
ACETALDEHYDE	28.820256	0.028820	0.000031769

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, Toll

Segment 4

```
 Title             :       State Route 11 2015dto2i seg4
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:43 PM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              14258
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              22735
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	36,993.00	100.00	481.759839
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		36,993.00	100.00	481.759839

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	36,993.00	100.00	119.746341
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		36,993.00	100.00	119.746341

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	36,993.00	100.00	26.671953
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		36,993.00	100.00	26.671953

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	36,993.00	100.00	121.743963
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		36,993.00	100.00	121.743963

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	36,993.00	100.00	6.251817
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		36,993.00	100.00	6.251817

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	36,993.00	100.00	36.845028
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		36,993.00	100.00	36.845028

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	569.12	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	569.12	0.068295

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	569.12	11.439374

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	569.12	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	569.12	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	481.759839	0.481760	0.000531049
FORMALDEHYDE	119.746341	0.119746	0.000131998
BUTADIENE	26.740248	0.026740	0.000029476
BENZENE	133.183337	0.133183	0.000146809
ACROLEIN	6.251817	0.006252	0.000006891
ACETALDEHYDE	36.845028	0.036845	0.000040615

---------- END----------

MSAT Modeling – 2015 Two-Interchange Alternative, D, Toll

Segment 5

```
Title             :       State Route 11 2015dto2i seg5
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:43 PM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23053
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              35930
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	58,983.00	100.00	768.135609
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		58,983.00	100.00	768.135609

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	58,983.00	100.00	190.927971
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		58,983.00	100.00	190.927971

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	58,983.00	100.00	42.526743
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		58,983.00	100.00	42.526743

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	58,983.00	100.00	194.113053
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		58,983.00	100.00	194.113053

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	58,983.00	100.00	9.968127
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		58,983.00	100.00	9.968127

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	58,983.00	100.00	58.747068
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		58,983.00	100.00	58.747068

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	907.43	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	907.43	0.108892

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	907.43	18.239358

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	907.43	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	907.43	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	768.135609	0.768136	0.000846725
FORMALDEHYDE	190.927971	0.190928	0.000210462
BUTADIENE	42.635635	0.042636	0.000046998
BENZENE	212.352411	0.212352	0.000234078
ACROLEIN	9.968127	0.009968	0.000010988
ACETALDEHYDE	58.747068	0.058747	0.000064758

---------- END----------

MSAT Modeling – 2015 One-Interchange Alternative, B, No Toll

Segment 1

```
 Title             :       State Route 11 2015b1i seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:16 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              10719
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              19499
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	30,218.00	100.00	393.529014
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		30,218.00	100.00	393.529014

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	30,218.00	100.00	97.815666
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		30,218.00	100.00	97.815666

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	30,218.00	100.00	21.787178
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		30,218.00	100.00	21.787178

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	30,218.00	100.00	99.447438
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		30,218.00	100.00	99.447438

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	30,218.00	100.00	5.106842
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		30,218.00	100.00	5.106842

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	30,218.00	100.00	30.097128
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		30,218.00	100.00	30.097128

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	464.89	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	464.89	0.055787

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	464.89	9.344335

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	464.89	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	464.89	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	393.529014	0.393529	0.000433791
FORMALDEHYDE	97.815666	0.097816	0.000107823
BUTADIENE	21.842965	0.021843	0.000024078
BENZENE	108.791773	0.108792	0.000119922
ACROLEIN	5.106842	0.005107	0.000005629
ACETALDEHYDE	30.097128	0.030097	0.000033176

---------- END----------

MSAT Modeling – 2015 One-Interchange Alternative, B, No Toll

Segment 2

```
 Title             :       State Route 11 2015b1i seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:20 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              12896
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              22542
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	35,438.00	100.00	461.509074
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		35,438.00	100.00	461.509074

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	35,438.00	100.00	114.712806
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		35,438.00	100.00	114.712806

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	35,438.00	100.00	25.550798
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		35,438.00	100.00	25.550798

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	35,438.00	100.00	116.626458
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		35,438.00	100.00	116.626458

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	35,438.00	100.00	5.989022
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		35,438.00	100.00	5.989022

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	35,438.00	100.00	35.296248
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		35,438.00	100.00	35.296248

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	545.20	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	545.20	0.065424

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	545.20	10.958520

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	545.20	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	545.20	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	461.509074	0.461509	0.000508727
FORMALDEHYDE	114.712806	0.114713	0.000126449
BUTADIENE	25.616222	0.025616	0.000028237
BENZENE	127.584978	0.127585	0.000140638
ACROLEIN	5.989022	0.005989	0.000006602
ACETALDEHYDE	35.296248	0.035296	0.000038907

---------- END----------

MSAT Modeling – 2015 One-Interchange Alternative, B, Toll

Segment 1

```
 Title             :       State Route 11 2015bto1i Seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:21 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               9350
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              16912
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	26,262.00	100.00	342.010026
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		26,262.00	100.00	342.010026

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	26,262.00	100.00	85.010094
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		26,262.00	100.00	85.010094

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	26,262.00	100.00	18.934902
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		26,262.00	100.00	18.934902

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	26,262.00	100.00	86.428242
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		26,262.00	100.00	86.428242

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	26,262.00	100.00	4.438278
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		26,262.00	100.00	4.438278

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	26,262.00	100.00	26.156952
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		26,262.00	100.00	26.156952

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	404.03	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	404.03	0.048484

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	404.03	8.121018

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	404.03	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	404.03	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	342.010026	0.342010	0.000377002
FORMALDEHYDE	85.010094	0.085010	0.000093708
BUTADIENE	18.983386	0.018983	0.000020926
BENZENE	94.549260	0.094549	0.000104223
ACROLEIN	4.438278	0.004438	0.000004892
ACETALDEHYDE	26.156952	0.026157	0.000028833

---------- END----------

MSAT Modeling – 2015 One-Interchange Alternative, B, Toll

Segment 2

```
 Title             :       State Route 11 2015bto1i Seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:22 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              11581
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              20080
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	31,661.00	100.00	412.321203
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		31,661.00	100.00	412.321203

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	31,661.00	100.00	102.486657
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		31,661.00	100.00	102.486657

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	31,661.00	100.00	22.827581
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		31,661.00	100.00	22.827581

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	31,661.00	100.00	104.196351
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		31,661.00	100.00	104.196351

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	31,661.00	100.00	5.350709
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		31,661.00	100.00	5.350709

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	31,661.00	100.00	31.534356
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		31,661.00	100.00	31.534356

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	487.09	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	487.09	0.058451

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	487.09	9.790555

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	487.09	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	487.09	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	412.321203	0.412321	0.000454506
FORMALDEHYDE	102.486657	0.102487	0.000112972
BUTADIENE	22.886032	0.022886	0.000025228
BENZENE	113.986906	0.113987	0.000125649
ACROLEIN	5.350709	0.005351	0.000005898
ACETALDEHYDE	31.534356	0.031534	0.000034761

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MSAT Modeling – 2015 One-Interchange Alternative, C, Toll

Segment 1

```
 Title             :       State Route 11 2015cto1i Seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       06 January 2010  10:26 AM
 Scen Year         :       2015
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               9465
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              17149
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
```

50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	26,614.00	100.00	346.594122
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		26,614.00	100.00	346.594122

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	26,614.00	100.00	86.149518
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		26,614.00	100.00	86.149518

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000

55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	26,614.00	100.00	19.188694
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		26,614.00	100.00	19.188694

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	26,614.00	100.00	87.586674
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		26,614.00	100.00	87.586674

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000

60	0.000141	0.00	0.00	0.000000
65	0.000169	26,614.00	100.00	4.497766
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		26,614.00	100.00	4.497766

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	26,614.00	100.00	26.507544
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		26,614.00	100.00	26.507544

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	409.45	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	409.45	0.049134

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	409.45	8.229868

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	409.45	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	409.45	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	346.594122	0.346594	0.000382055
FORMALDEHYDE	86.149518	0.086150	0.000094964
BUTADIENE	19.237828	0.019238	0.000021206
BENZENE	95.816542	0.095817	0.000105620
ACROLEIN	4.497766	0.004498	0.000004958
ACETALDEHYDE	26.507544	0.026508	0.000029220

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MSAT Modeling – 2015 One-Interchange Alternative, C, Toll

Segment 2

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Title             :       State Route 11 2015cto1i Seg2
Version           :       CT-EMFAC 2.6
Run Date          :       06 January 2010  10:27 AM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              13662
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              24565
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

