

# AIR QUALITY STUDY

## West Valley Connector Project



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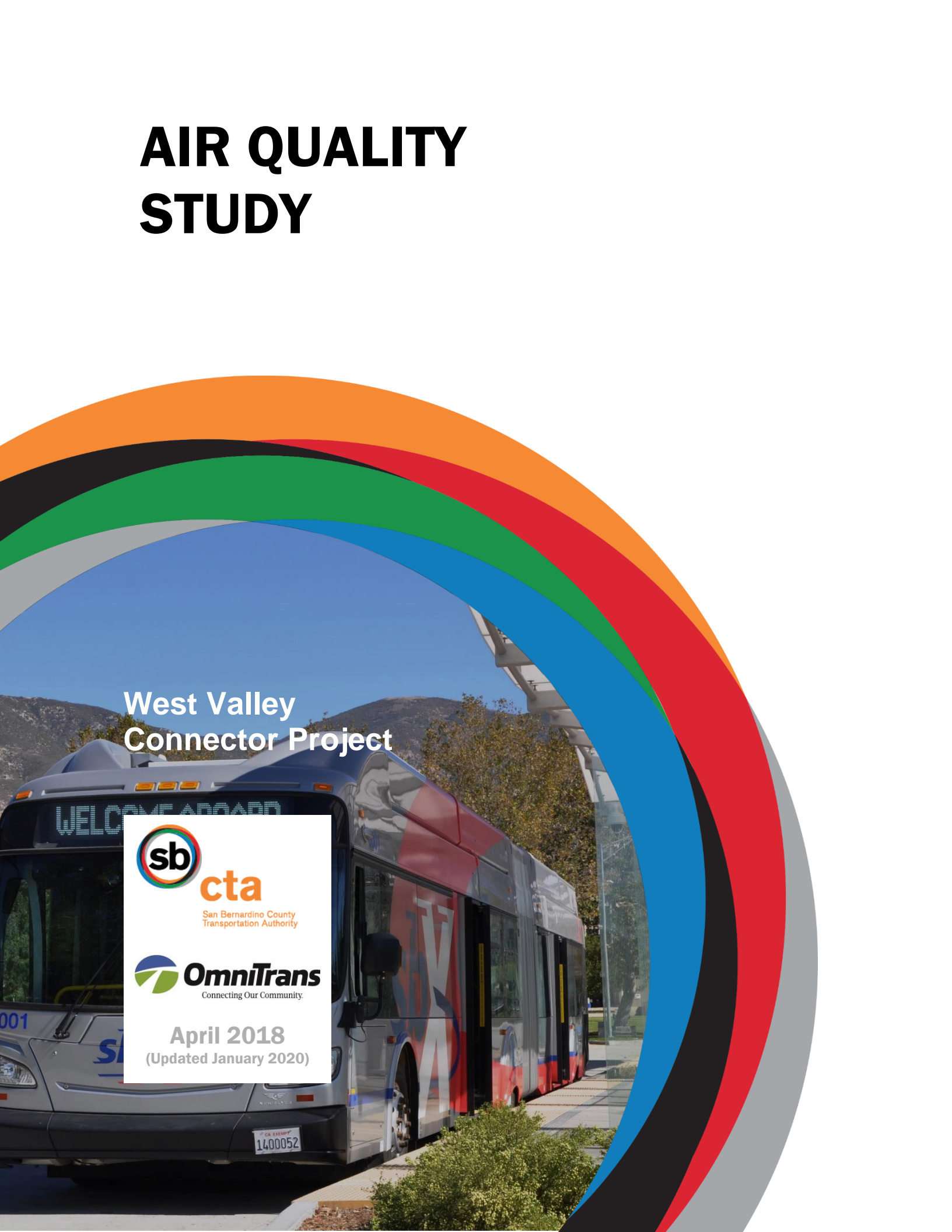
San Bernardino County  
Transportation Authority



**OmniTrans**

Connecting Our Community.

April 2018  
(Updated January 2020)





## Revision Log

Date	Description
April 2018	Original report prepared
January 2020	Project schedule update Mitigation measurers update



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## LIST OF ACRONYMS

°F	Fahrenheit
AADT	Annual Average Daily Traffic
AB	Assembly Bill
ADA	Americans with Disabilities Act
AQMP	Air Quality Management Plan
Basin	South Coast Air Basin
BRT	Bus-Rapid Transit
CAAQS	California Ambient Air Quality Standards
CAA	Clean Air Act
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CNG	Compressed Natural Gas
CO	Carbon Monoxide
DPM	Diesel Particulate Matter
EA	Environmental Assessment
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
H <sub>2</sub> S	Hydrogen Sulfide
LST	Localized Significance Threshold
NAAQS	National Ambient Air Quality Standards

NEPA	National Environmental Policy Act
NO	Nitric Oxide
NO <sub>x</sub>	Nitrogen Oxide
O <sub>3</sub>	Ozone
Pb	Lead
PM	Particulate Matter
PM <sub>2.5</sub>	Particulate Matter of Diameter Less Than 2.5 microns
PM <sub>10</sub>	Particulate Matter of Diameter Less Than 10 microns
POAQC	Project of Air Quality Concern
RCEM	Road Construction Emissions Model
ROG	Reactive Organic Gas
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SANBAG	San Bernardino Associated Governments
SBCOG	San Bernardino Council of Governments
SBCTA	San Bernardino County Transportation Authority
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO <sub>2</sub>	Sulfur Dioxide
SRA	Source Receptor Area
TAC	Toxic Air Contaminant
VOC	Volatile Organic Compound
VMT	Vehicle Miles Traveled



## EXECUTIVE SUMMARY

The Air Quality Study was prepared in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The NEPA analysis addresses regional and operational emissions of criteria pollutants, ozone precursors and mobile source air toxics (MSAT). The NEPA section also includes Transportation Conformity requirements. The following analysis demonstrates no adverse effects in accordance with Federal Transit Administration (FTA) NEPA assessment policies and shows consistency with Transportation Conformity requirements. Regardless of the finding of no adverse effects, air quality minimization measures AQ1 through AQ13 have been included to reduce construction emissions.

Under CEQA, the West Valley Connector Bus Rapid Transit (the project) would be consistent with air quality plans and would not generate significant regional emissions, toxic air contaminant (TAC) concentrations, or odors. However, construction activity associated with each of the Build Alternatives would exceed the localized significance thresholds for particulate matter. Mitigation Measures AQ1 and AQ13 would reduce fugitive dust emissions, but not to levels below the significance thresholds. Therefore, the proposed project would result in a significant and unavoidable impact related to localized construction emissions. Because the project area is designated as a State and/or federal nonattainment area for particulate matter, the proposed project would contribute to a short-term cumulative impact.

### Minimization and Mitigation Measures

- AQ1: Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emission or at the right of way line as required by the South Coast Air Quality Management District (SCAQMD).
- AQ2: Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.
- AQ3: Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- AQ4: Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation as needed to minimize construction impacts to existing communities.
- AQ5: Locate equipment and materials storage sites at least 500 feet from the sensitive receptors. Keep construction areas clean and orderly.

- AQ6: Extended idling, material storage, and equipment maintenance should be prohibited within 500 feet of sensitive air receptors, to the extent feasible.
- AQ7: Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- AQ8: Cover all transported loads of soils and wet materials prior to transport or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.
- AQ9: Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.
- AQ10: Route and schedule construction traffic to avoid peak travel times as much as possible to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

***Minimization of PM<sub>10</sub> During Construction and South Coast Air Quality Management District (SCAQMD) Rules.*** The SCAQMD adopts rules and regulations to control pollution from all sources, including stationary sources, area sources, and on-road and off-road mobile sources. Several of these rules may apply to construction or operation of the proposed project. The most pertinent SCAQMD rules applicable to the proposed project are:

- AQ11: Rule 401 – Visible Emissions: A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminants for a period or periods aggregating more than three (3) minutes in any one (1) hour which are as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart or of such opacity as to obscure an observer’s view to a degree equal to or greater than smoke.
- AQ12: Rule 402 – Nuisance: A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.
- AQ13: Rule 403 – Fugitive Dust: SCAQMD’s Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. It also requires a dust control plan to be submitted and approved prior to construction. The dust control plan should describe all applicable dust control measures that will be implemented at the project; and should describe types of dust suppressant, surface treatments and other measures to be utilized at the

construction sites to comply with the Rule. The relevant specifics of Rule 403 are as follows:

- No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that the dust remains visible in the atmosphere beyond the property line of the emission source; or the dust emission exceeds 20 percent opacity, if the dust emission is the result of movement of a motorized vehicle.
- No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of Rule 403 to minimize fugitive dust emissions from each fugitive dust source type within the active operation.
- No person shall cause or allow PM<sub>10</sub> levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. Environmental Protection Agency-approved equivalent methods for PM<sub>10</sub> monitoring.
- No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.
- No person shall conduct an active operation with a disturbed surface area of five or more acres or with a daily import or export of 100 cubic yards or more of bulk material without utilizing approved control measure/measures at each vehicle egress from the site to a paved public road.

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## 1.0 INTRODUCTION

This Air Quality Study (AQS) analyzes the potential air quality impacts along the West Valley Connector (WVC) Project (the WVC Project or the proposed project). The objectives of this analysis are to describe the regulatory setting, affected environment, impacts on air quality that would result from the project, and mitigation measures that would reduce these impacts.

The San Bernardino County Transportation Authority (SBCTA), in cooperation with the cities of Pomona, Montclair, Ontario, Rancho Cucamonga, and Fontana, proposes construction of the WVC Project, a 35-mile-long Bus Rapid Transit (BRT) project that will decrease travel times and improve the existing public transit system within the corridor.

In January 2017, SBCTA entered into a cooperative agreement with Omnitrans designating SBCTA as the lead agency for the proposed WVC Project. SBCTA intends to construct the WVC, which will then be operated by Omnitrans. SBCTA has the authority to allocate Federal Transit Administration (FTA) funds; however, it does not have the ability to receive funds directly from FTA. Omnitrans is the direct FTA grantee for the San Bernardino Valley. As a result, SBCTA and Omnitrans have developed a successful direct recipient/subrecipient working relationship to deliver projects with FTA funds. The current relationship allows the delivery of FTA-funded projects that meet FTA requirements without duplicating staff, assuring the best use of limited public funds available. Omnitrans and SBCTA executed Memorandum of Understanding (MOU) 15-1001289 in October 2015, setting forth the roles and responsibilities of the recipient/subrecipient relationship.

The project is subject to state and federal environmental review requirements because it involves the use of federal funds from the Federal Transit Administration (FTA). An Environmental Impact Report (EIR)/Environmental Assessment (EA) has been prepared for the proposed project in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). SBCTA is the CEQA lead agency, and FTA is the NEPA lead agency. This AQS has been prepared as part of the technical analysis required to support the EIR/EA.

### 1.1 Project Location and Setting

The proposed project is located primarily along Holt Avenue/Boulevard and Foothill Boulevard, which would connect the cities of Pomona, Montclair, Ontario, Rancho Cucamonga, and Fontana in the counties of Los Angeles and San Bernardino, California. The project limits extend from Main Street in the City of Pomona on the west side to Sierra Avenue in the City of Fontana on the east side and Church Street in the City of Rancho Cucamonga on the north side to Ontario International Airport on the south side (see Figures 1-1 and 1-2). The proposed project area is primarily urban, and generalized land uses include low-, medium-, and medium-high-density residential, commercial, industrial,

open space and recreation, transportation and utilities, agriculture, vacant, public facilities, airport, educational facilities, and offices.

## **1.2 Purpose and Need**

The purpose of the proposed project is to improve corridor mobility and transit efficiency in the western San Bernardino Valley from the City of Pomona, in Los Angeles County, to the City of Fontana, in San Bernardino County, with an enhanced, state-of-the-art BRT system (i.e., the system that includes off-board fare vending, all-door boarding, transit signal priority [TSP], optimized operating plans, and stations that consist of a branded shelter/canopy, security cameras, benches, lighting, and variable message signs).

The proposed project would address the growing traffic congestion and travel demands of the nearly one million people that would be added to Los Angeles and San Bernardino County by 2040 per Southern California Association of Government's (SCAG) 2016 Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) growth forecast. Improved rapid transit along the project corridor would help Omnitrans/SBCTA achieve its long-range goals to cost effectively enhance lifeline mobility and accessibility, improve transit operations, increase ridership, support economic growth and redevelopment, conserve nonrenewable resources, and improve corridor safety.

Recognizing the importance of the WVC transit corridor, SBCTA is proposing a project that is designed to achieve the following objectives:

- Improve transit service by better accommodating high existing bus ridership.
- Improve ridership by providing a viable and competitive transit alternative to the automobile.
- Improve efficiency of transit service delivery while lowering Omnitrans' operating costs per rider.
- Support local and regional planning goals to organize development along transit corridors and around transit stations.

The project purpose and objectives stated above would respond to the following needs:

- Current and future population and employment conditions establish a need for higher-quality transit service.
- Current and future transportation conditions establish a need for an improved transit system.
- Transit-related opportunities exist in the project area.