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          Running Exhaust Emissions (grams)
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         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
```

40	0.008648	0.00	0.00	0.000000
45	0.008768	0.00	0.00	0.000000
50	0.009259	0.00	0.00	0.000000
55	0.010123	0.00	0.00	0.000000
60	0.011410	0.00	0.00	0.000000
65	0.013023	38,227.00	100.00	497.830221
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		38,227.00	100.00	497.830221

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	38,227.00	100.00	123.740799
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		38,227.00	100.00	123.740799

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000

45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000
55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	38,227.00	100.00	27.561667
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		38,227.00	100.00	27.561667

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	38,227.00	100.00	125.805057
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		38,227.00	100.00	125.805057

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000

50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000
60	0.000141	0.00	0.00	0.000000
65	0.000169	38,227.00	100.00	6.460363
70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		38,227.00	100.00	6.460363

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	38,227.00	100.00	38.074092
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		38,227.00	100.00	38.074092

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions

0.000000	588.11	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	588.11	0.070573

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	588.11	11.820965

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	588.11	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	588.11	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	497.830221	0.497830	0.000548764
FORMALDEHYDE	123.740799	0.123741	0.000136401
BUTADIENE	27.632240	0.027632	0.000030459
BENZENE	137.626022	0.137626	0.000151707
ACROLEIN	6.460363	0.006460	0.000007121
ACETALDEHYDE	38.074092	0.038074	0.000041970

---------- END----------

MSAT Modeling – 2015 No-Interchange Alternative, B, No Toll

```
Title             :       State Route 11 2015bnoi
Version           :       CT-EMFAC 2.6
Run Date          :       06 January 2010  10:21 AM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              25894
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              47192
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
        50                     0.009259                          0.00                          0.00                      0.000000
        55                     0.010123                          0.00                          0.00                      0.000000
```

60	0.011410	0.00	0.00	0.000000
65	0.013023	73,086.00	100.00	951.798978
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		73,086.00	100.00	951.798978

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	73,086.00	100.00	236.579382
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		73,086.00	100.00	236.579382

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000
55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000

65	0.000721	73,086.00	100.00	52.695006
70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		73,086.00	100.00	52.695006

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	73,086.00	100.00	240.526026
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		73,086.00	100.00	240.526026

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000
60	0.000141	0.00	0.00	0.000000
65	0.000169	73,086.00	100.00	12.351534

70	0.000194	0.00	0.00	0.000000
75	0.000236	0.00	0.00	0.000000
Total		73,086.00	100.00	12.351534

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	73,086.00	100.00	72.793656
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		73,086.00	100.00	72.793656

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,124.40	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	1,124.40	0.134928

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	1,124.40	22.600440

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,124.40	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,124.40	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	951.798978	0.951799	0.001049179
FORMALDEHYDE	236.579382	0.236579	0.000260784
BUTADIENE	52.829934	0.052830	0.000058235
BENZENE	263.126466	0.263126	0.000290047
ACROLEIN	12.351534	0.012352	0.000013615
ACETALDEHYDE	72.793656	0.072794	0.000080241

---------- END----------

MSAT Modeling – 2015 No-Interchange Alternative, B, Toll

```
Title             :       State Route 11 2015btonoi
Version           :       CT-EMFAC 2.6
Run Date          :       06 January 2010  10:26 AM
Scen Year         :       2015
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              22586
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              40893
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100

==================================================================================================

          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.030138                          0.00                          0.00                      0.000000
        10                     0.022163                          0.00                          0.00                      0.000000
        15                     0.016276                          0.00                          0.00                      0.000000
        20                     0.012643                          0.00                          0.00                      0.000000
        25                     0.010881                          0.00                          0.00                      0.000000
        30                     0.009663                          0.00                          0.00                      0.000000
        35                     0.008902                          0.00                          0.00                      0.000000
        40                     0.008648                          0.00                          0.00                      0.000000
        45                     0.008768                          0.00                          0.00                      0.000000
        50                     0.009259                          0.00                          0.00                      0.000000
        55                     0.010123                          0.00                          0.00                      0.000000
        60                     0.011410                          0.00                          0.00                      0.000000
```

65	0.013023	63,479.00	100.00	826.687017
70	0.015060	0.00	0.00	0.000000
75	0.017425	0.00	0.00	0.000000
Total		63,479.00	100.00	826.687017

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.016965	0.00	0.00	0.000000
10	0.010675	0.00	0.00	0.000000
15	0.006752	0.00	0.00	0.000000
20	0.004731	0.00	0.00	0.000000
25	0.003761	0.00	0.00	0.000000
30	0.003119	0.00	0.00	0.000000
35	0.002697	0.00	0.00	0.000000
40	0.002443	0.00	0.00	0.000000
45	0.002332	0.00	0.00	0.000000
50	0.002327	0.00	0.00	0.000000
55	0.002462	0.00	0.00	0.000000
60	0.002751	0.00	0.00	0.000000
65	0.003237	63,479.00	100.00	205.481523
70	0.003672	0.00	0.00	0.000000
75	0.004355	0.00	0.00	0.000000
Total		63,479.00	100.00	205.481523

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002932	0.00	0.00	0.000000
10	0.001913	0.00	0.00	0.000000
15	0.001287	0.00	0.00	0.000000
20	0.000939	0.00	0.00	0.000000
25	0.000745	0.00	0.00	0.000000
30	0.000622	0.00	0.00	0.000000
35	0.000543	0.00	0.00	0.000000
40	0.000500	0.00	0.00	0.000000
45	0.000487	0.00	0.00	0.000000
50	0.000493	0.00	0.00	0.000000
55	0.000530	0.00	0.00	0.000000
60	0.000602	0.00	0.00	0.000000
65	0.000721	63,479.00	100.00	45.768359

70	0.000829	0.00	0.00	0.000000
75	0.001006	0.00	0.00	0.000000
Total		63,479.00	100.00	45.768359

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.013698	0.00	0.00	0.000000
10	0.008905	0.00	0.00	0.000000
15	0.005954	0.00	0.00	0.000000
20	0.004331	0.00	0.00	0.000000
25	0.003436	0.00	0.00	0.000000
30	0.002865	0.00	0.00	0.000000
35	0.002501	0.00	0.00	0.000000
40	0.002299	0.00	0.00	0.000000
45	0.002234	0.00	0.00	0.000000
50	0.002261	0.00	0.00	0.000000
55	0.002426	0.00	0.00	0.000000
60	0.002754	0.00	0.00	0.000000
65	0.003291	63,479.00	100.00	208.909389
70	0.003783	0.00	0.00	0.000000
75	0.004582	0.00	0.00	0.000000
Total		63,479.00	100.00	208.909389

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000674	0.00	0.00	0.000000
10	0.000441	0.00	0.00	0.000000
15	0.000298	0.00	0.00	0.000000
20	0.000218	0.00	0.00	0.000000
25	0.000173	0.00	0.00	0.000000
30	0.000144	0.00	0.00	0.000000
35	0.000126	0.00	0.00	0.000000
40	0.000116	0.00	0.00	0.000000
45	0.000113	0.00	0.00	0.000000
50	0.000115	0.00	0.00	0.000000
55	0.000124	0.00	0.00	0.000000
60	0.000141	0.00	0.00	0.000000
65	0.000169	63,479.00	100.00	10.727951
70	0.000194	0.00	0.00	0.000000

75	0.000236	0.00	0.00	0.000000
Total		63,479.00	100.00	10.727951

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.005996	0.00	0.00	0.000000
10	0.003711	0.00	0.00	0.000000
15	0.002277	0.00	0.00	0.000000
20	0.001561	0.00	0.00	0.000000
25	0.001242	0.00	0.00	0.000000
30	0.001027	0.00	0.00	0.000000
35	0.000883	0.00	0.00	0.000000
40	0.000792	0.00	0.00	0.000000
45	0.000747	0.00	0.00	0.000000
50	0.000739	0.00	0.00	0.000000
55	0.000774	0.00	0.00	0.000000
60	0.000856	0.00	0.00	0.000000
65	0.000996	63,479.00	100.00	63.225084
70	0.001119	0.00	0.00	0.000000
75	0.001307	0.00	0.00	0.000000
Total		63,479.00	100.00	63.225084

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	976.60	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000002	976.60	0.117192

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000335	976.60	19.629660

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	976.60	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	976.60	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	826.687017	0.826687	0.000911266
FORMALDEHYDE	205.481523	0.205482	0.000226505
BUTADIENE	45.885551	0.045886	0.000050580
BENZENE	228.539049	0.228539	0.000251921
ACROLEIN	10.727951	0.010728	0.000011826
ACETALDEHYDE	63.225084	0.063225	0.000069694

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, B, No Toll

Segment 1

```
 Title             :       State Route 11 2030b2i seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:29 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              10044
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              18626
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                         0.00                          0.00                      0.000000
        10                     0.198230                         0.00                          0.00                      0.000000
        15                     0.134233                         0.00                          0.00                      0.000000
        20                     0.098592                         0.00                          0.00                      0.000000
        25                     0.078635                         0.00                          0.00                      0.000000
        30                     0.066695                         0.00                          0.00                      0.000000
        35                     0.059765                         0.00                          0.00                      0.000000
        40                     0.055826                         0.00                          0.00                      0.000000
        45                     0.053878                         0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	28,670.00	100.00	2,472.586810
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		28,670.00	100.00	2,472.586810

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	28,670.00	100.00	235.266020
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		28,670.00	100.00	235.266020

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	28,670.00	100.00	42.632290
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		28,670.00	100.00	42.632290

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	28,670.00	100.00	11.324650
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		28,670.00	100.00	11.324650

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	0.00	0.00	0.000000
65	0.001813	28,670.00	100.00	51.978710
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		28,670.00	100.00	51.978710

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	28,670.00	100.00	2.723650
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		28,670.00	100.00	2.723650

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	441.08	554.539551

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	441.08	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	441.08	0.026465

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	441.08	5.292923

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	441.08	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	3,027.126361	3.027126	0.003336836
Diesel_PM	235.266020	0.235266	0.000259336
FORMALDEHYDE	42.632290	0.042632	0.000046994
BUTADIENE	11.351115	0.011351	0.000012512
BENZENE	57.271633	0.057272	0.000063131
ACROLEIN	2.723650	0.002724	0.000003002

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, B, No Toll

Segment 2

```
 Title             :       State Route 11 2030b2i seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:29 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23992
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                          25.72 74.28
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              38718
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	6,170.74	9.84	432.624579
65	0.086243	56,539.26	90.16	4,876.115193
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		62,710.00	100.00	5,308.739772

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	6,170.74	9.84	45.188347
65	0.008206	56,539.26	90.16	463.961148
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		62,710.00	100.00	509.149494

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	6,170.74	9.84	7.682574
65	0.001487	56,539.26	90.16	84.073876
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		62,710.00	100.00	91.756450

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	6,170.74	9.84	1.980808
65	0.000395	56,539.26	90.16	22.333007
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		62,710.00	100.00	24.313815

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	6,170.74	9.84	9.095674
65	0.001813	56,539.26	90.16	102.505674
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		62,710.00	100.00	111.601348

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	6,170.74	9.84	0.475147
65	0.000095	56,539.26	90.16	5.371229
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		62,710.00	100.00	5.846377

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	972.68	1,222.892755

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	972.68	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	972.68	0.058361

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	972.68	11.672165

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	972.68	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	6,531.632527	6.531633	0.007199892
Diesel_PM	509.149494	0.509149	0.000561241
FORMALDEHYDE	91.756450	0.091756	0.000101144
BUTADIENE	24.372176	0.024372	0.000026866
BENZENE	123.273514	0.123274	0.000135886
ACROLEIN	5.846377	0.005846	0.000006445

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, B, No Toll

Segment 3

```
Title             :       State Route 11 2030b2i seg3
Version           :       CT-EMFAC 2.6
Run Date          :       11 December 2009  02:30 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       San Diego County

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23938
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                          29.12 70.88
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              35651
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                100

==========================================================================================================


          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                      0.305656                          0.00                          0.00                      0.000000
        10                      0.198230                          0.00                          0.00                      0.000000
        15                      0.134233                          0.00                          0.00                      0.000000
        20                      0.098592                          0.00                          0.00                      0.000000
        25                      0.078635                          0.00                          0.00                      0.000000
        30                      0.066695                          0.00                          0.00                      0.000000
        35                      0.059765                          0.00                          0.00                      0.000000
```

40	0.055826	0.00	0.00	0.000000
45	0.053878	0.00	0.00	0.000000
50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	6,970.75	11.70	488.712003
65	0.086243	52,618.25	88.30	4,537.956114
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		59,589.00	100.00	5,026.668117

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	6,970.75	11.70	51.046770
65	0.008206	52,618.25	88.30	431.785396
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		59,589.00	100.00	482.832166

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000

45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	6,970.75	11.70	8.678578
65	0.001487	52,618.25	88.30	78.243344
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		59,589.00	100.00	86.921923

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	6,970.75	11.70	2.237609
65	0.000395	52,618.25	88.30	20.784210
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		59,589.00	100.00	23.021820

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000

50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	6,970.75	11.70	10.274879
65	0.001813	52,618.25	88.30	95.396895
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		59,589.00	100.00	105.671774

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	6,970.75	11.70	0.536747
65	0.000095	52,618.25	88.30	4.998734
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		59,589.00	100.00	5.535482

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions

0.020954	925.69	1,163.815375

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	925.69	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	925.69	0.055541

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	925.69	11.108288

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	925.69	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	6,190.483493	6.190483	0.006823840
Diesel_PM	482.832166	0.482832	0.000532231
FORMALDEHYDE	86.921923	0.086922	0.000095815
BUTADIENE	23.077361	0.023077	0.000025438
BENZENE	116.780063	0.116780	0.000128728
ACROLEIN	5.535482	0.005535	0.000006102

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, B, Toll

Segment 1

```
Title             :       State Route 11 2030bto2i Seg1
Version           :       CT-EMFAC 2.6
Run Date          :       11 December 2009  02:35 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       San Diego County

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               8659
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              15913
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
```

40	0.055826	0.00	0.00	0.000000
45	0.053878	0.00	0.00	0.000000
50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	24,572.00	100.00	2,119.162996
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		24,572.00	100.00	2,119.162996

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	24,572.00	100.00	201.637832
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		24,572.00	100.00	201.637832

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000

45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	24,572.00	100.00	36.538564
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		24,572.00	100.00	36.538564

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	24,572.00	100.00	9.705940
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		24,572.00	100.00	9.705940

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000

50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	24,572.00	100.00	44.549036
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		24,572.00	100.00	44.549036

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	24,572.00	100.00	2.334340
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		24,572.00	100.00	2.334340

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions

0.020954	378.03	475.275404

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	378.03	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	378.03	0.022682

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	378.03	4.536369

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	378.03	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	2,594.438400	2.594438	0.002859879
Diesel_PM	201.637832	0.201638	0.000222268
FORMALDEHYDE	36.538564	0.036539	0.000040277
BUTADIENE	9.728622	0.009729	0.000010724
BENZENE	49.085405	0.049085	0.000054107
ACROLEIN	2.334340	0.002334	0.000002573

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MSAT Modeling – 2030 Two-Interchange Alternative, B, Toll

Segment 2

```
 Title             :       State Route 11 2030bto2i Seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:35 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              22195
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              35024
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
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         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	57,219.00	100.00	4,934.738217
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		57,219.00	100.00	4,934.738217

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	57,219.00	100.00	469.539114
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		57,219.00	100.00	469.539114

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	57,219.00	100.00	85.084653
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		57,219.00	100.00	85.084653

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	57,219.00	100.00	22.601505
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		57,219.00	100.00	22.601505

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	0.00	0.00	0.000000
65	0.001813	57,219.00	100.00	103.738047
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		57,219.00	100.00	103.738047

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	57,219.00	100.00	5.435805
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		57,219.00	100.00	5.435805

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	880.29	1,106.738701

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	880.29	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	880.29	0.052818

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	880.29	10.563508

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	880.29	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	6,041.476918	6.041477	0.006659588
Diesel_PM	469.539114	0.469539	0.000517578
FORMALDEHYDE	85.084653	0.085085	0.000093790
BUTADIENE	22.654323	0.022654	0.000024972
BENZENE	114.301555	0.114302	0.000125996
ACROLEIN	5.435805	0.005436	0.000005992

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MSAT Modeling – 2030 Two-Interchange Alternative, B, Toll