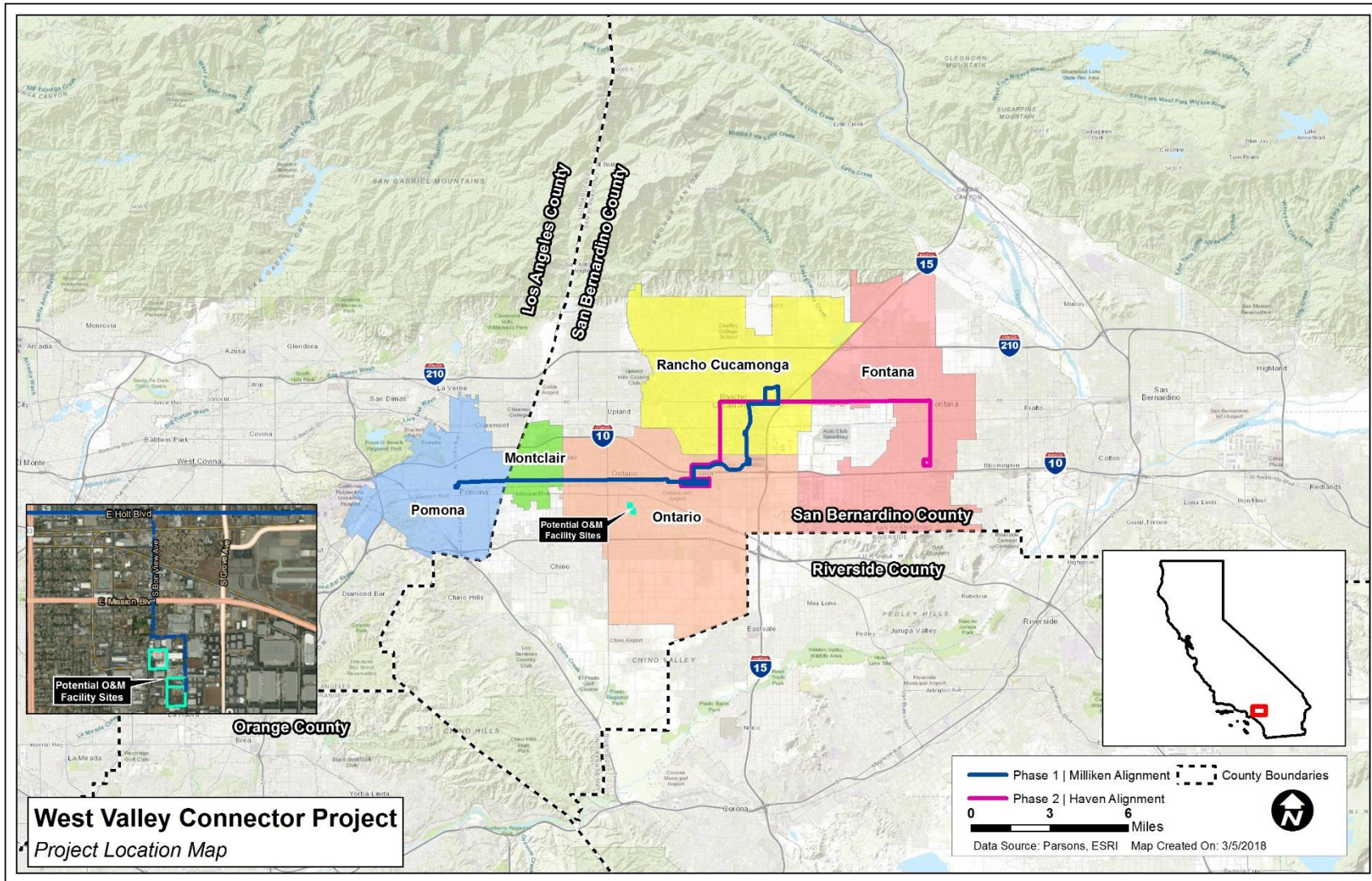


Figure 1-1: Project Location Map

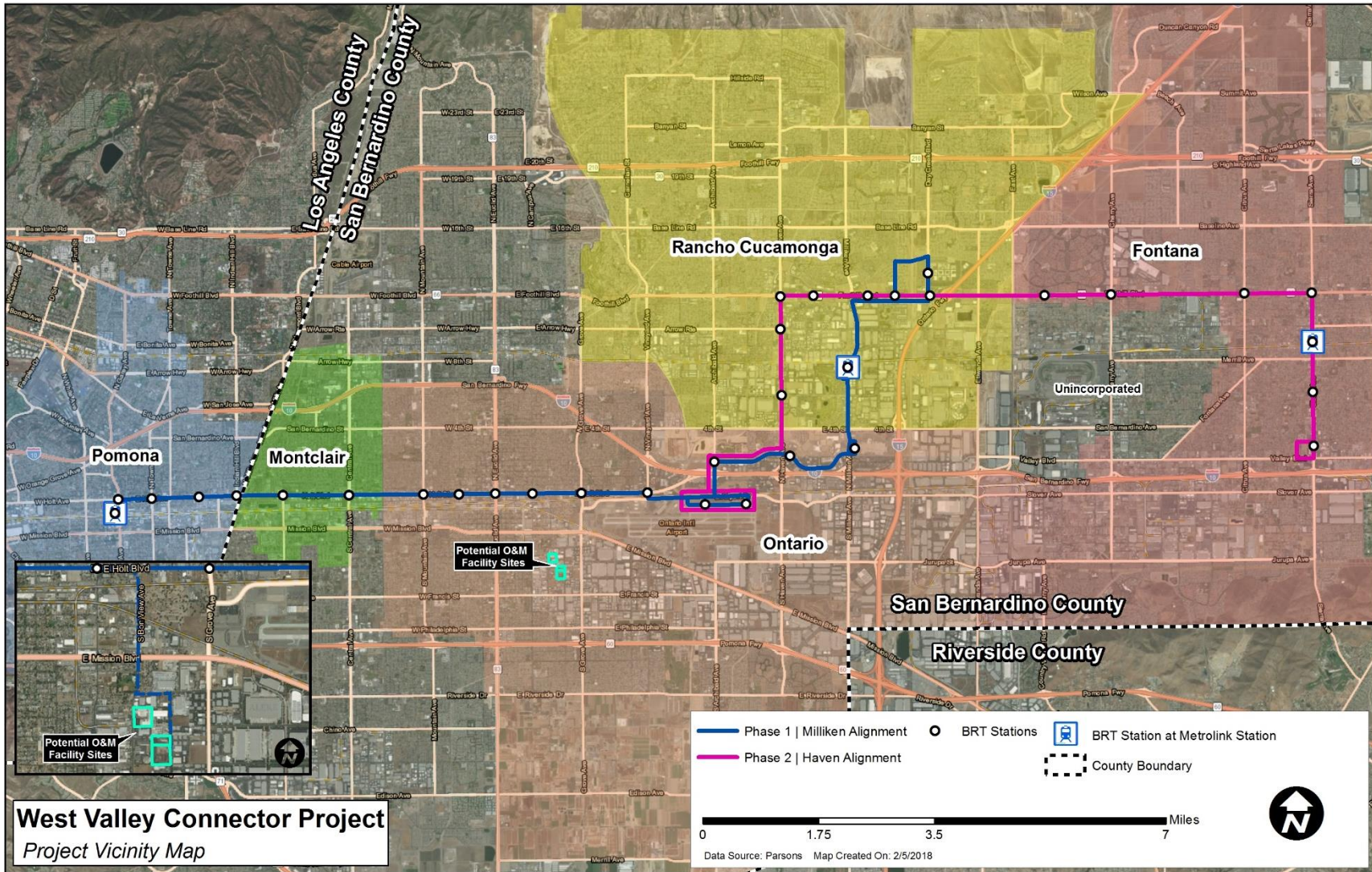


Figure 1-2: Project Vicinity Map



## 2.0 PROJECT DESCRIPTION

### 2.1 Proposed Project

The WVC Project is a 35-mile-long BRT corridor project located primarily along Holt Avenue/Boulevard and Foothill Boulevard that would connect the cities of Pomona, Montclair, Ontario, Rancho Cucamonga, and Fontana in the counties of Los Angeles and San Bernardino, California. The project proposes limited stops, providing speed and quality improvements to the public transit system within the corridor. The project includes BRT stations at up to 33 locations/major intersections and associated improvements, premium transit service, TSP and queue jump lanes, dedicated lanes, and integration with other bus routes.

The project alignment consists of two phases. Phase I of the project would construct the “Milliken Alignment,” from the Pomona Regional Transit Center (downtown Pomona Metrolink Station) to Victoria Gardens in Rancho Cucamonga. Phase II of the project would construct the “Haven Alignment,” from Ontario International Airport to Kaiser Permanente Medical Center in Fontana. The Phase I/Milliken Alignment would begin construction in 2020 and is proposed to have 10-minute peak and 15-minute off-peak headways. Phase II is intended to be constructed immediately following completion of Phase I, depending on the availability of funding.

#### *Phase I/Milliken Alignment*

Phase I of the project would construct the Milliken Alignment from the eastern city boundary limit of Pomona to Victoria Gardens in Rancho Cucamonga. In Pomona, the alignment starts from the Pomona Regional Transit Center station, travels along Holt Avenue and into Montclair.

In Montclair, the alignment runs on Holt Boulevard between Mills Avenue and Benson Avenue and into Ontario.

In Ontario, the alignment continues on Holt Boulevard, starting from Benson Avenue, and then continues to Vineyard Avenue and into Ontario International Airport (loop through Terminal Way). From the airport, it heads north on Archibald Avenue to Inland Empire Boulevard and turns right to go east on Inland Empire Boulevard.

On Inland Empire Boulevard, the alignment goes straight into Ontario Mills (loop through Mills Circle) and then heads north on Milliken Avenue into Rancho Cucamonga.

In Rancho Cucamonga, the alignment makes a loop into the Rancho Cucamonga Metrolink Station off Milliken Avenue and then continues up Milliken Avenue and turns east onto Foothill Boulevard.

The alignment continues east on Foothill Boulevard, turns north onto Day Creek Boulevard, and then terminates with a layover at Victoria Gardens at Main Street. From Victoria Gardens, the bus line begins a return route by continuing north on Day Creek Boulevard, turns west onto Church Street, turns south onto Rochester Avenue, and then turns west back onto Foothill Boulevard.

### *Phase II/Haven Alignment*

Phase II of the project would construct the Haven Alignment, from Ontario International Airport to Kaiser Permanente Medical Center in Fontana. In Ontario, the alignment makes a loop through Terminal Way at Ontario International Airport. From the airport, it heads north on Archibald Avenue to Inland Empire Boulevard and turns right and travels east on Inland Empire Boulevard.

From Inland Empire Boulevard, the alignment turns left to go north up Haven Avenue into Rancho Cucamonga, then turns right to go east onto Foothill Boulevard and into Fontana.

In Fontana, the alignment continues east on Foothill Boulevard until turning south onto Sierra Avenue. The alignment follows Sierra Avenue, including a stop at the Fontana Metrolink Station, and then continues until turning west onto Marygold Avenue, where the bus line would begin a turn-around movement by heading south onto Juniper Avenue, east onto Valley Boulevard, and north back onto Sierra Avenue to Kaiser Permanente Medical Center before heading northward for the return trip.

## **2.2 Project Alternatives**

Many alternatives were considered during the project development phase of the project. A No Build Alternative and two build alternatives (Alternatives A and B) are being analyzed in the EIR/EA.

### **2.2.1 No Build Alternative**

The No Build Alternative proposes no improvements to the existing local bus services. Under the No Build Alternative, the existing local bus service on Routes 61 and 66 would maintain current service of 15-minute headways (total of four buses per hour in each direction).

### **2.2.2 Build Alternatives**

Figure 2-1 presents the map of both build alternatives. All design features of both build alternatives are the same, as described in more details in Section 2.3, with the exception of the following:

### *Alternative A – Full BRT with no Dedicated Bus-only Lanes*

Alternative A would include the 35-mile-long BRT corridor, which is comprised of the Phase I/Milliken Alignment, Phase II/ Haven Alignment, and 60 side-running stations at up to 33 locations/major intersections. The BRT buses will operate entirely in the mixed-flow lanes. The right-of-way (ROW) limits and travel lane width vary in other segments of the corridor. Implementation of Build Alternative A will not require permanent or temporary ROW acquisition.

### *Alternative B – Full BRT with 3.5 miles of Dedicated Bus-only Lanes in Ontario*

Alternative B would include the full 35-mile-long BRT corridor, which is comprised of the Phase I/Milliken Alignment, Phase II/Haven Alignment, 3.5 miles of dedicated bus-only lanes, and five center-running stations and 50 side-running stations at up to 33 locations/ major intersections. The dedicated lanes segment would include two mixed-flow lanes and one transit lane in each direction and five center-running stations. To accommodate the dedicated lanes, roadway widening and additional utilities, such as electrical and fiber-optic lines, would require permanent and temporary ROW acquisition. In addition, some areas of the project corridor would require reconfiguration, relocation, or extension of adjacent driveways, curbs, medians, sidewalks, parking lots, and local bus stops.

## **2.3 Design Features of Build Alternatives**

### **2.3.1 Bus Rapid Transit Stations**

BRT stations at 33 locations/major intersections and associated improvements are proposed to be located approximately 0.5 to 1 mile apart to facilitate higher operating speeds by reducing dwell time (see Figure 1-2 and Figure 2-1 for station locations). Table 2-1 lists the BRT stations to be constructed as part of Phase I/Milliken Alignment. Note that under Alternative A, all 21 stations will be side-running stations. Under Alternative B, five center platform stations are proposed as follows:

- Holt Boulevard/Mountain Avenue
- Holt Boulevard/San Antonio Avenue
- Holt Boulevard/Euclid Avenue
- Holt Boulevard/Campus Avenue
- Holt Boulevard/Grove Avenue

As part of Phase II/Haven Alignment, an additional 12 side-running stations will be constructed for both build alternatives as list in Table 2-2.

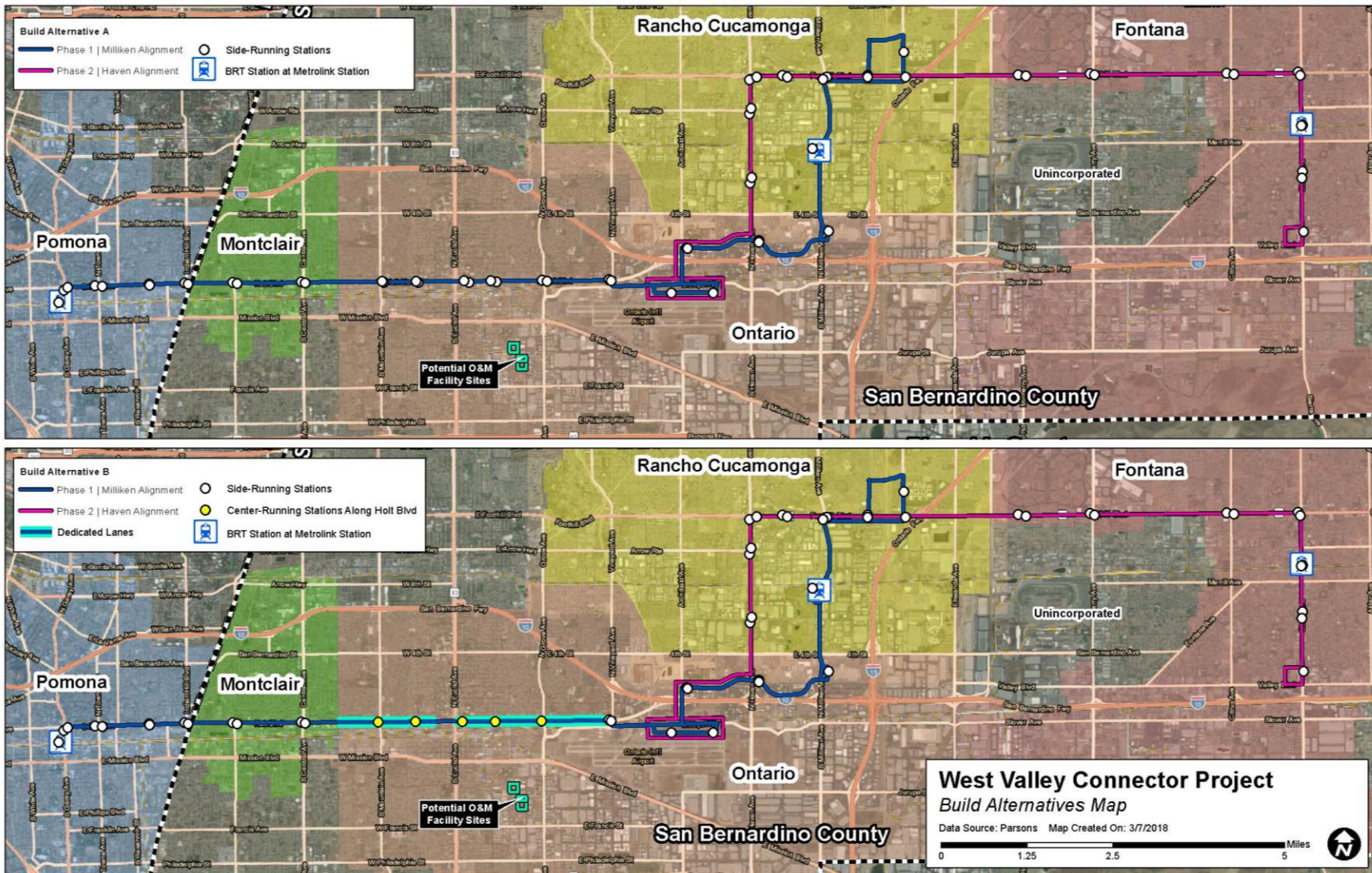


Figure 2-1: Build Alternatives Map

**Table 2-1: Stations along Phase I/Milliken Alignment**

City	Stations
Pomona	<ul style="list-style-type: none"> <li>• Pomona Regional Transit Center Station</li> <li>• Holt Avenue/Garey Avenue</li> <li>• Holt Avenue/Towne Avenue</li> <li>• Holt Avenue/Clark Avenue</li> <li>• Holt Avenue/Indian Hill Boulevard</li> </ul>
Montclair	<ul style="list-style-type: none"> <li>• Holt Boulevard/Ramona Avenue</li> <li>• Holt Boulevard/Central Avenue</li> </ul>
Ontario	<ul style="list-style-type: none"> <li>• Holt Boulevard/Mountain Avenue*</li> <li>• Holt Boulevard/San Antonio Avenue*</li> <li>• Holt Boulevard/Euclid Avenue*</li> <li>• Holt Boulevard/Campus Avenue*</li> <li>• Holt Boulevard/Grove Avenue*</li> <li>• Holt Boulevard/Vineyard Avenue</li> <li>• Ontario International Airport</li> <li>• Inland Empire Boulevard/Archibald Way</li> <li>• Inland Empire Boulevard/Porsche Way</li> <li>• Ontario Mills</li> </ul>
Rancho Cucamonga	<ul style="list-style-type: none"> <li>• Rancho Cucamonga Metrolink Station</li> <li>• Foothill Boulevard/Milliken Avenue</li> <li>• Foothill Boulevard/Rochester Avenue</li> <li>• Victoria Gardens between North and South Main Street</li> </ul>
Note: * denotes the center-running stations to be constructed under Alternative B.	

Source: Parsons, 2017

**Table 2-2: Additional Stations to be Constructed as Part of Phase II/Haven Alignment**

City	Stations
Rancho Cucamonga	<ul style="list-style-type: none"> <li>• Haven Avenue/6th Street</li> <li>• Haven Avenue/Arrow Route</li> <li>• Haven Avenue/Foothill Boulevard</li> <li>• Foothill Boulevard/Spruce Avenue</li> <li>• Foothill Boulevard/Day Creek Boulevard</li> </ul>
Fontana	<ul style="list-style-type: none"> <li>• Foothill Boulevard/Mulberry Avenue</li> <li>• Foothill Boulevard/Cherry Avenue</li> <li>• Foothill Boulevard/Citrus Avenue</li> <li>• Foothill Boulevard/Sierra Avenue</li> <li>• Fontana Metrolink Station</li> <li>• Sierra Avenue/Randall Avenue</li> <li>• Sierra Avenue/Kaiser Permanente</li> </ul>

Source: Parsons, 2017

### *Side-Running Stations*

Side-running stations would typically be located on the far side of an intersection to facilitate transit priority and to avoid a stopped bus from blocking those turning right from the corridor. Where curb cuts for driveways and other conditions do not provide enough space along the curbside for both the San Bernardino Valley Express (sbX) and the local bus on the far side of the intersection, the local buses would be located on the near side of the intersection.

In the side-running condition, stations may include new or improved shelters with passenger amenities, or only an sbX-branded pylon with signature light. Proposed shelters would be approximately 18 feet in length and a width that would fit a 10-foot-wide-minimum sidewalk. Passenger amenities at the side platform stations would include benches, bicycle racks, trash receptacles, variable message signs, security cameras, and lighting integrated with the shelter. There would be no fare collection equipment on the sidewalks or shelters when the available ROW is less than 10 feet, and the passengers may pay the fee on the bus. Side-running stations would also include various amenities.

For all stations in Rancho Cucamonga, only an sbX-branded pylon with signature light is proposed. Should shelters be implemented in the future, coordination between the City of Rancho Cucamonga and SBCTA would be required to environmentally clear the shelters at a later time.

### *Center Platform Stations*

As indicated in Section 2.3.1, five center-running platform stations are proposed to be constructed as part of the Phase I/Milliken Alignment (in Ontario) under Alternative B.

The center-running platform stations would be in the center of the street ROW on a raised platform with an end-block crossing. Access would be provided by crosswalks at intersections and Americans with Disabilities Act (ADA)-compliant ramps to the station platforms. Center-running platforms would be placed as close to the intersection as possible while still maintaining left-turn pockets, where required.

In the optimum center-running platform configuration, the platform would accommodate a canopy with its seating area, passenger amenities, fare equipment, and a ramp to comply with relevant accessibility requirements and provide clearance in front of ticket vending machines. Stations would include amenities that can be assembled and laid out to suit the functionality of the station and fit with the surrounding land uses.

### **2.3.2 sbX Bus Operations**

The proposed project would require 18 buses during the Phase I operation and increase to 27 buses for the Phase I and Phase II operation to serve the designed headways and have sufficient spare vehicles.

Under Alternative A, sbX buses would operate entirely in mixed-flow lanes along the proposed 35 miles of the Phase I and Phase II alignments. For Alternative B, sbX buses would operate in mixed-flow lanes similar to Alternative A, except where dedicated bus-only lanes (3.5 miles) are proposed along Holt Boulevard, between Benson Avenue and Vine Avenue and between Euclid Avenue and Vineyard Avenue, in Ontario.

Roadway sections where the sbX would operate in mixed-flow lanes would generally be kept as existing conditions, although some modifications, such as relocated curb and gutter, may be necessary near the stations to provide sufficient room for bus stopping and loading. Reconstruction of curb and gutters would only be required for the segment where dedicated bus-only lanes are proposed. Vehicular lanes where the sbX buses would operate in dedicated bus-only lanes would feature concrete roadways, painted or striped to visually separate the exclusive lanes from mixed-flow lanes. Transition areas from mixed-flow to exclusive lanes would be provided at each end of an exclusive lane location. Such transitions would be clearly marked to separate bus movements from other vehicular traffic. Reinforced concrete bus pad in the pavement would be placed at all station locations for the sbX buses.

sbX buses would operate from 6:00 a.m. to 8:00 p.m. with peak headways for 4 hours and off-peak headways for 10 hours per day for a total span of service of 14 hours per day, Monday through Friday. From the Pomona Metrolink Transit Center station to Inland Empire Boulevard, the sbX buses would operate on 10-minute peak headways and 15-minute off-peak headways. Additional service hours, including weekend service, may be added if additional operating funds become available in the future.

### **2.3.3 Operations and Maintenance**

#### ***Fleet Composition***

The proposed project's fleet would be comprised of 60-foot-long articulated compressed natural gas (CNG) propulsion buses. sbX buses would hold approximately 96 passengers at maximum capacity with up to 8 bicycles on board. Today, the average local bus operating speeds are only 12 to 15 miles per hour (mph), and they are getting slower as corridor congestion worsens. In calculating run times, it was assumed that the average dwell time at stations would be 30 seconds (peak service), and average overall speed would be 20 mph.

#### ***Maintenance Requirements and Associated Facilities***

Omnitrans operates and maintains its existing bus fleets from two major Operations and Maintenance (O&M) facilities: East Valley Vehicle Maintenance Facility (EVVMF), located at 1700 W. 5th Street in the City of San Bernardino and West Valley Vehicle Maintenance Facility (WVVMF), located at 4748 E. Arrow Highway in the City of Montclair. EVVMF is a Level III facility capable of full maintenance of buses and WVVMF is a Level II facility suitable for light maintenance. Neither facility has sufficient capacity to accommodate the

additional maintenance and storage requirements of the bus fleet associated with the proposed WVC Project.

The purpose of the new O&M facility is to provide operations and maintenance support to the existing full-service EVVMF. The new facility would be designed and constructed to provide Level I service maintenance with a capacity to be upgraded to provide Level II service maintenance. Heavy repair functions and administrative functions would remain exclusively with the EVVMF in San Bernardino.

### Facility Components

Conceptually, the new O&M facility would be built on an approximate 5-acre site. The Level I facility would include a parking area, bus washing area, fueling area, and a personnel and storage building. As needs arise, the facility could be upgraded to provide Level II service, which will include the addition of a maintenance shop and a larger administrative building. Landscaping and irrigation would be provided to enhance the comfort of employees and the appearance of the facility, and to help screen maintenance facilities and operations from offsite viewpoints within the community. Figure 2-2 shows the conceptual site plan of the Level II facility.