Segment 3

```
 Title             :       State Route 11 2030bto2i Seg3
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:36 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23038
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                          29.96 70.04
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              33787
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
        50                     0.055944                          0.00                          0.00                      0.000000
```

55	0.061019	0.00	0.00	0.000000
60	0.070109	6,902.18	12.15	483.905274
65	0.086243	49,922.82	87.85	4,305.493351
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		56,825.00	100.00	4,789.398625

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	6,902.18	12.15	50.544699
65	0.008206	49,922.82	87.85	409.666622
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		56,825.00	100.00	460.211321

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000

60	0.001245	6,902.18	12.15	8.593220
65	0.001487	49,922.82	87.85	74.235226
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		56,825.00	100.00	82.828446

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	6,902.18	12.15	2.215601
65	0.000395	49,922.82	87.85	19.719512
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		56,825.00	100.00	21.935113

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	6,902.18	12.15	10.173820

65	0.001813	49,922.82	87.85	90.510064
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		56,825.00	100.00	100.683884

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	6,902.18	12.15	0.531468
65	0.000095	49,922.82	87.85	4.742667
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		56,825.00	100.00	5.274136

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	883.08	1,110.243152

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	883.08	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	883.08	0.052985

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	883.08	10.596957

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	883.08	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	5,899.641778	5.899642	0.006503242
Diesel_PM	460.211321	0.460211	0.000507296
FORMALDEHYDE	82.828446	0.082828	0.000091303
BUTADIENE	21.988098	0.021988	0.000024238
BENZENE	111.280841	0.111281	0.000122666
ACROLEIN	5.274136	0.005274	0.000005814

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, C, Toll

Segment 1

```
Title             :       State Route 11 2030c2i2 seg1
Version           :       CT-EMFAC 2.6
Run Date          :       12 January 2010  09:36 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               8660
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              15914
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
        50                     0.006000                          0.00                          0.00                      0.000000
```

55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	24,574.00	100.00	201.654244
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		24,574.00	100.00	201.654244

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	24,574.00	100.00	36.541538
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		24,574.00	100.00	36.541538

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000

60	0.000321	0.00	0.00	0.000000
65	0.000395	24,574.00	100.00	9.706730
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		24,574.00	100.00	9.706730

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	24,574.00	100.00	44.552662
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		24,574.00	100.00	44.552662

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000

65	0.000095	24,574.00	100.00	2.334530
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		24,574.00	100.00	2.334530

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	24,574.00	100.00	9.362694
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		24,574.00	100.00	9.362694

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	378.06	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	378.06	0.022684

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	378.06	4.536738

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	378.06	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	378.06	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	201.654244	0.201654	0.000222286
FORMALDEHYDE	36.541538	0.036542	0.000040280
BUTADIENE	9.729414	0.009729	0.000010725
BENZENE	49.089400	0.049089	0.000054112
ACROLEIN	2.334530	0.002335	0.000002573
ACETALDEHYDE	9.362694	0.009363	0.000010321

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, C, Toll

Segment 2

```
 Title             :       State Route 11 2030c2i2 seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:36 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              23821
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              37595
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	61,416.00	100.00	503.979696
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		61,416.00	100.00	503.979696

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	61,416.00	100.00	91.325592
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		61,416.00	100.00	91.325592

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	61,416.00	100.00	24.259320
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		61,416.00	100.00	24.259320

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	61,416.00	100.00	111.347208
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		61,416.00	100.00	111.347208

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	61,416.00	100.00	5.834520
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		61,416.00	100.00	5.834520

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	61,416.00	100.00	23.399496
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		61,416.00	100.00	23.399496

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	944.86	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	944.86	0.056692

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	944.86	11.338338

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	944.86	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	944.86	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	503.979696	0.503980	0.000555543
FORMALDEHYDE	91.325592	0.091326	0.000100669
BUTADIENE	24.316012	0.024316	0.000026804
BENZENE	122.685546	0.122686	0.000135238
ACROLEIN	5.834520	0.005835	0.000006431
ACETALDEHYDE	23.399496	0.023399	0.000025794

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, C, Toll

Segment 3

```
 Title             :       State Route 11 2030c2i2 seg3
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:37 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              31609
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                            24.62        7.14 68.24
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              46606
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	7,782.14	9.95	46.692815
55	0.006588	0.00	0.00	0.000000
60	0.007323	2,256.88	2.89	16.527151
65	0.008206	68,175.98	87.16	559.452105
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		78,215.00	100.00	622.672071

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	7,782.14	9.95	8.194589
55	0.001116	0.00	0.00	0.000000
60	0.001245	2,256.88	2.89	2.809819
65	0.001487	68,175.98	87.16	101.377685
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		78,215.00	100.00	112.382092

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	7,782.14	9.95	1.984445

55	0.000278	0.00	0.00	0.000000
60	0.000321	2,256.88	2.89	0.724459
65	0.000395	68,175.98	87.16	26.929513
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		78,215.00	100.00	29.638417

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	7,782.14	9.95	9.151792
55	0.001283	0.00	0.00	0.000000
60	0.001474	2,256.88	2.89	3.326645
65	0.001813	68,175.98	87.16	123.603055
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		78,215.00	100.00	136.081491

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	7,782.14	9.95	0.474710
55	0.000066	0.00	0.00	0.000000

60	0.000077	2,256.88	2.89	0.173780
65	0.000095	68,175.98	87.16	6.476718
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		78,215.00	100.00	7.125208

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	7,782.14	9.95	2.287948
55	0.000303	0.00	0.00	0.000000
60	0.000329	2,256.88	2.89	0.742514
65	0.000381	68,175.98	87.16	25.975049
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		78,215.00	100.00	29.005511

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,242.12	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,242.12	0.074527

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,242.12	14.905424

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,242.12	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,242.12	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	622.672071	0.622672	0.000686378
FORMALDEHYDE	112.382092	0.112382	0.000123880
BUTADIENE	29.712944	0.029713	0.000032753
BENZENE	150.986915	0.150987	0.000166435
ACROLEIN	7.125208	0.007125	0.000007854
ACETALDEHYDE	29.005511	0.029006	0.000031973

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, C, Toll

Segment 4

```
 Title             :       State Route 11 2030c2i2 seg4
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:38 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              29901
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              46670
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                         0.00                          0.00                      0.000000
        10                     0.009027                         0.00                          0.00                      0.000000
        15                     0.007566                         0.00                          0.00                      0.000000
        20                     0.006481                         0.00                          0.00                      0.000000
        25                     0.005843                         0.00                          0.00                      0.000000
        30                     0.005466                         0.00                          0.00                      0.000000
        35                     0.005312                         0.00                          0.00                      0.000000
        40                     0.005342                         0.00                          0.00                      0.000000
        45                     0.005597                         0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	76,571.00	100.00	628.341626
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		76,571.00	100.00	628.341626

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	76,571.00	100.00	113.861077
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		76,571.00	100.00	113.861077

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	76,571.00	100.00	30.245545
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		76,571.00	100.00	30.245545

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	76,571.00	100.00	138.823223
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		76,571.00	100.00	138.823223

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	76,571.00	100.00	7.274245
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		76,571.00	100.00	7.274245

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	76,571.00	100.00	29.173551
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		76,571.00	100.00	29.173551

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,178.02	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,178.02	0.070681

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,178.02	14.136185

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,178.02	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,178.02	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	628.341626	0.628342	0.000692628
FORMALDEHYDE	113.861077	0.113861	0.000125510
BUTADIENE	30.316226	0.030316	0.000033418
BENZENE	152.959408	0.152959	0.000168609
ACROLEIN	7.274245	0.007274	0.000008018
ACETALDEHYDE	29.173551	0.029174	0.000032158

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, C, Toll

Segment 5

```
 Title             :       State Route 11 2030c2i2 seg5
 Version           :       CT-EMFAC 2.6
 Run Date          :       12 January 2010  09:38 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              45874
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              71102
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	116,976.00	100.00	959.905056
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		116,976.00	100.00	959.905056

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	116,976.00	100.00	173.943312
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		116,976.00	100.00	173.943312

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	116,976.00	100.00	46.205520
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		116,976.00	100.00	46.205520

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	116,976.00	100.00	212.077488
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		116,976.00	100.00	212.077488

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	116,976.00	100.00	11.112720
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		116,976.00	100.00	11.112720

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	116,976.00	100.00	44.567856
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		116,976.00	100.00	44.567856

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,799.63	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,799.63	0.107978