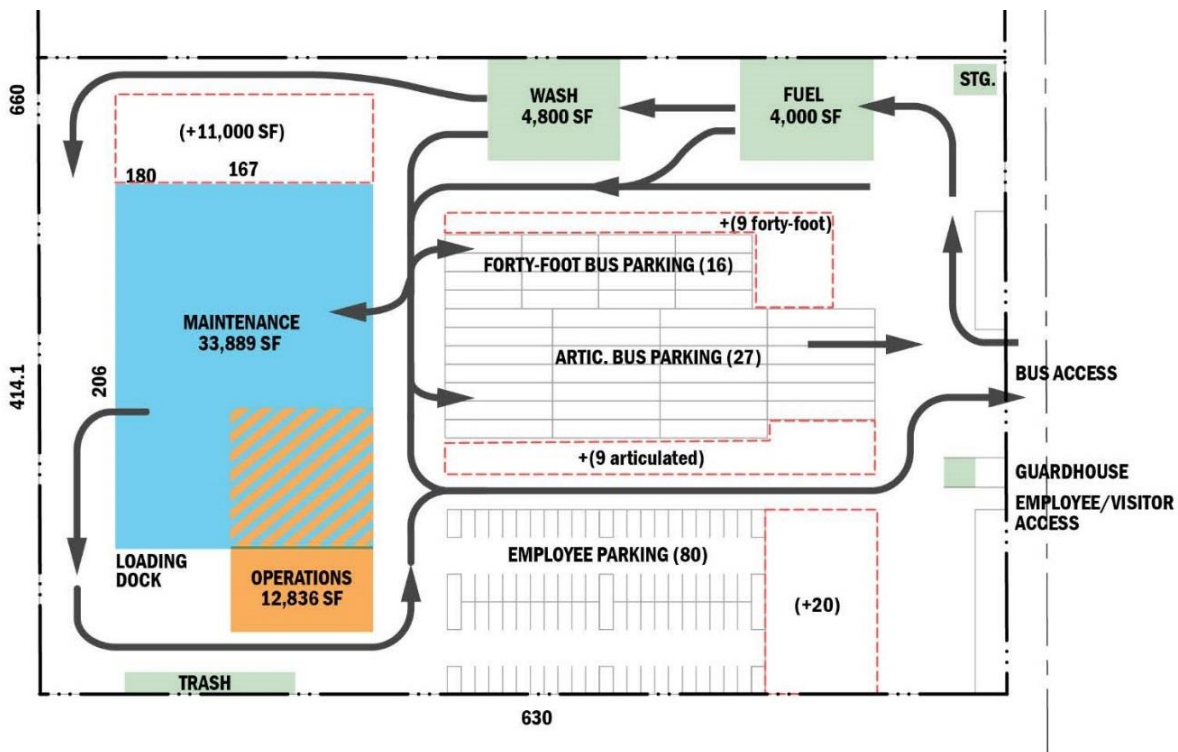


Figure 2-2: O&M Facility Conceptual Site Plan

Depending on the service level to be performed, approximately 50-100 staff would be using this facility including bus operators and O&M staff.



## Potential Sites

Three sites are being considered for the placement of the new O&M facility (see Figure 2-3). All are owned by the City of Ontario and are located in the industrial zoned area, slightly more than a mile from the proposed BRT corridor alignment on Holt Boulevard:

- Site 1: 1516 S. Cucamonga Avenue, Ontario (APN 1050-131-03-0000 and APN 1050-131-02-0000). The current use of this property is public works storage yard. If selected, the O&M facility will be built at the bottom portion of the parcel encompassing an area of approximately 6.0 acres.
- Site 2: 1440 S. Cucamonga Avenue, Ontario (APN 1050-141-07-0000). The current use of this property is compressed natural gas fueling station. If selected, the O&M facility will utilize the entire parcel encompassing an area of approximately 4.8 acres.

Site 3: 1333 S. Bon View Avenue, Ontario (APN 1049-421-01-0000 and APN 1049-421-02-0000). The current use of this property is municipal utility and customer service center. If selected, the O&M facility will be built at the bottom portion of the parcel encompassing an area of approximately 6.6 acres.

Buses coming to and from the new facility could use nearby access roads that directly connect to the BRT corridor such as South Campus Avenue, South Bon View Avenue, and South Grove Avenue.

The O&M facility will be constructed during the same period as the Phase I/Milliken Alignment and would be open for operation at the same time as the Phase I alignment. Construction duration is estimated at 12 months.

## 2.4 Implementation Schedule

Implementation of the proposed project is planned over the next 5 years and would entail many activities, including:

- Completion of the environmental compliance phase (March 2020)
- Completion of Preliminary Engineering (March 2020)
- Completion of Final Design (May 2021) and begin construction in early 2022.
- Completion of O&M facility (December 2023)
- Completion of Construction of Phase I/Milliken Alignment and testing (December 2023)
- System operation (begin revenue operation in December 2023)
- Construction of Phase II/Haven Alignment is scheduled to occur after completion of the Phase I/Milliken Alignment pending funding availability

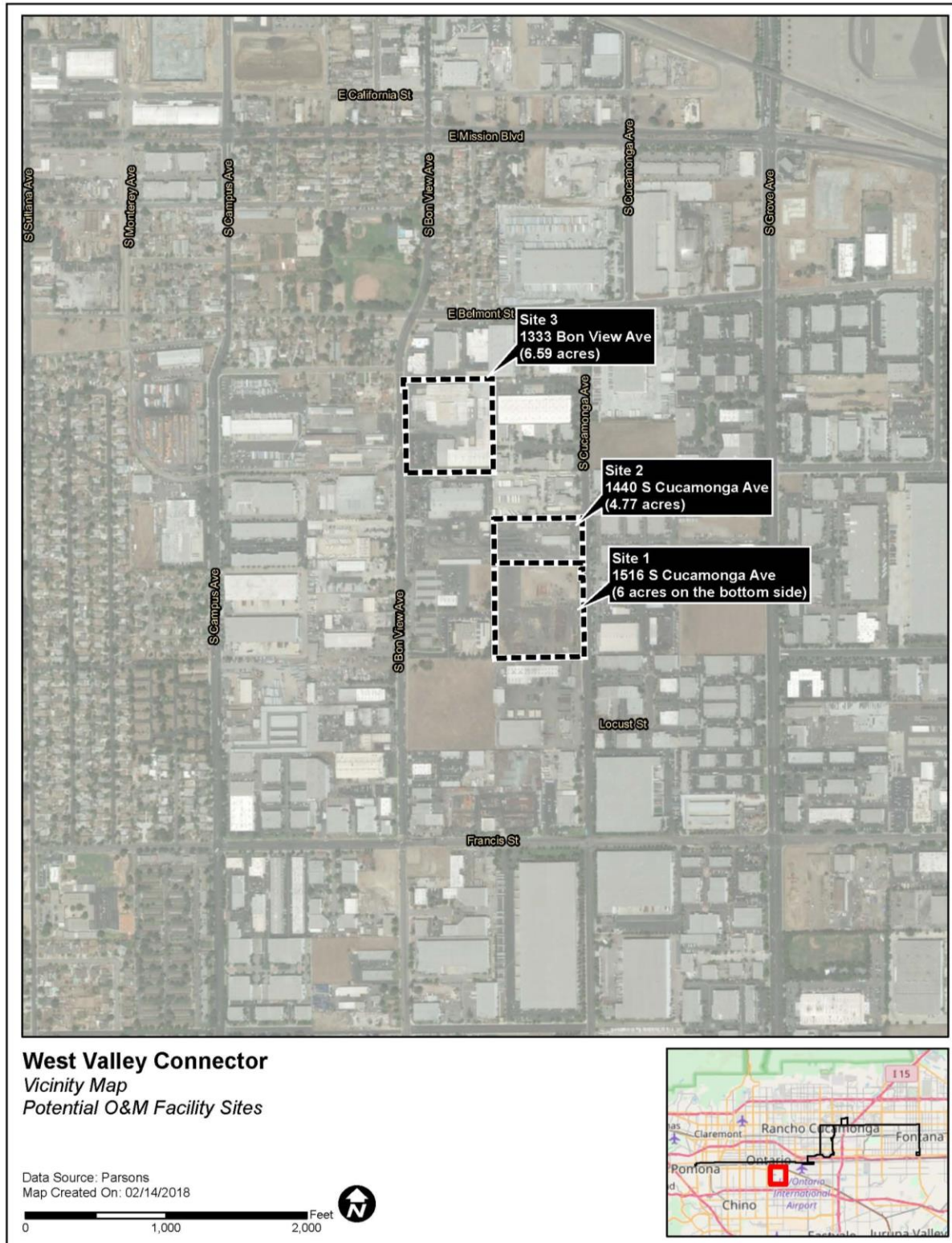


Figure 2-3: Potential Operations and Maintenance Facility Sites

### 3.0 REGULATORY FRAMEWORK

The Regulatory Framework discussion focuses on the following pollutants for which Ambient Air Quality Standards have been established at the federal and State levels. The concentrations of these pollutants in ambient air are used to characterize air quality throughout California and the rest of the country with the objective of protecting public health and the environment. The descriptions of each air pollutant and the potential adverse health effects associated with substantial exposures are based on information obtained from the SCAQMD.<sup>1</sup>

**Carbon Monoxide (CO):** CO is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere and is produced by both natural processes and human activities. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline. Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include the earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin. Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO, such as exercise or pulmonary disorders. Studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities.

**Ozone (O<sub>3</sub>):** O<sub>3</sub>, a colorless gas with a sharp odor, is a highly reactive form of oxygen. High O<sub>3</sub> concentrations exist naturally in the stratosphere. However, it is also formed in the atmosphere when volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) react in the presence of ultraviolet sunlight. The primary sources of VOC and NO<sub>x</sub>, which are the atmospheric precursors of O<sub>3</sub>, are automobile exhaust and industrial processes.

O<sub>3</sub> is a highly reactive oxidant that has a propensity for reacting with organic materials, causing it to be damaging to living cells and resulting in adverse health effects. O<sub>3</sub> predominantly enters the human body through the respiratory tract and can cause respiratory irritation and discomfort, can make breathing more difficult during exercise, and can also reduce the respiratory system's ability to remove inhaled particles and fight infection. Short-term exposure (lasting for a few hours) to O<sub>3</sub> at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes.

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<sup>1</sup> SCAQMD, Final Program Environmental Impact Report for the 2012 AQMP, December 7, 2012.

**Nitrogen Dioxide (NO<sub>2</sub>):** NO<sub>2</sub> is a reddish-brown gas with a bleach-like odor and is responsible for the brownish tinge of polluted air. NO<sub>2</sub> is typically released into the atmosphere as a constituent of a mixture of NO<sub>x</sub>. Another substantial contributor to NO<sub>x</sub> emissions is nitric oxide (NO), which is a colorless gas formed from the nitrogen and oxygen in air under conditions of high temperature and pressure that are generally present during combustion of fuels (e.g., motor vehicles). Complex chemical reactions govern the concentrations of NO<sub>x</sub> in the atmosphere. Upon being released into the air, NO reacts rapidly with the available oxygen to form NO<sub>2</sub>. In the presence of sunlight, NO<sub>2</sub> reacts to form NO and an oxygen atom, which can react further to form O<sub>3</sub> under certain environmental conditions.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO<sub>2</sub> at levels found in homes with gas stoves, which are higher than ambient levels found throughout Southern California. Short-term exposure to NO<sub>2</sub> in healthy subjects results in increased resistance to air flow and airway contraction. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. More recent studies have found associations between NO<sub>2</sub> exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms, and emergency room asthma visits.

**Sulfur Dioxide (SO<sub>2</sub>):** SO<sub>2</sub> is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid, which contributes to acid precipitation, and sulfates, which can contribute to airborne particulate matter. Main sources of SO<sub>2</sub> are coal and oil used in power plants and industries. Exposure of a few minutes to low levels of SO<sub>2</sub> can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO<sub>2</sub>. In asthmatics, an increase in resistance to air flow, as well as a reduction in breathing capacity and severe breathing difficulties, is observed after acute higher exposure to SO<sub>2</sub>. In contrast, healthy individuals do not exhibit similar acute responses even after exposure to higher concentrations of SO<sub>2</sub>.

**Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>):** Of great concern to public health are the particles small enough to be inhaled into the deepest parts of the lung. Major sources of respirable particulate matter of diameter less than 10 microns (PM<sub>10</sub>) include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. PM<sub>10</sub> can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis, and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of particulate matter.

Fine particulate matter of diameter less than 2.5 microns ( $PM_{2.5}$ ) results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities) and also residential fireplaces and wood stoves. Also,  $PM_{2.5}$  can be formed in the atmosphere from gases such as  $SO_2$ ,  $NO_x$ , and VOC. A consistent correlation between elevated ambient  $PM_{2.5}$  levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks, and the number of asthma-related hospital admissions has been observed in different parts of the United States and various areas around the world. Studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and increased mortality from lung cancer. Studies have also shown lung function growth in children is reduced with long-term exposure to particulate matter. In addition to children, the elderly, and people with pre-existing respiratory and/or cardiovascular disease appear to be more susceptible to the effects of  $PM_{10}$  and  $PM_{2.5}$ .

**Lead (Pb):** Lead in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters were historically the main sources of Pb emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in the atmospheric lead over the past three decades. Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. Fetuses, infants, and children are more sensitive than others to the adverse effects of lead exposure. In adults, increased lead levels are associated with increased blood pressure. Lead poisoning can cause anemia, lethargy, seizures, and death. Lead can be stored in the bone from early-age environmental exposure, and elevated blood lead levels can occur due to a breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bone tissue). Fetuses and breast-fed babies can be exposed to higher levels of lead because of previous environmental lead exposure of their mothers.

**Visibility-Reducing Particles:** Deterioration of visibility is one of the most obvious manifestations of air pollution and plays a major role in the public's perception of air quality. Visibility reduction from air pollution is often due to the presence of sulfur and  $NO_x$ , as well as PM. In Class-I wilderness areas, such as Lake Tahoe, which typically have visual range measured in tens of miles, the deciview metric is used to estimate an individual's perception of visibility. The deciview index works inversely to a visual range which is measured in miles or kilometers whereby a lower deciview is optimal. The SCAQMD does not assess visibility or measure visibility-reducing particles in the project area or the greater San Bernardino County area.

**Sulfates:** Sulfates are chemical compounds which contain the sulfate ion and are part of the mixture of solid materials which make up  $PM_{10}$ . Most of the sulfates in the atmosphere are produced by oxidation of  $SO_2$ . Most of the health effects resulting from exposure to fine

particles and SO<sub>2</sub> at ambient levels are also associated with sulfates. Thus, both mortality and morbidity effects have been observed with an increase in ambient sulfate concentrations. However, efforts to separate the effects of sulfates from the effects of other pollutants have generally not been successful. Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Due to the relatively low ambient concentrations in the region, the SCAQMD does not monitor sulfates at the San Bernardino County air quality monitoring stations near the alignment.

**Hydrogen Sulfide (H<sub>2</sub>S):** Hydrogen sulfide is a colorless, flammable, poisonous compound having a characteristic rotten-egg odor. It is used as a reagent and as an intermediate in the preparation of other reduced sulfur compounds. It is also a by-product of desulfurization processes in the oil and gas industries and rayon production, sewage treatment, and leather tanning. Geothermal power plants, petroleum production and refining, and sewer gas are specific sources of hydrogen sulfide in California. Exposure to extremely high concentrations of H<sub>2</sub>S has been documented to result in sudden occupational mortality. Due to the relatively low ambient concentrations in the region, the SCAQMD does not monitor hydrogen sulfide at the San Bernardino County air quality monitoring stations near the alignment.

**Vinyl Chloride:** Vinyl chloride is a colorless, flammable gas at ambient temperature and pressure. It is also highly toxic and is classified by the American Conference of Governmental Industrial Hygienists as A1 (confirmed carcinogen in humans) and by the International Agency for Research on Cancer as 1 (known to be a human carcinogen). At room temperature, vinyl chloride is a gas with a sickly-sweet odor that is easily condensed. However, it is stored as a liquid. Due to the hazardous nature of vinyl chloride to human health, there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product. It is an important industrial chemical chiefly used to produce polymer polyvinyl chloride. Vinyl chloride emissions are historically associated primarily with sources such as landfills. Due to the relatively low ambient concentrations in the region, the SCAQMD does not monitor vinyl chloride at the San Bernardino County air quality monitoring stations near the alignment.

## **3.1 Federal**

### **3.1.1 Clean Air Act**

The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the Clean Air Act (CAA), which governs air quality in the United States. The EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. It also establishes various emission standards, including those for vehicles sold in states other than California. The EPA is responsible for establishing health-protective limits on ambient concentrations of air pollutants, which are designated as the National Ambient Air Quality Standards (NAAQS), as shown in Table 3-1.

### 3.1.2 Transportation Conformity

Section 176(c)(1) (42 United States Code §7506) states that, “[n]o 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 or promulgated...” A transportation conformity analysis is required to ensure that federally-supported highway and transit project activities are consistent with the purpose of the applicable State Implementation Plan (SIP). Conformity with the CAA takes place on two levels; first, at the regional level and second, at the project level. The project must conform at both levels to be approved.

### 3.1.3 Mobile Source Air Toxics

The CAA made controlling air toxic emissions a national priority; therefore, Congress mandated that EPA regulates 188 air toxics. These substances are also known as hazardous air pollutants (HAPs). In its latest rule on the control of HAPs from mobile sources (72 Federal Register 8430), EPA identified a group of 93 compounds that are emitted from mobile sources and listed them in its Integrated Risk Information System. From this list of 93 compounds, EPA identified seven as priority mobile source air toxics (MSAT): acrolein, benzene, 1,3-butadiene, diesel particulate matter/diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. The high regulation priority of these seven MSATs was based on the EPA’s 1999 National Air Toxics Assessment.

In March 2001, the EPA issued regulations that required the producers of urban air toxics to decrease emissions of these pollutants by target dates in 2007 and 2020. As a result, on highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde will be reduced by 67 to 76% between 1990 and 2020. On-highway diesel particulate matter emissions will be reduced by 90%. These reductions are expected as a result of the national mobile-source control programs listed below.

**Table 3-1: State and Federal Air Quality Standards**

Pollutant	Averaging Time	California Standards <sup>1</sup>		National Standards <sup>2</sup>		
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>
Ozone (O <sub>3</sub> ) <sup>8</sup>	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m <sup>3</sup> )		0.070 ppm (137 µg/m <sup>3</sup> )		
Respirable Particulate Matter (PM <sub>10</sub> ) <sup>9</sup>	24 Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		—		
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>9</sup>	24 Hour	—	—	35 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	12.0 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m <sup>3</sup> )	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )		9 ppm (10 mg/m <sup>3</sup> )	—	
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>10</sup>	1 Hour	0.18 ppm (339 µg/m <sup>3</sup> )	Gas Phase Chemiluminescence	100 ppb (188 µg/m <sup>3</sup> )	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )		0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	
Sulfur Dioxide (SO <sub>2</sub> ) <sup>11</sup>	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )	Ultraviolet Fluorescence	75 ppb (196 µg/m <sup>3</sup> )	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1,300 µg/m <sup>3</sup> )	
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm <sup>11</sup>	—	
	Annual Arithmetic Mean	—		0.030 ppm <sup>11</sup>	—	
Lead <sup>12,13</sup>	30 Day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m <sup>3</sup> <sup>12</sup>	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m <sup>3</sup>		
Visibility Reducing Particles <sup>14</sup>	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	<b>No National Standards</b>		
Sulfates	24 Hour	25 µg/m <sup>3</sup>	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence			
Vinyl Chloride <sup>12</sup>	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography			

Source: California Air Resources Board, Ambient Air Quality Standards, May 4, 2016



**Table 3-1: State and Federal Air Quality Standards (continued)**

1.	California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM <sub>10</sub> , PM <sub>2.5</sub> , 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 arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM <sub>10</sub> , 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 <sup>3</sup> is equal to or less than one. For PM <sub>2.5</sub> , the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3.	Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4.	Any equivalent measurement method which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5.	National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6.	National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7.	Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8.	On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9.	On December 14, 2012, the national annual PM <sub>2.5</sub> primary standard was lowered from 15 µg/m <sup>3</sup> to 12.0 µg/m <sup>3</sup> . The existing national 24- hour PM <sub>2.5</sub> standards (primary and secondary) were retained at 35 µg/m <sup>3</sup> , as was the annual secondary standard of 15 µg/m <sup>3</sup> . The existing 24-hour PM <sub>10</sub> standards (primary and secondary) of 150 µg/m <sup>3</sup> also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10.	To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11.	On June 2, 2010, a new 1-hour SO <sub>2</sub> standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO <sub>2</sub> national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12.	The 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.
13.	The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m <sup>3</sup> as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14.	In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: California Air Resources Board, Ambient Air Quality Standards, May 4, 2016

- Reformulated gasoline program;
- New threshold for the toxic content of gasoline;
- National low-emission vehicle standards;
- Tier 3 motor vehicle emissions standards and gasoline sulfur-control requirements; and
- Heavy-duty engine and vehicle standards and on-highway diesel-fuel sulfur-control requirements.

## **3.2 State**

### **3.2.1 California Clean Air Act**

In addition to being subject to the requirements of CAA, air quality in California is governed by more stringent regulations under the California Clean Air Act (California CAA). The California CAA is administered by the California Air Resources Board (CARB) at the State level and the air quality management districts and air pollution control districts at the regional and local levels. CARB is responsible for meeting the State requirements of the CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA requires all air districts in the state to implement proactive measures to achieve and maintain the CAAQS, which are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The CAAQS are presented in Table 2-1 with the NAAQS.

CARB is responsible for setting emission standards for vehicles sold in California, as well as other sources of air pollutant emissions such as consumer products and certain off-road equipment. Additionally, CARB regulates passenger vehicle fuel specifications. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels.

### **3.2.2 Toxic Air Contaminant Programs**

California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs, including diesel particulate matter (DPM). Once a TAC is identified, CARB then adopts airborne toxic control measures for sources that emit that particular TAC. None of the TACs identified by CARB have a safe threshold; exposure to these TACs is therefore considered in terms of the long-term elevated health risk.

CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and certain other diesel-powered equipment. Over time, the replacement of older vehicles will result in a

vehicle fleet that produces fewer TACs compared with current conditions. Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, DPM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., low-emission vehicle/clean fuels, Phase II reformulated gasoline regulations) and control technologies. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will decrease over time.

### **3.3 Regional**

#### **3.3.1 South Coast Air Quality Management District**

The SCAQMD is the agency principally responsible for comprehensive air pollution control in the region. Specifically, the SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain the NAAQS and CAAQS. Programs include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. For example, the SCAQMD's Rule 403 Fugitive Dust is a control requirement for preventing, mitigating and controlling the release of airborne particulate matter (dust) emissions from earth moving activities. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The SCAQMD has jurisdiction over an area of 10,743 square miles, consisting of the South Coast Air Basin (Basin) and the Riverside County portion of the Salton Sea Air Basin and Mojave Desert Air Basin. The Basin subregion of the SCAQMD covers an area of 6,745 square miles. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east; and the San Diego County line to the south.

The SCAQMD is responsible for preparing the regional Air Quality Management Plan (AQMP). The AQMP is the SCAQMD plan for improving regional air quality. The AQMP provides policies and control measures that reduce emissions to attain both State and federal ambient air quality standards by their applicable deadlines. Environmental review of individual projects within the Basin must demonstrate that daily construction and operational emissions thresholds, as established by the SCAQMD, would not be exceeded. The environmental review must also demonstrate that individual projects would not increase the number or severity of existing air quality violations. The most recent iteration of the AQMP was published and in June 2016.<sup>2</sup> According to the SCAQMD, the 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. It represents a new approach,

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<sup>2</sup> SCAQMD, 2016 Draft Air Quality Management Plan, June 2016.

focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases and toxic risk, as well as efficiencies in energy use, transportation, and goods movement.

All projects in the SCAQMD jurisdiction are subject to SCAQMD rules and regulations, including:

- Rule 401, Visible Emissions, prohibits an air discharge that results in a plume that is as dark or darker than what is designated as No. 1 Ringelmann Chart by the United States Bureau of Mines for an aggregate of three minutes in any one hour; and
- Rule 402, Nuisance, prohibits the discharge of “such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of people or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property”; and
- Rule 403, Fugitive Dust, requires that future projects reduces the amount of particulate matter entrained in the ambient air as a result of fugitive dust sources by requiring actions to prevent, reduce, or mitigated fugitive dust emissions from any active operation, open storage pile, or disturbed surface area; and
- Rule 1113, Architectural Coatings, limits the VOC of architectural coatings used in the SCAQMD. These limits are application-specific and are updated as availability of low-VOC products expands; and
- Rule 1168, Adhesive and Sealant Applications, reduces emissions of VOCs and eliminates emissions of chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichloroethylene from the application of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers.

### **3.3.2 San Bernardino Council of Governments**

San Bernardino Council of Governments (SBCOG) is the council of governments and transportation planning agency for the County of San Bernardino. SBCOG is responsible for cooperative regional planning and furthering an efficient multi-modal transportation system Countywide. SBCOG actively participates in the regional planning activities of the Southern California Association of Governments (SCAG). SCAG’s planning area covers the counties of San Bernardino, Imperial, Los Angeles, Orange, Riverside, and Ventura. Members of the SANBAG Board of Directors serve on various SCAG committees and on the Regional Council, the governing board of SCAG.

Two of the principal activities of SCAG are the development of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) every four years, and the Federal Transportation Improvement Program (FTIP) every two years. SANBAG coordinates the input of local jurisdictions within San Bernardino County for inclusion of projects in the RTP

and FTIP. The most recent edition of the RTP/SCS, adopted in April 2016, is the 2016-2040 RTP/SCS.<sup>3</sup> The RTP/SCS provides a long-range framework for minimizing transportation impacts on the environment, improving regional air quality, protecting natural resources, and reducing air pollution. The most recent edition of the FTIP, adopted by SCAG on September 14, 2016 and approved by federal agencies on December 16, 2016, is the 2017 FTIP.<sup>4</sup> The FTIP is a capital listing of all transportation projects proposed over a six-year period for the SCAG region. The FTIP is prepared to implement projects and programs listed in the RTP/SCS.