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,799.63	21.595569

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,799.63	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,799.63	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	959.905056	0.959905	0.001058114
FORMALDEHYDE	173.943312	0.173943	0.000191740
BUTADIENE	46.313498	0.046313	0.000051052
BENZENE	233.673057	0.233673	0.000257580
ACROLEIN	11.112720	0.011113	0.000012250
ACETALDEHYDE	44.567856	0.044568	0.000049128

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, D, No Toll

Segment 1

```
 Title             :       State Route 11 2030d2i seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:45 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               9718
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              18168
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	27,886.00	100.00	228.832516
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		27,886.00	100.00	228.832516

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	27,886.00	100.00	41.466482
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		27,886.00	100.00	41.466482

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	27,886.00	100.00	11.014970
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		27,886.00	100.00	11.014970

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	27,886.00	100.00	50.557318
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		27,886.00	100.00	50.557318

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	27,886.00	100.00	2.649170
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		27,886.00	100.00	2.649170

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	27,886.00	100.00	10.624566
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		27,886.00	100.00	10.624566

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	429.02	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	429.02	0.025741

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	429.02	5.148185

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	429.02	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	429.02	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	228.832516	0.228833	0.000252245
FORMALDEHYDE	41.466482	0.041466	0.000045709
BUTADIENE	11.040711	0.011041	0.000012170
BENZENE	55.705503	0.055706	0.000061405
ACROLEIN	2.649170	0.002649	0.000002920
ACETALDEHYDE	10.624566	0.010625	0.000011712

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, D, No Toll

Segment 2

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Title             :       State Route 11 2030d2i seg2
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:45 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              19235
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              31796
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
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Running Exhaust Emissions (grams)

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000

55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	51,031.00	100.00	418.760386
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		51,031.00	100.00	418.760386

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	51,031.00	100.00	75.883097
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		51,031.00	100.00	75.883097

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000

60	0.000321	0.00	0.00	0.000000
65	0.000395	51,031.00	100.00	20.157245
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		51,031.00	100.00	20.157245

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	51,031.00	100.00	92.519203
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		51,031.00	100.00	92.519203

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000

65	0.000095	51,031.00	100.00	4.847945
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		51,031.00	100.00	4.847945

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	51,031.00	100.00	19.442811
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		51,031.00	100.00	19.442811

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	785.09	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	785.09	0.047106

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	785.09	9.421108

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	785.09	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	785.09	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	418.760386	0.418760	0.000461604
FORMALDEHYDE	75.883097	0.075883	0.000083647
BUTADIENE	20.204351	0.020204	0.000022271
BENZENE	101.940311	0.101940	0.000112370
ACROLEIN	4.847945	0.004848	0.000005344
ACETALDEHYDE	19.442811	0.019443	0.000021432

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, D, No Toll

Segment 3

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 Title             :       State Route 11 2030d2i seg3
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:45 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              32125
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                          23.68       25.73 50.59
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              46139
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                  100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	7,607.20	9.72	45.643200
55	0.006588	0.00	0.00	0.000000
60	0.007323	8,265.76	10.56	60.530179
65	0.008206	62,391.04	79.72	511.980854
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		78,264.00	100.00	618.154233

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	7,607.20	9.72	8.010382
55	0.001116	0.00	0.00	0.000000
60	0.001245	8,265.76	10.56	10.290874
65	0.001487	62,391.04	79.72	92.775473
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		78,264.00	100.00	111.076729

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	7,607.20	9.72	1.939836

55	0.000278	0.00	0.00	0.000000
60	0.000321	8,265.76	10.56	2.653310
65	0.000395	62,391.04	79.72	24.644460
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		78,264.00	100.00	29.237606

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	7,607.20	9.72	8.946067
55	0.001283	0.00	0.00	0.000000
60	0.001474	8,265.76	10.56	12.183734
65	0.001813	62,391.04	79.72	113.114951
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		78,264.00	100.00	134.244752

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	7,607.20	9.72	0.464039
55	0.000066	0.00	0.00	0.000000

60	0.000077	8,265.76	10.56	0.636464
65	0.000095	62,391.04	79.72	5.927149
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		78,264.00	100.00	7.027651

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	7,607.20	9.72	2.236517
55	0.000303	0.00	0.00	0.000000
60	0.000329	8,265.76	10.56	2.719436
65	0.000381	62,391.04	79.72	23.770985
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		78,264.00	100.00	28.726938

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,249.77	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,249.77	0.074986

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,249.77	14.997226

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,249.77	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,249.77	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	618.154233	0.618154	0.000681398
FORMALDEHYDE	111.076729	0.111077	0.000122441
BUTADIENE	29.312592	0.029313	0.000032312
BENZENE	149.241978	0.149242	0.000164511
ACROLEIN	7.027651	0.007028	0.000007747
ACETALDEHYDE	28.726938	0.028727	0.000031666

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MSAT Modeling – 2030 Two-Interchange Alternative, D, No Toll

Segment 4

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 Title             :       State Route 11 2030d2i seg4
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:46 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                         Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                             29571
                         VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                  100
 Offpeak User Input:
                         Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                             45953
                         VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                  100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	75,524.00	100.00	619.749944
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		75,524.00	100.00	619.749944

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	75,524.00	100.00	112.304188
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		75,524.00	100.00	112.304188

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	75,524.00	100.00	29.831980
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		75,524.00	100.00	29.831980

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	75,524.00	100.00	136.925012
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		75,524.00	100.00	136.925012

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	75,524.00	100.00	7.174780
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		75,524.00	100.00	7.174780

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	75,524.00	100.00	28.774644
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		75,524.00	100.00	28.774644

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,161.91	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,161.91	0.069714

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,161.91	13.942892

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,161.91	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,161.91	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	619.749944	0.619750	0.000683157
FORMALDEHYDE	112.304188	0.112304	0.000123794
BUTADIENE	29.901694	0.029902	0.000032961
BENZENE	150.867904	0.150868	0.000166303
ACROLEIN	7.174780	0.007175	0.000007909
ACETALDEHYDE	28.774644	0.028775	0.000031719

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, D, No Toll

Segment 5

```
Title             :       State Route 11 2030d2i seg5
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:47 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              45506
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              70660
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	116,166.00	100.00	953.258196
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		116,166.00	100.00	953.258196

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	116,166.00	100.00	172.738842
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		116,166.00	100.00	172.738842

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	116,166.00	100.00	45.885570
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		116,166.00	100.00	45.885570

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	116,166.00	100.00	210.608958
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		116,166.00	100.00	210.608958

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	116,166.00	100.00	11.035770
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		116,166.00	100.00	11.035770

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	116,166.00	100.00	44.259246
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		116,166.00	100.00	44.259246

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,787.17	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,787.17	0.107230

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,787.17	21.446031

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,787.17	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,787.17	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	953.258196	0.953258	0.001050787
FORMALDEHYDE	172.738842	0.172739	0.000190412
BUTADIENE	45.992800	0.045993	0.000050698
BENZENE	232.054989	0.232055	0.000255797
ACROLEIN	11.035770	0.011036	0.000012165
ACETALDEHYDE	44.259246	0.044259	0.000048787

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, D, Toll

Segment 1

```
Title             :       State Route 11 2030dto2i seg1
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:47 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                               8371
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              15514
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                   100

==========================================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	23,885.00	100.00	196.000310
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		23,885.00	100.00	196.000310

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	23,885.00	100.00	35.516995
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		23,885.00	100.00	35.516995

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	23,885.00	100.00	9.434575
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		23,885.00	100.00	9.434575

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	23,885.00	100.00	43.303505
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		23,885.00	100.00	43.303505

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	23,885.00	100.00	2.269075
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		23,885.00	100.00	2.269075

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	23,885.00	100.00	9.100185
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		23,885.00	100.00	9.100185

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	367.46	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	367.46	0.022048

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	367.46	4.409538

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	367.46	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	367.46	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	196.000310	0.196000	0.000216053
FORMALDEHYDE	35.516995	0.035517	0.000039151
BUTADIENE	9.456623	0.009457	0.000010424
BENZENE	47.713043	0.047713	0.000052595
ACROLEIN	2.269075	0.002269	0.000002501
ACETALDEHYDE	9.100185	0.009100	0.000010031

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, D, Toll

Segment 2

```
 Title             :       State Route 11 2030dto2i seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :          19 July 2010  07:47 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       Air Basin Air Basin