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<sup>3</sup> SCAG, 2016-240 RTP/SCS, April 2016.

<sup>4</sup> SCAG, 2017 FTIP, September 14, 2016.

## **4.0 EXISTING CONDITIONS**

### **4.1 Climate and Meteorology**

#### **4.1.1 Climate**

The Basin is in an area of high air pollution potential due to its climate and topography.<sup>5</sup> The general region lies in the semi-permanent high-pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. It experiences warm summers, mild winters, infrequent rainfalls, light winds, and moderate humidity. This usually mild climatologic pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the west and high mountains around the rest of its perimeter. The mountains and hills within the area contribute to the variation of rainfall, temperature, and winds throughout the region.

Average highs during the summertime can reach the mid- to high-90s degrees Fahrenheit (°F), with maximum daily temperatures over 100°F common.<sup>6</sup> The annual average temperature in the project area is 66°F. Total precipitation in the project area averages approximately 15 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Wind in the project area predominantly blows from the southwest.<sup>7</sup>

#### **4.1.2 Sunlight**

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical O<sub>3</sub>. Under the influence of the ultraviolet radiation of sunlight, certain original or “primary” pollutants (mainly reactive hydrocarbons and oxides of nitrogen) react to form “secondary” pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind from the emission sources. Due to the prevailing daytime winds and time-delayed nature of photochemical O<sub>3</sub>, oxidant concentrations are highest in the inland areas of Southern California.

#### **4.1.3 Temperature Inversion**

Temperature normally declines with altitude. A reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the earth’s surface to the inversion base is known as the mixing height. With persistent low inversions and cool coastal air, morning fog and low stratus clouds are common. Cloudy days are less likely in the eastern portions of the Basin and about 25 percent more likely along the coast.

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<sup>5</sup> SCAQMD, 2012 Air Quality Management Plan, February 2013.

<sup>6</sup> Western Regional Climate Center, Historical Climate Information, July 2016.

<sup>7</sup> SCAQMD, Meteorological Stations & Years of Metrological Data Provided in 2006-2012, July 2016.

The vertical dispersion of air pollutants in the Basin is limited by temperature inversions in the atmosphere close to the earth's surface.

Inversions are generally lower in the nighttime when the ground is cool, than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the mid- to late-afternoon on a hot summer day when O<sub>3</sub> appears to clear suddenly. Winter inversions typically break earlier in the day, preventing excessive contaminant build-up.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into San Bernardino County. In the winter, the greatest pollution problems are CO and oxides of nitrogen because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form photochemical O<sub>3</sub>.

## 4.2 Monitored Data

The CARB and SCAQMD maintain a network of air quality monitoring stations located throughout the Basin to characterize the air quality environment by measuring and recording pollutant concentrations in the local ambient air. The Basin is divided into 38 source receptor areas (SRAs) that each contains an air quality monitoring station. Ambient concentrations of O<sub>3</sub>, CO, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are measured at these sites to represent air quality within the SRA. Air quality within the Basin has improved substantially over the past several decades due to extensive regulatory and planning efforts to reduce emissions of air pollutants from mobile and stationary sources. Much of the decrease in ambient concentrations can be attributed to enhanced fuel composition and engine efficiency in vehicles and the implementation of air pollution control devices.

The 35-mile Project corridor is predominantly located in SRAs 33 (Southwest San Bernardino Valley) and 34 (Central San Bernardino Valley). The monitoring stations relied upon to represent air quality conditions within these SRAs are located in Ontario and Fontana (Figure 4-1). Table 4-1 presents the State and federal standards, maximum recorded concentrations for the past five years, and the frequencies of standards being exceeded at the monitoring stations. The Ontario monitoring station is not equipped to record concentrations of CO, O<sub>3</sub>, NO<sub>2</sub>, or SO<sub>2</sub>; this data has been supplemented with concentrations measured at the Fontana monitoring station.

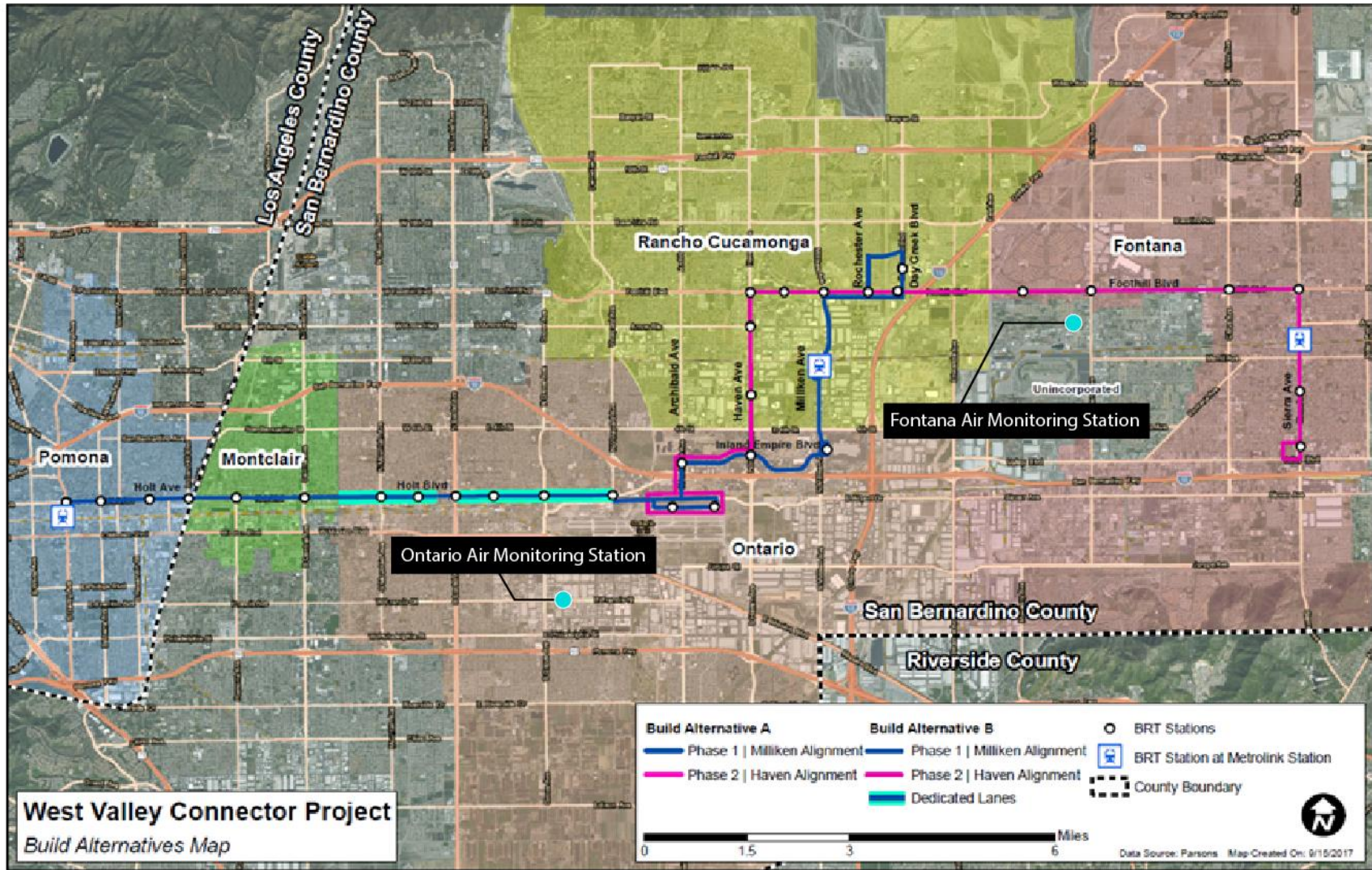


Figure 4-1: Air Monitoring Stations



**Table 4-1: Air Quality Monitoring Data**

Pollutant	Air Quality Standards	Maximum Concentrations and Annual Frequencies of Exceeded Standards				
		2012	2013	2014	2015	2016
<b>Pomona Monitoring Station</b>						
CO	Maximum 8-hr concentration (ppm)	1.5	1.5	1.6	1.6	1.3
	Days > 9.0 ppm (Federal 8-hr standard)	0	0	0	0	0
	Days > 9 ppm (State 8-hr standard)	0	0	0	0	0
O <sub>3</sub>	Maximum 1-hr Concentration (ppm)	0.117	0.125	0.123	0.136	0.127
	Days > 0.09 ppm (State 1-hr standard)	21	12	22	30	20
	Days > Federal 1-hr standard [Revoked]	0	1	0	2	1
	Maximum State 8-hr Concentration (ppm)	0.092	0.099	0.099	0.098	0.092
	Days > 0.070 ppm (State 8-hr standard)	28	22	53	53	26
	Days > 0.070 ppm (Federal 8-hr standard)	28	22	53	53	26
NO <sub>2</sub>	Maximum 1-hr Concentration (ppm)	0.082	0.079	0.089	0.072	0.069
	Days > 0.18 ppm (State 1-hr standard)	0	0	0	0	0
	Days > 0.10 ppm (Federal 1-hr standard)	0	0	0	0	0
	Annual Arithmetic Mean (ppm)	0.021	0.022	0.022	0.021	0.020
	Exceed State Standard? (0.03 ppm)	No	No	No	No	No
	Exceed Federal Standard? (0.053 ppm)	No	No	No	No	No
<b>Ontario Monitoring Station</b>						
PM <sub>10</sub>	Maximum 24-hr Concentration (µg/m <sup>3</sup> )	59.0	117.0	67.0	n/a	n/a
	Days > 50 µg/m <sup>3</sup> (State 24-hr standard)	4	3	3	n/a	n/a
	Days > 150 µg/m <sup>3</sup> (Federal 24-hr standard)	0	0	0	n/a	n/a
	Annual Arithmetic Mean (µg/m <sup>3</sup> )	31.9	35.0	34.2	n/a	n/a
	Exceed State Standard (20 µg/m <sup>3</sup> )	Yes	Yes	Yes	n/a	n/a
PM <sub>2.5</sub>	Maximum 24-hr Concentration (µg/m <sup>3</sup> )	35.2	49.3	38.4	52.7	49.5
	Days > 35 µg/m <sup>3</sup> (Federal 24-hr standard)	0	1	1	n/a	n/a
	Annual Arithmetic Mean (µg/m <sup>3</sup> )	12.4	12.6	n/a	14.3	14.8
	Exceed State Standard? (12 µg/m <sup>3</sup> )	Yes	Yes	n/a	Yes	Yes
	Exceed Federal Standard? (12.0 µg/m <sup>3</sup> )	Yes	Yes	n/a	Yes	Yes
<b>Fontana Monitoring Station</b>						
CO	Maximum 8-hr concentration (ppm)	1.8	1.2	1.3	1.2	1.0
	Days > 9.0 ppm (Federal 8-hr standard)	0	0	0	0	0
	Days > 9 ppm (State 8-hr standard)	0	0	0	0	0

Pollutant	Air Quality Standards	Maximum Concentrations and Annual Frequencies of Exceeded Standards				
		2012	2013	2014	2015	2016
O <sub>3</sub>	Maximum 1-hr Concentration (ppm)	0.142	0.151	0.127	0.133	0.139
	Days > 0.09 ppm (State 1-hr standard)	60	34	31	36	34
	Days > Federal 1-hr standard [Revoked]	5	2	1	3	3
	Maximum State 8-hr Concentration (ppm)	0.110	0.122	0.105	0.111	0.105
	Days > 0.070 ppm (State 8-hr standard)	88	68	52	59	49
	Days > 0.070 ppm (Federal 8-hr standard)	62	42	37	39	49
NO <sub>2</sub>	Maximum 1-hr Concentration (ppm)	0.069	0.082	0.070	0.089	0.072
	Days > 0.18 ppm (State 1-hr standard)	0	0	0	0	0
	Days > 0.10 ppm (Federal 1-hr standard)	0	0	0	0	0
	Annual Arithmetic Mean (ppm)	0.022	0.021	n/a	0.018	0.018
	Exceed State Standard? (0.03 ppm)	No	No	n/a	No	No
	Exceed Federal Standard? (0.053 ppm)	No	No	n/a	No	No
SO <sub>2</sub>	Maximum 24-hr Concentration (ppm)	0.004	0.001	n/a	n/a	n/a
	Days > 0.04 ppm (State 24-hr standard)	0	n/a	n/a	n/a	n/a
PM <sub>10</sub>	Maximum 24-hr Concentration (µg/m <sup>3</sup> )	67.0	90.0	68.0	96.0	94.0
	Days > 50 µg/m <sup>3</sup> (State 24-hr standard)	5	15	10	13	n/a
	Days > 150 µg/m <sup>3</sup> (Federal 24-hr standard)	0	0	0	0	n/a
	Annual Arithmetic Mean (µg/m <sup>3</sup> )	34.3	40.7	39.7	34.4	38.4
	Exceed State Standard (20 µg/m <sup>3</sup> )	Yes	Yes	Yes	Yes	Yes
PM <sub>2.5</sub>	Maximum 24-hr Concentration (µg/m <sup>3</sup> )	39.9	43.6	34.9	50.5	58.8
	Days > 35 µg/m <sup>3</sup> (Federal 24-hr standard)	3	1	0	3	1
	Annual Arithmetic Mean (µg/m <sup>3</sup> )	12.8	12.2	n/a	11.0	12.3
	Exceed State Standard? (12 µg/m <sup>3</sup> )	Yes	Yes	n/a	No	Yes
	Exceed Federal Standard? (12.0 µg/m <sup>3</sup> )	Yes	Yes	n/a	No	Yes

Source: California Air Resources Board, Air Quality Data Statistics, July 2016; US Environmental Protection Agency, AirData Map, 2017.