 Peak User Input   :
                         Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                             17855
                         VMT Distribution(%) by Speed(mph)
                (mph)    5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                  100
 Offpeak User Input:
                         Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                             28355
                         VMT Distribution(%) by Speed(mph)
                (mph)    5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                  100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                         0.00                          0.00                      0.000000
        10                     0.009027                         0.00                          0.00                      0.000000
        15                     0.007566                         0.00                          0.00                      0.000000
        20                     0.006481                         0.00                          0.00                      0.000000
        25                     0.005843                         0.00                          0.00                      0.000000
        30                     0.005466                         0.00                          0.00                      0.000000
        35                     0.005312                         0.00                          0.00                      0.000000
        40                     0.005342                         0.00                          0.00                      0.000000
        45                     0.005597                         0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	46,210.00	100.00	379.199260
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		46,210.00	100.00	379.199260

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	46,210.00	100.00	68.714270
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		46,210.00	100.00	68.714270

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	46,210.00	100.00	18.252950
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		46,210.00	100.00	18.252950

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	46,210.00	100.00	83.778730
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		46,210.00	100.00	83.778730

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	46,210.00	100.00	4.389950
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		46,210.00	100.00	4.389950

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	46,210.00	100.00	17.606010
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		46,210.00	100.00	17.606010

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	710.92	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	710.92	0.042655

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	710.92	8.531077

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	710.92	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	710.92	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	379.199260	0.379199	0.000417996
FORMALDEHYDE	68.714270	0.068714	0.000075745
BUTADIENE	18.295605	0.018296	0.000020167
BENZENE	92.309807	0.092310	0.000101754
ACROLEIN	4.389950	0.004390	0.000004839
ACETALDEHYDE	17.606010	0.017606	0.000019407

---------- END----------

MSAT Modeling – 2030 Two-Interchange Alternative, D, Toll

Segment 3

```
Title             :       State Route 11 2030dto2i seg3
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:48 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              31318
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                          24.21       26.65 49.14
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              44176
                          VMT Distribution(%) by Speed(mph)
               (mph)      5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                   %                                                                                 100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	7,582.09	10.04	45.492527
55	0.006588	0.00	0.00	0.000000
60	0.007323	8,346.25	11.06	61.119567
65	0.008206	59,565.67	78.90	488.795849
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		75,494.00	100.00	595.407942

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	7,582.09	10.04	7.983938
55	0.001116	0.00	0.00	0.000000
60	0.001245	8,346.25	11.06	10.391078
65	0.001487	59,565.67	78.90	88.574144
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		75,494.00	100.00	106.949160

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	7,582.09	10.04	1.933432

55	0.000278	0.00	0.00	0.000000
60	0.000321	8,346.25	11.06	2.679145
65	0.000395	59,565.67	78.90	23.528438
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		75,494.00	100.00	28.141015

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	7,582.09	10.04	8.916535
55	0.001283	0.00	0.00	0.000000
60	0.001474	8,346.25	11.06	12.302368
65	0.001813	59,565.67	78.90	107.992551
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		75,494.00	100.00	129.211454

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	7,582.09	10.04	0.462507
55	0.000066	0.00	0.00	0.000000

60	0.000077	8,346.25	11.06	0.642661
65	0.000095	59,565.67	78.90	5.658738
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		75,494.00	100.00	6.763907

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	7,582.09	10.04	2.229134
55	0.000303	0.00	0.00	0.000000
60	0.000329	8,346.25	11.06	2.745915
65	0.000381	59,565.67	78.90	22.694518
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		75,494.00	100.00	27.669568

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,207.14	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,207.14	0.072428

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,207.14	14.485689

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,207.14	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,207.14	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	595.407942	0.595408	0.000656325
FORMALDEHYDE	106.949160	0.106949	0.000117891
BUTADIENE	28.213444	0.028213	0.000031100
BENZENE	143.697143	0.143697	0.000158399
ACROLEIN	6.763907	0.006764	0.000007456
ACETALDEHYDE	27.669568	0.027670	0.000030500

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MSAT Modeling – 2030 Two-Interchange Alternative, D, Toll

Segment 4

```
Title             :       State Route 11 2030dto2i seg4
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:48 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              29347
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              45377
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------------------

         Pollutant Name   :  Diesel_PM

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

         5                     0.010979                          0.00                          0.00                      0.000000
        10                     0.009027                          0.00                          0.00                      0.000000
        15                     0.007566                          0.00                          0.00                      0.000000
        20                     0.006481                          0.00                          0.00                      0.000000
        25                     0.005843                          0.00                          0.00                      0.000000
        30                     0.005466                          0.00                          0.00                      0.000000
        35                     0.005312                          0.00                          0.00                      0.000000
        40                     0.005342                          0.00                          0.00                      0.000000
        45                     0.005597                          0.00                          0.00                      0.000000
```

50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	74,724.00	100.00	613.185144
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		74,724.00	100.00	613.185144

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	74,724.00	100.00	111.114588
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		74,724.00	100.00	111.114588

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000

55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	74,724.00	100.00	29.515980
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		74,724.00	100.00	29.515980

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	74,724.00	100.00	135.474612
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		74,724.00	100.00	135.474612

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000

60	0.000077	0.00	0.00	0.000000
65	0.000095	74,724.00	100.00	7.098780
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		74,724.00	100.00	7.098780

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	0.00	0.00	0.000000
60	0.000329	0.00	0.00	0.000000
65	0.000381	74,724.00	100.00	28.469844
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		74,724.00	100.00	28.469844

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,149.60	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,149.60	0.068976

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,149.60	13.795200

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,149.60	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,149.60	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	613.185144	0.613185	0.000675921
FORMALDEHYDE	111.114588	0.111115	0.000122483
BUTADIENE	29.584956	0.029585	0.000032612
BENZENE	149.269812	0.149270	0.000164542
ACROLEIN	7.098780	0.007099	0.000007825
ACETALDEHYDE	28.469844	0.028470	0.000031383

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MSAT Modeling – 2030 Two-Interchange Alternative, D, Toll

Segment 5

```
Title             :       State Route 11 2030dto2i seg5
Version           :       CT-EMFAC 2.6
Run Date          :          19 July 2010  07:49 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       Air Basin Air Basin

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              45335
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                 3.12  7.94 88.94
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              70267
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100
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Running Exhaust Emissions (grams)

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000

55	0.006588	1,414.45	1.22	9.318410
60	0.007323	3,599.60	3.11	26.359863
65	0.008206	110,587.95	95.66	907.484709
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		115,602.00	100.00	943.162983

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	1,414.45	1.22	1.578528
60	0.001245	3,599.60	3.11	4.481501
65	0.001487	110,587.95	95.66	164.444280
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		115,602.00	100.00	170.504309

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	1,414.45	1.22	0.393218

60	0.000321	3,599.60	3.11	1.155471
65	0.000395	110,587.95	95.66	43.682240
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		115,602.00	100.00	45.230929

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	1,414.45	1.22	1.814742
60	0.001474	3,599.60	3.11	5.305809
65	0.001813	110,587.95	95.66	200.495952
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		115,602.00	100.00	207.616502

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	1,414.45	1.22	0.093354
60	0.000077	3,599.60	3.11	0.277169

65	0.000095	110,587.95	95.66	10.505855
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		115,602.00	100.00	10.876378

Pollutant Name : ACETALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.002280	0.00	0.00	0.000000
10	0.001391	0.00	0.00	0.000000
15	0.000846	0.00	0.00	0.000000
20	0.000587	0.00	0.00	0.000000
25	0.000477	0.00	0.00	0.000000
30	0.000404	0.00	0.00	0.000000
35	0.000353	0.00	0.00	0.000000
40	0.000320	0.00	0.00	0.000000
45	0.000298	0.00	0.00	0.000000
50	0.000294	0.00	0.00	0.000000
55	0.000303	1,414.45	1.22	0.428579
60	0.000329	3,599.60	3.11	1.184268
65	0.000381	110,587.95	95.66	42.134009
70	0.000430	0.00	0.00	0.000000
75	0.000516	0.00	0.00	0.000000
Total		115,602.00	100.00	43.746856

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,787.06	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,787.06	0.107224

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,787.06	21.444764

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,787.06	0.000000

Pollutant Name : ACETALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,787.06	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
Diesel_PM	943.162983	0.943163	0.001039659
FORMALDEHYDE	170.504309	0.170504	0.000187949
BUTADIENE	45.338153	0.045338	0.000049977
BENZENE	229.061267	0.229061	0.000252497
ACROLEIN	10.876378	0.010876	0.000011989
ACETALDEHYDE	43.746856	0.043747	0.000048223

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MSAT Modeling – 2030 One-Interchange Alternative, B, No Toll

Segment 1

```
 Title             :       State Route 11 2030b1i seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:28 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              17733
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              32917
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
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         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	50,650.00	100.00	4,368.207950
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		50,650.00	100.00	4,368.207950

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	50,650.00	100.00	415.633900
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		50,650.00	100.00	415.633900

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	50,650.00	100.00	75.316550
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		50,650.00	100.00	75.316550

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	50,650.00	100.00	20.006750
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		50,650.00	100.00	20.006750

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	0.00	0.00	0.000000
65	0.001813	50,650.00	100.00	91.828450
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		50,650.00	100.00	91.828450

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	50,650.00	100.00	4.811750
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		50,650.00	100.00	4.811750

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	779.23	979.680092

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	779.23	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	779.23	0.046754

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	779.23	9.350769

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	779.23	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	5,347.888042	5.347888	0.005895037
Diesel_PM	415.633900	0.415634	0.000458158
FORMALDEHYDE	75.316550	0.075317	0.000083022
BUTADIENE	20.053504	0.020054	0.000022105
BENZENE	101.179219	0.101179	0.000111531
ACROLEIN	4.811750	0.004812	0.000005304

---------- END----------

MSAT Modeling – 2030 One-Interchange Alternative, B, No Toll

Segment 2

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 Title             :       State Route 11 2030b1i seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:28 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              31577
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              49244
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
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         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	80,821.00	100.00	6,970.245503
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		80,821.00	100.00	6,970.245503

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	80,821.00	100.00	663.217126
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		80,821.00	100.00	663.217126

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	80,821.00	100.00	120.180827
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		80,821.00	100.00	120.180827

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	80,821.00	100.00	31.924295
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		80,821.00	100.00	31.924295

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	0.00	0.00	0.000000
65	0.001813	80,821.00	100.00	146.528473
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		80,821.00	100.00	146.528473

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	80,821.00	100.00	7.677995
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		80,821.00	100.00	7.677995

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	1,243.40	1,563.252216

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,243.40	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,243.40	0.074604

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,243.40	14.920800

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,243.40	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	8,533.497719	8.533498	0.009406571
Diesel_PM	663.217126	0.663217	0.000731072
FORMALDEHYDE	120.180827	0.120181	0.000132477
BUTADIENE	31.998899	0.031999	0.000035273
BENZENE	161.449273	0.161449	0.000177967
ACROLEIN	7.677995	0.007678	0.000008464

---------- END----------

MSAT Modeling – 2030 One-Interchange Alternative, B, Toll

Segment 1

```
 Title             :       State Route 11 2030bto1i Seg 1
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:33 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              15269
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              28147
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
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         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
```

40	0.055826	0.00	0.00	0.000000
45	0.053878	0.00	0.00	0.000000
50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	43,416.00	100.00	3,744.326088
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		43,416.00	100.00	3,744.326088

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	43,416.00	100.00	356.271696
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		43,416.00	100.00	356.271696

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000

45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	43,416.00	100.00	64.559592
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		43,416.00	100.00	64.559592

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	43,416.00	100.00	17.149320
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		43,416.00	100.00	17.149320

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000

50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	43,416.00	100.00	78.713208
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		43,416.00	100.00	78.713208

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	43,416.00	100.00	4.124520
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		43,416.00	100.00	4.124520

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions

0.020954	667.94	839.758951

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	667.94	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	667.94	0.040076

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	667.94	8.015262

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	667.94	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	4,584.085039	4.584085	0.005053089
Diesel_PM	356.271696	0.356272	0.000392722
FORMALDEHYDE	64.559592	0.064560	0.000071165
BUTADIENE	17.189396	0.017189	0.000018948
BENZENE	86.728470	0.086728	0.000095602
ACROLEIN	4.124520	0.004125	0.000004547

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MSAT Modeling – 2030 One-Interchange Alternative, B, Toll

Segment 2

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 Title             :       State Route 11 2030bto1i Seg 2
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:33 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              30208
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              46281
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	76,489.00	100.00	6,596.640827
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		76,489.00	100.00	6,596.640827

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	76,489.00	100.00	627.668734
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		76,489.00	100.00	627.668734

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	76,489.00	100.00	113.739143
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		76,489.00	100.00	113.739143

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	76,489.00	100.00	30.213155
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		76,489.00	100.00	30.213155

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	0.00	0.00	0.000000
65	0.001813	76,489.00	100.00	138.674557
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		76,489.00	100.00	138.674557

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	76,489.00	100.00	7.266455
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		76,489.00	100.00	7.266455

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	1,176.75	1,479.462006

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,176.75	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,176.75	0.070605

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,176.75	14.121046

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,176.75	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	8,076.102833	8.076103	0.008902380
Diesel_PM	627.668734	0.627669	0.000691886
FORMALDEHYDE	113.739143	0.113739	0.000125376
BUTADIENE	30.283760	0.030284	0.000033382
BENZENE	152.795603	0.152796	0.000168428
ACROLEIN	7.266455	0.007266	0.000008010

---------- END----------

MSAT Modeling – 2030 One-Interchange Alternative, C, Toll

Segment 1

```
 Title             :       State Route 11 2030cto1i Seg1
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:37 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              15330
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              28276
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	43,606.00	100.00	3,760.712258
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		43,606.00	100.00	3,760.712258

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	43,606.00	100.00	357.830836
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		43,606.00	100.00	357.830836

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	43,606.00	100.00	64.842122
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		43,606.00	100.00	64.842122

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	43,606.00	100.00	17.224370
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		43,606.00	100.00	17.224370

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	0.00	0.00	0.000000
65	0.001813	43,606.00	100.00	79.057678
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		43,606.00	100.00	79.057678

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	43,606.00	100.00	4.142570
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		43,606.00	100.00	4.142570

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	670.86	843.433961

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	670.86	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	670.86	0.040252

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	670.86	8.050338

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	670.86	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	4,604.146219	4.604146	0.005075202
Diesel_PM	357.830836	0.357831	0.000394441
FORMALDEHYDE	64.842122	0.064842	0.000071476
BUTADIENE	17.264622	0.017265	0.000019031
BENZENE	87.108016	0.087108	0.000096020
ACROLEIN	4.142570	0.004143	0.000004566

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MSAT Modeling – 2030 One-Interchange Alternative, C, Toll

Segment 2

```
 Title             :       State Route 11 2030cto1i Seg2
 Version           :       CT-EMFAC 2.6
 Run Date          :       11 December 2009  02:37 PM
 Scen Year         :       2030
 Season            :       Annual
 Temperature       :       67F
 Relative Humidity :       62%
 Area              :       San Diego County

 Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              33040
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
 Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              52060
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================

          Running Exhaust Emissions (grams)
----------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
```

50	0.055944	0.00	0.00	0.000000
55	0.061019	0.00	0.00	0.000000
60	0.070109	0.00	0.00	0.000000
65	0.086243	85,100.00	100.00	7,339.279300
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		85,100.00	100.00	7,339.279300

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	85,100.00	100.00	698.330600
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		85,100.00	100.00	698.330600

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000

55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000
65	0.001487	85,100.00	100.00	126.543700
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		85,100.00	100.00	126.543700

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	85,100.00	100.00	33.614500
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		85,100.00	100.00	33.614500

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000

60	0.001474	0.00	0.00	0.000000
65	0.001813	85,100.00	100.00	154.286300
70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		85,100.00	100.00	154.286300

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	85,100.00	100.00	8.084500
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		85,100.00	100.00	8.084500

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	1,309.23	1,646.017292

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,309.23	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,309.23	0.078554

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,309.23	15.710769

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,309.23	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	8,985.296592	8.985297	0.009904594
Diesel_PM	698.330600	0.698331	0.000769778
FORMALDEHYDE	126.543700	0.126544	0.000139491
BUTADIENE	33.693054	0.033693	0.000037140
BENZENE	169.997069	0.169997	0.000187390
ACROLEIN	8.084500	0.008085	0.000008912