### 4.3 Attainment Status

The EPA and CARB designate areas as nonattainment, attainment, or maintenance with NAAQS and CAAQS based on trends in monitoring data. A region is nonattainment if one or more of the monitoring stations in the region measure a violation of the relevant standard and the EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but currently meet the standard may be officially re-designated to attainment by the EPA and are then called maintenance areas. The attainment status of the area in which the Project is located is shown in Table 4-2. According to the NAAQS, the San Bernardino County portion of the Basin is designated by the EPA as

a nonattainment area for O<sub>3</sub> and PM<sub>2.5</sub>, and a maintenance area for PM<sub>10</sub>, CO, and NO<sub>2</sub>. The CARB designated the project area as nonattainment for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>.

**Table 4-2: National and State Attainment Status**

Pollutant and Averaging Period	National Status	State Status
Carbon Monoxide	Maintenance (Serious)	Attainment
Lead	Nonattainment (LA County)	Attainment
Nitrogen Dioxide	Maintenance	Attainment
Sulfur Dioxide	Attainment	Attainment
Ozone - 1-Hour	Revoked NAAQS	Nonattainment
Ozone - 8-Hour	Nonattainment (Extreme)	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Nonattainment	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> ) - 24-Hour	Nonattainment (Serious)	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> ) - Annual	Nonattainment (Moderate)	Nonattainment
Particulate Matter (PM <sub>10</sub> )	Maintenance (Serious)	Nonattainment

Source: EPA, *Status of SIP Requirements for Designated Areas, July 31, 2016*; CARB, *State Standard Area Designations, May 5, 2016*

#### 4.4 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. According to CARB, sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality).<sup>8</sup> Land uses where sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities.

According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.<sup>9</sup> Land uses in the vicinity of the 35-mile project corridor include residential, educational, industrial, commercial, institutional, and recreational facilities. Refer to the Community Services and Public Facilities section of the Draft Environmental Document for locations of schools, parks, and recreational facilities, and religious or civic institutions that may be considered sensitive receptors. Additionally,

<sup>8</sup> CARB, *Air Quality and Land Use Handbook: A Community Health Perspective*, April 2005.

<sup>9</sup> SCAQMD, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, May 6, 2005.

portions of the project corridor transect residential communities. Refer to the Land Use section for locations of residential land use designations.

## 5.0 IMPACTS ANALYSIS

### 5.1 Impact Criteria and Significance Thresholds

#### 5.1.1 National Environmental Policy Act

According to the Council on Environmental Quality regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508), the determination of a significant impact is a function of both context and intensity. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Both short- and long-term effects are relevant. Intensity refers to the severity of impact. To determine significance, the severity of the impact must be examined in terms of the type, quality and sensitivity of the resource involved; the location of the Project; the duration of the effect (short- or long-term) and other consideration of context. Adverse impacts will vary with the setting of the proposed action and the surrounding area.

Based on the EPA's transportation conformity rule (40 CFR Parts 51 and 93) and federal air quality regulations, the Build Alternatives would have an adverse effect on air quality if it were to result in the conditions listed below.

- The design and scope of the Build Alternatives would be inconsistent with the RTP/SCS or FTIP.
- The Build Alternatives would worsen existing or contribute to new localized CO or PM hot-spots.
- The Build Alternatives would generate substantial levels of MSAT emissions.

A project's air quality impacts are considered significant under the CAA if project emissions cause or contribute to ambient air concentrations that exceed a NAAQS.

#### 5.1.2 California Environmental Quality Act

In accordance with Appendix G of the CEQA Guidelines, the project would result in a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of an air quality plan;
- Violate an air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase in any criteria pollutant and the region being classified as a nonattainment area under a federal or State ambient air quality standard, including through a release of emissions that exceed quantitative thresholds for ozone precursors;
- Expose sensitive receptors to substantial pollutant concentrations; and/or

- Create objectionable odors that would affect a substantial number of people.

Because of the SCAQMD’s regulatory role in the Basin, the significance criteria and analysis methodologies in the SCAQMD’s CEQA Air Quality Handbook are used in evaluating project impacts. Regional significance thresholds are shown in Table 5-1.

**Table 5-1: Regional Emission Thresholds**

Pollutant	Construction (Pounds Per Day)	Operations (Pounds Per Day)
Volatile Organic Compounds (VOC)	75	55
Nitrogen Oxides (NO <sub>x</sub> )	100	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SO <sub>2</sub> )	150	150
Respirable Particulates (PM <sub>10</sub> )	150	150
Fine Particulates (PM <sub>2.5</sub> )	55	55

*Source: SCAQMD, CEQA Air Quality Handbook, 1993*

In addition to regional significance thresholds, SCAQMD has developed specific CEQA localized significance thresholds (LSTs). According to the SCAQMD, localized emissions at project sites would result in a significant air quality impact if air pollutant concentrations exceed the following threshold values:

- Localized concentrations of CO exceed the one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm;
- Localized concentrations of NO<sub>2</sub> exceed the one-hour standard of 0.18 ppm; and/or
- Localized concentrations of PM<sub>2.5</sub> or PM<sub>10</sub> exceed 10.4 µg/m<sup>3</sup>.

The LST values were derived to prevent violations of these localized concentrations. The location-specific LST values are based on the regional air quality within each SRA, the size of the project site (i.e., 1, 2, or 5 acres), and the proximity of sensitive receptors (i.e., 25, 50, 100, 200, or 500 meters). The majority of the corridor is located in SRAs 33 (Southwest San Bernardino Valley) and 34 (Central San Bernardino Valley), with the western end extending into SRA 10 (Pomona-Walnut Valley).

The LST values for SRAs 10, 33, and 34 are shown in Table 5-2. Based on the 35-mile linear configuration of the project, the LSTs were selected under the assumption that, at any one location, no more than 0.3 acre would be disturbed per day under Alternative A and no more than 2.6 acres would be disturbed per day under Alternative B. Alternative A does not involve additional lane installation, and would therefore have a smaller footprint during construction than Alternative B. Receptors would be situated within 25 meters of the construction site at various locations along the project corridor. The most conservative—or

lowest—LSTs applicable to the three SRAs were used as the thresholds for the localized construction emissions analysis.

**Table 5-2: Localized Significance Thresholds**

Criteria Pollutant	Localized Significance Threshold (Pounds Per Day) /a,b/					
	Pomona-Walnut Valley Source Receptor Area (10)		Southwest SB Valley Source Receptor Area (33)		Central SB Valley Source Receptor Area (34)	
	1-Acre	2-Acre	1-Acre	2-Acre	1-Acre	2-Acre
Nitrogen Oxides (NO <sub>x</sub> )	103	149	118	170	118	170
Carbon Monoxide (CO)	612	885	863	1,232	667	972
Particulates (PM <sub>10</sub> )	4	6	5	6	4	7
Fine Particulates (PM <sub>2.5</sub> )	3	4	4	5	3	4

/a/ Localized significance thresholds are based on a 25-meter receptor proximity.  
 /b/ Project sites larger than five acres require AERMOD dispersion modeling with comparison to California Ambient Air Quality Standards.

Source: SCAQMD, 2009.

Additionally, the SCAQMD has stated that a proposed project would generate significant emissions of TACs that exceed a Maximum Incremental Cancer Risk of 10 in one million, a Cancer Burden of 0.5 excess cancer cases, or a Chronic or Acute Hazard Index of 1.0. No specific threshold has been established for assessing potential impacts from odors.

## 5.2 Methodology

Implementation of the project would generate emissions of air pollutants temporarily during construction activities and continually during operation following completion of the BRT line. A combination of air quality modeling tools was utilized to characterize emissions from construction of the project as well as future operations with and without implementation of the project throughout the traffic study area. Emissions of air pollutants were estimated separately for the temporary construction activities and the long-term operational conditions associated with the corridor components of the project. Air pollutant emissions associated with construction and operation of the proposed O&M facility were estimated using the California Emissions Estimator Model (CalEEMod Version 2016.3.2). Emissions associated with construction activities and future operations were quantified for the No Build Alternative and Alternatives A and B.

Construction of the corridor components of the project would occur in several phases, including site clearing, grading and excavation, utilities and sub-grade installations, and paving. During each phase of construction, emissions of air pollutants would be generated by the use of heavy duty construction equipment, worker travel to and from the project site, material import and export using haul trucks, and fugitive dust sources such as material movement. Emissions of air pollutants associated with heavy-duty equipment exhaust were quantified in the Road Construction Emissions Model (RCEM) Version 8.1.0, June 2016 using emission factors from the OFFROAD emission factors inventory, which are expressed in emissions per hour of equipment use. The OFFROAD emission factors inventory was compiled by the CARB, and the construction emissions model was assembled by the Sacramento Metropolitan Air Quality Management District to assist in estimating emissions of air pollutants from road construction projects.

In addition to the equipment exhaust emissions, the RCEM produced estimates of air pollutant emissions from worker travel and haul trucks used to transport material to and from the project site. Emissions factors for the worker vehicles and haul trucks were obtained from EMFAC2014—the CARB on-road emission factors inventory model—and incorporated into the RCEM analysis. EMFAC2014 yields emissions factors based on vehicle miles traveled (VMT). Emissions were quantified based on anticipated workforce requirements and volumes of material import and export for haul truck trips. Finally, the RCEM also generated estimates of fugitive particulate matter emissions from material movement on the project site during the clearing and grading and excavation phases. Detailed construction information is not available at this point in the design process. The analysis relied on general information provided by the project team and RCEM default assumptions. Key inputs to the model are presented in Table 5-3.

**Table 5-3: Roadway Construction Emissions Model Input Variables**

Parameter	Alternative A	Alternative B
<b>Phase I</b>		
Construction Start Year	2021	2021
Duration	Up to 20 Months	Up to 24 Months
Maximum Acreage Disturbed per Day (acres)	0.3	2.6
<b>Phase II</b>		
Construction Start Year	2023	2023
Duration	12 months	12 months
Maximum Acreage Disturbed per Day (acres)	0.3	0.3

Source: Parsons, 2018

Operational air pollutant emissions associated with implementation of the project corridor would result from vehicular traffic along the BRT corridor that could potentially be affected by the installation of the additional lane(s). Vehicular traffic would represent mobile



emissions sources, while the BRT stations would be considered stationary sources. Mobile source emissions were quantified using the CARB EMFAC2014 model for on-road mobile sources. The EMFAC2014 model generated exhaust emissions factors. The model also includes PM emissions from brake and tire wear on the roadways. Emissions factors from the EPA AP-42 handbook were relied upon to calculate PM emissions associated with re-entrained dust. Emissions were calculated based on speed distribution and truck percentage data throughout the traffic study area for existing conditions (2016), and opening year (2023) and horizon year (2040) scenarios. For the 2023 and 2040 scenarios, emissions estimates were prepared for the No Build Alternative, as well as Alternatives A and B.

In addition to roadway work to accommodate the project and changes to regional circulation patterns, construction and operation of the O&M facility would generate sources of short-term and permanent air pollutant emissions, respectively. Air pollutant emissions that will be generated by construction and operation of the O&M facility were estimated using the California Emissions Estimator Model (CalEEMod, Version 2016.3.2), which is the preferred regulatory tool for quantifying estimates of air pollutant emissions associated with land use development projects. Information describing the O&M facility was obtained from the O&M Facility Needs Assessment Report. Construction of the O&M facility would occur during Phase I construction for both Alternative A and Alternative B, concurrent with Milliken alignment construction.

Under Alternative B, the dedicated lane road widening activities in Ontario are anticipated to be completed during the first half of Phase I, and construction of the O&M facility will occur during the latter half of Phase I. Operation of the O&M facility is anticipated to be consistent with operation of Phase I of the proposed project, beginning in 2023.

Documentation for all emissions factors and estimated project emissions can be found in Appendix A.

## **5.3 Impact Analysis**

### **5.3.1 NEPA Analysis**

This section of the report examines the degree to which the project alternatives may cause adverse or significant changes in air quality. The assessment addresses both temporary air pollutant emissions associated with construction activities, and operational emissions under existing conditions and future scenarios for the no build and project alternatives. Emissions of air pollutants that would be generated by the project are discussed in the context of Transportation Conformity, MSAT, regional criteria pollutants and ozone precursors, and temporary construction activities.

## *Transportation Conformity*

The conformity requirement is based on CAA Section 176(c), which prohibits the U.S. Department of Transportation and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to the SIP for attaining the NAAQS. Transportation conformity applies to highway and transit projects and is enforced at both the regional level—which is the planning and programmatic level—and the project level. The project must conform at both levels to be approved.