---------- END----------

MSAT Modeling – 2030 No-Interchange Alternative, B, No Toll

```
Title             :       State Route 11 2030bnoi
Version           :       CT-EMFAC 2.6
Run Date          :       11 December 2009  02:26 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       San Diego County

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              43582
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              80785
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                 100

==================================================================================================

          Running Exhaust Emissions (grams)
--------------------------------------------------------------------------------------------------

         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
        50                     0.055944                          0.00                          0.00                      0.000000
        55                     0.061019                          0.00                          0.00                      0.000000
```

60	0.070109	0.00	0.00	0.000000
65	0.086243	124,367.00	100.00	10,725.783181
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		124,367.00	100.00	10,725.783181

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	124,367.00	100.00	1,020.555602
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		124,367.00	100.00	1,020.555602

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000

65	0.001487	124,367.00	100.00	184.933729
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		124,367.00	100.00	184.933729

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	124,367.00	100.00	49.124965
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		124,367.00	100.00	49.124965

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	124,367.00	100.00	225.477371

70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		124,367.00	100.00	225.477371

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	124,367.00	100.00	11.814865
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		124,367.00	100.00	11.814865

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	1,913.34	2,405.525647

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,913.34	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,913.34	0.114800

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,913.34	22.960062

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,913.34	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	13,131.308828	13.131309	0.014474790
Diesel_PM	1,020.555602	1.020556	0.001124970
FORMALDEHYDE	184.933729	0.184934	0.000203855
BUTADIENE	49.239765	0.049240	0.000054278
BENZENE	248.437433	0.248437	0.000273855
ACROLEIN	11.814865	0.011815	0.000013024

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MSAT Modeling – 2030 No-Interchange Alternative, B, Toll

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Title             :       State Route 11 2030btonoi
Version           :       CT-EMFAC 2.6
Run Date          :       11 December 2009  02:36 PM
Scen Year         :       2030
Season            :       Annual
Temperature       :       67F
Relative Humidity :       62%
Area              :       San Diego County

Peak User Input   :
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              37530
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100
Offpeak User Input:
                          Total VMT        Volume (vph)     Road Length(mi)     Number of Hours
                              69026
                          VMT Distribution(%) by Speed(mph)
                (mph)     5    10    15    20    25    30    35    40    45    50    55    60    65    70   >75
                    %                                                                                   100

==============================================================================================================


          Running Exhaust Emissions (grams)
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         Pollutant Name   :  TOG_exh

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

         5                     0.305656                          0.00                          0.00                      0.000000
        10                     0.198230                          0.00                          0.00                      0.000000
        15                     0.134233                          0.00                          0.00                      0.000000
        20                     0.098592                          0.00                          0.00                      0.000000
        25                     0.078635                          0.00                          0.00                      0.000000
        30                     0.066695                          0.00                          0.00                      0.000000
        35                     0.059765                          0.00                          0.00                      0.000000
        40                     0.055826                          0.00                          0.00                      0.000000
        45                     0.053878                          0.00                          0.00                      0.000000
        50                     0.055944                          0.00                          0.00                      0.000000
        55                     0.061019                          0.00                          0.00                      0.000000
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60	0.070109	0.00	0.00	0.000000
65	0.086243	106,556.00	100.00	9,189.709108
70	0.103411	0.00	0.00	0.000000
75	0.132690	0.00	0.00	0.000000
Total		106,556.00	100.00	9,189.709108

Pollutant Name : Diesel_PM

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.010979	0.00	0.00	0.000000
10	0.009027	0.00	0.00	0.000000
15	0.007566	0.00	0.00	0.000000
20	0.006481	0.00	0.00	0.000000
25	0.005843	0.00	0.00	0.000000
30	0.005466	0.00	0.00	0.000000
35	0.005312	0.00	0.00	0.000000
40	0.005342	0.00	0.00	0.000000
45	0.005597	0.00	0.00	0.000000
50	0.006000	0.00	0.00	0.000000
55	0.006588	0.00	0.00	0.000000
60	0.007323	0.00	0.00	0.000000
65	0.008206	106,556.00	100.00	874.398536
70	0.009276	0.00	0.00	0.000000
75	0.010531	0.00	0.00	0.000000
Total		106,556.00	100.00	874.398536

Pollutant Name : FORMALDEHYDE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.007022	0.00	0.00	0.000000
10	0.004388	0.00	0.00	0.000000
15	0.002791	0.00	0.00	0.000000
20	0.001985	0.00	0.00	0.000000
25	0.001600	0.00	0.00	0.000000
30	0.001355	0.00	0.00	0.000000
35	0.001198	0.00	0.00	0.000000
40	0.001100	0.00	0.00	0.000000
45	0.001043	0.00	0.00	0.000000
50	0.001053	0.00	0.00	0.000000
55	0.001116	0.00	0.00	0.000000
60	0.001245	0.00	0.00	0.000000

65	0.001487	106,556.00	100.00	158.448772
70	0.001733	0.00	0.00	0.000000
75	0.002156	0.00	0.00	0.000000
Total		106,556.00	100.00	158.448772

Pollutant Name : BUTADIENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.001371	0.00	0.00	0.000000
10	0.000892	0.00	0.00	0.000000
15	0.000607	0.00	0.00	0.000000
20	0.000447	0.00	0.00	0.000000
25	0.000356	0.00	0.00	0.000000
30	0.000302	0.00	0.00	0.000000
35	0.000271	0.00	0.00	0.000000
40	0.000253	0.00	0.00	0.000000
45	0.000245	0.00	0.00	0.000000
50	0.000255	0.00	0.00	0.000000
55	0.000278	0.00	0.00	0.000000
60	0.000321	0.00	0.00	0.000000
65	0.000395	106,556.00	100.00	42.089620
70	0.000474	0.00	0.00	0.000000
75	0.000610	0.00	0.00	0.000000
Total		106,556.00	100.00	42.089620

Pollutant Name : BENZENE

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.006433	0.00	0.00	0.000000
10	0.004171	0.00	0.00	0.000000
15	0.002824	0.00	0.00	0.000000
20	0.002074	0.00	0.00	0.000000
25	0.001654	0.00	0.00	0.000000
30	0.001403	0.00	0.00	0.000000
35	0.001257	0.00	0.00	0.000000
40	0.001174	0.00	0.00	0.000000
45	0.001133	0.00	0.00	0.000000
50	0.001176	0.00	0.00	0.000000
55	0.001283	0.00	0.00	0.000000
60	0.001474	0.00	0.00	0.000000
65	0.001813	106,556.00	100.00	193.186028

70	0.002174	0.00	0.00	0.000000
75	0.002789	0.00	0.00	0.000000
Total		106,556.00	100.00	193.186028

Pollutant Name : ACROLEIN

speed(mph)	Emission Factor(grams/mile)	VMT by Speed	VMT-Speed Distribution (%)	Emissions by Speed
5	0.000322	0.00	0.00	0.000000
10	0.000210	0.00	0.00	0.000000
15	0.000144	0.00	0.00	0.000000
20	0.000106	0.00	0.00	0.000000
25	0.000084	0.00	0.00	0.000000
30	0.000072	0.00	0.00	0.000000
35	0.000064	0.00	0.00	0.000000
40	0.000060	0.00	0.00	0.000000
45	0.000058	0.00	0.00	0.000000
50	0.000061	0.00	0.00	0.000000
55	0.000066	0.00	0.00	0.000000
60	0.000077	0.00	0.00	0.000000
65	0.000095	106,556.00	100.00	10.122820
70	0.000114	0.00	0.00	0.000000
75	0.000147	0.00	0.00	0.000000
Total		106,556.00	100.00	10.122820

Idling Emissions (grams) (Currently NOT Available)

Evaporative Running Loss Emissions (grams)

Pollutant Name : TOG_los

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.020954	1,639.32	2,061.022545

Pollutant Name : FORMALDEHYDE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,639.32	0.000000

Pollutant Name : BUTADIENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000001	1,639.32	0.098359

Pollutant Name : BENZENE

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000200	1,639.32	19.671877

Pollutant Name : ACROLEIN

Emission Factor(grams/min)	total running time(hrs)	Emissions
0.000000	1,639.32	0.000000

Total Emissions

Pollutant Name	Total Emissions (grams)	Total Emissions (Kilograms)	Total Emissions (US Tons)
TOG	11,250.731653	11.250732	0.012401809
Diesel_PM	874.398536	0.874399	0.000963859
FORMALDEHYDE	158.448772	0.158449	0.000174660
BUTADIENE	42.187979	0.042188	0.000046504
BENZENE	212.857905	0.212858	0.000234636
ACROLEIN	10.122820	0.010123	0.000011158

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