## **Regional Conformity**

Regional conformity for a given project is analyzed by determining if the project was included in a conforming RTP or FTIP with substantially the same design concept and scope that was used for the regional conformity analysis. Accordingly, the regional conformity analysis was conducted by comparing the project's design, concept, and scope to its description in the 2016 RTP/SCS and associated air quality analyses. The project is included in the 2016 RTP/SCS Transportation System Financially-Constrained Project List as a San Bernardino County transit project under the RTP ID 4120213. The project is described as the, "West Valley Connector BRT from Pomona Metrolink Station to Sierra Ave." FTA and the Federal Highway Administration (FHWA) approved the 2016 RTP/SCS conformity analysis on June 1, 2016. No significant changes have been made to the project design since the 2016 RTP/SCS was prepared and published, although the estimated opening year has changed from 2025 to 2023.

SBCTA is coordinating with SCAG to amend the 2016 RTP/SCS and the amendment will be completed in 2018 well before FTA issues the Record of Decision for the project. As the project is financially constrained, it would not require federal operations and maintenance funds. Financially constrained projects are those that have adequate revenue available to cover costs and are not included in the FTIP. Therefore, the project's regional conformity determination requirement is satisfied.

## **Project-Level Conformity**

Conformity requires demonstration that the project will not result in a new local CO, PM<sub>10</sub>, or PM<sub>2.5</sub> air quality standard violation or worsen existing violations.

**Carbon Monoxide Hot-Spot Analysis.** CO hot-spot analysis is required under the EPA Transportation Conformity regulations for non-exempt projects in nonattainment or maintenance areas for CO. The portion of San Bernardino County in the Basin is designated as Maintenance-Serious for CO. SCAQMD air quality monitoring stations have not recorded a violation of the federal CO standards since at least 2003, when the CO maintenance plan for the Basin was approved. CO concentrations throughout California have steadily declined over time as vehicle engines have become more efficient and less polluting. In fact, since 2013, the SCAQMD has ceased reporting of measured CO concentrations following a

decade without a single air quality standard violation. The SCAQMD acknowledges that on a regional, level CO concentrations are unlikely to increase.

The Caltrans Transportation Project-Level Carbon Monoxide Protocol (CO Protocol) may be used to determine the potential CO hot-spots. The CO Protocol was published in 1997 when CO was a local pollutant of concern.<sup>10</sup> The procedures and guidelines comply with the following regulations without imposing additional requirements: Section 176(c) of the 1990 FCAA Amendments, federal conformity rules, State and local adoptions of the federal conformity rules, and the CEQA requirements [California Code of Regulations Title 21 Section 1509.3(25)].

Two conformity-requirement decision flow charts are provided in the CO Protocol. The flow charts are used to guide project-level conformity determinations. An explanatory discussion of the steps used to determine the conformity requirements that apply to the current project is provided below:

- 3.1.1. Is the project exempt from all emissions analyses? NO. The BRT project is not exempt from all Transportation Conformity requirements per 40 CFR 93.126.
- 3.1.2. Is the project exempt from regional emissions analysis? NO. The BRT is not exempt from regional emissions analysis per 40 CFR 93.127.
- 3.1.3. Is the project locally defined as regionally significant? YES. See previous response.
- 3.1.4. Is the project in a federal attainment area? NO. The project is located within an attainment/maintenance area for the federal CO standard as of June 11, 2007.
- 3.1.5. Is there a currently conforming RTP and TIP? YES. The 2016–2040 RTP/SCS was found to conform by SCAG on April 7, 2016. FTA and FHWA approved the 2016 RTP/SCS conformity analysis on June 1, 2016.
- 3.1.6. Is the project included in the regional emissions analysis supporting the currently conforming RTP and TIP? YES. The design concept and scope of the project is consistent with the project description in the 2016–2040 RTP/SCS. The open to traffic assumption is being amended through coordination between SBCTA and SCAG. As the project is financially constrained, it would not require federal operations and maintenance funds. Financially constrained projects are those that have adequate revenue available to cover costs and are not included in the FTIP.

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<sup>10</sup> Caltrans, Transportation Project-Level Carbon Monoxide Protocol, December 1997.

- 3.1.7. Has the project design concept and/or scope changed significantly from that in regional analysis? NO. See previous response.
- 3.1.9. Examine local impacts. Section 3.1.9 flowchart directs the project evaluation to Section 4 (Local Analysis) of the CO Protocol.

Assessment of the project's effect on localized ambient air quality is based on analysis of CO. As stated in the CO Protocol, the determination of project-level CO impacts should be carried out according to the local analysis. The following discussion provides explanatory remarks for every step of the local analysis of the protocol (screening methodology):

- 4.1.1. Is the project in a CO nonattainment area? NO. The project is located in a federal attainment/maintenance area for CO as of June 11, 2007.
- 4.1.2. Was the area redesignated as "attainment" after the 1990 Clean Air Act? YES. See previous response.
- 4.1.3. Has "continued attainment" been verified with the local Air District, if appropriate? YES. As shown in Table 4-1, above, monitored CO concentrations in the project area were below the NAAQS for the latest five-year period (2012–2016). Proceed to Level 7.
- 4.7.1. Does the project worsen air quality? Yes. Section 4.7.1 provides criteria that can be satisfied to demonstrate that the project would not worsen air quality. In accordance with the CO Protocol, the project would not worsen air quality based on the following evaluation:

- a) The project may worsen air quality if it increases the percentage of vehicles operating in cold start mode by 2 percent or more in the affected area.

The CARB has defined cold starts in the EMFAC2014 Volume II - Handbook for Project-Level Analysis (April 30, 2014). Cold starts are defined as starts after the vehicle engine has been shut-off for more than 720 minutes (12 hours). It can reasonably be assumed that cold starts are by vast majority generated when residents leave their homes in the morning or employees leave work in the evening.

The traffic study does not identify project-specific cold starts, which are not usually included or relevant for BRT projects. The CO Protocol identifies typical ranges for the percent of vehicles operating in cold mode in Table B.6 of Section B.3.2. For local/collector streets, the range is 5 to 15% during the AM peak hours and 15 to 25% during the PM peak hours. It is anticipated that cold starts in the project area would be within the suggested range of values in the CO Protocol. The precise number for the project area is of no consequence to the CO hot-spot analysis for this particular project. If there would be any effect it would be to less cold starts as the BRT may appeal to commuters and reduce cold starts associated with work

commutes. There is no potential for the project to increase the percentage of vehicles operating in cold start mode.

- b) The project may worsen air quality if it significantly increases travel volumes by 5% or more, or reduces average vehicle speeds in the affected area.

Table 5-4, above, shows that Alternatives A and B would reduce VMT in the project area between 0.03 and 0.04%. Therefore, there is no potential for the project to increase intersection volumes by 5% or more.

- c) The project may worsen air quality if the project worsens traffic flow, causing a reduction in average speed or an increase in average delay at an intersection.

The traffic study identifies 5 out of 129 intersections where the project may significantly affect delay. Therefore, there is a potential for the project to worsen traffic flow, which would be reflected by a reduction in average speed or an increase in average delay at an intersection.

- 4.7.2. Is the project suspected of resulting in higher CO concentrations than those existing within the region at the time of the attainment demonstration? NO. As shown in Table 4-1, above, maximum 8-hour CO concentrations in the project area were approximately 20 percent of the federal NAAQS during the period from 2012–2016. The CO maintenance plan for the Basin was approved in 2003, when the maximum 8-hour CO concentration at the Pomona monitoring station was 4.4 ppm, approximately 50 percent of the NAAQS and more than twice existing ambient concentrations.

The project would not be expected to cause or contribute to any new localized violations of the federal 1-hour or 8-hour CO ambient standards. The project would not worsen air quality, and no further analysis is needed in accordance with Level 7 in Figure 3 of the CO Protocol.

**Particulate Matter Hot-Spot Analysis.** A quantitative hot-spot analysis is required only for a project that has been identified as a Project of Air Quality Concern (POAQC), as defined in 40 CFR 93.123(b)(1). As described below, the project does not meet the criteria that would classify it as a POAQC under the 2006 EPA Final Rule on PM hot spots analysis. The project would result in no adverse effect related to worsening existing conditions or contributing to new localized PM hot spots. Therefore, the project is not considered to be a POAQC, and the project-level PM conformity determination requirements are satisfied.

The following criteria are used to determine if a project has the potential to be a POAQC. Projects that meet one or more of these criteria require a quantitative hot-spot analysis to demonstrate that the project will not result in localized PM hot spots.

- i. New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;
- ii. Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- iii. New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- iv. 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 which are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The project involves a 35-mile BRT line and associated roadway improvements. The project is not a highway project, nor is it a new or expanded bus or rail terminal or transfer point with a significant number of diesel vehicles. Omnitrans buses are powered with compressed natural gas (CNG), which is not a significant source of diesel emissions. The bus transfer locations would operate similarly to existing bus stops on a local roadway; they are not considered significant terminals or transfer points with a significant number of diesel vehicles. For these reasons, the project is not a POAQC, the project-level PM conformity determination requirements are satisfied. There is no potential for a PM hot-spot in the project area.

On November 21, 2017, the project was presented to the SCAG Transportation Conformity Working Group (TCWG), which comprises a representative from the FTA, the FHWA, and the EPA. The project was determined not to be a POAQC through TCWG concurrence on December 5, 2017 and therefore project-level conformity was effectively demonstrated. No further analysis related to project-level conformity is required.

**Construction Emissions and Conformity.** During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Anticipated emissions from construction equipment may include CO, NO<sub>x</sub>, VOCs, PM<sub>10</sub> and PM<sub>2.5</sub>, and toxic air contaminants, such as diesel PM. Ozone is a regional pollutant that is derived from NO<sub>x</sub> and VOCs in the presence of sunlight and heat. Construction activities associated with the Build Alternatives would be temporary in nature and would not require more than five years to complete; therefore, construction emissions are not considered for conformity purposes, or included in regional- and project-level conformity analysis [40 CFR 93.123(c)(5)].

### *Mobile Source Air Toxic Emissions*

In addition to the criteria air pollutants for which there are NAAQS, the EPA also regulates air toxics. Most air toxics originate from human-made sources, include 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).

Qualitative analysis is required for projects with low potential MSAT effects—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.

Quantitative analysis is required for projects that have the potential for meaningful differences in MSAT emissions among project alternatives. In order to fall into this category, a project should:

- 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, involving a significant number of diesel vehicles for new projects or accommodating with a significant increase in the number of diesel vehicles for expansion projects; or
- Create new capacity 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) is projected to be in the range of 140,000 to 150,000 or greater by the design year; and
- Proposed to be located in proximity to populated areas.

The project would implement a CNG-fueled 35-mile BRT line with associated roadway improvements. The project would improve transit operations throughout the 35-mile corridor and would not add new vehicle capacity. Regardless of AADT on local roadways, the project would not create or add significant roadway capacity and there is low potential for increases MSAT exposure. Furthermore, because the estimated vehicle miles traveled (VMT) under each of the Build Alternatives are nearly the same in the design year, varying by less than one half of one percent, it is expected that there would be no appreciable difference in overall MSAT emissions among the various Build Alternatives. Therefore, a quantitative analysis is not required for this project.

Alternative B would involve minor widening to a 3-mile segment of Holt Boulevard in Ontario. For Alternative B, the amount of MSAT emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of 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. Refer to **Table 5-4**. This increase in VMT would lead to higher MSAT emissions for the preferred action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along

the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to the Environmental Protection Agency’s (EPA) MOVES2014 model, emissions of all of the priority MSAT decrease as speed increases.

Because the estimated VMT under each of the Alternatives are nearly the same, varying by less than one half of one percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA’s national control programs that are projected to reduce annual MSAT emissions by over 90 percent between 2010 and 2050 (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016). 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 EPA-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.

Also, regardless of the Alternative chosen, emissions are virtually certain to be lower than present levels in the design year as a result of CARB’s statewide and EPA’s national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. The magnitude of CARB- and EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area will almost certainly be lower in the future than they are today. The project would not substantially increase diesel truck traffic along the project corridor, and through the MSAT emissions reductions programs it is anticipated that future air quality conditions in the vicinity of the project would be improved. Therefore, the project would not result in an adverse effect related to MSAT emissions.

***Criteria Pollutant and Ozone Precursor Emissions***

The operational emissions analysis for the project addresses sources of direct air pollutant emissions and the potential effects on regional and local air quality under existing conditions, the No Build Alternative, and the Build Alternatives. The primary source of direct air pollutant emissions under operational conditions is vehicular traffic. Emissions from vehicular traffic within the project corridor are based on the VMT, speed distributions, and vehicle types. Table 5-4 displays the daily regional VMT within the project corridor for existing conditions (2016), the No Build and Build Alternatives in the opening year (2023), and the No Build and Build Alternatives in the design year (2040).

**Table 5-4: Project Corridor Vehicle Miles Traveled**

Scenario	No Build	Alternative A	Alternative B
Existing VMT (2016)	12,926,868	-	-
Opening Year VMT (2023)	13,393,271	13,389,567	13,389,287



Percent Change from Existing (%)	3.6%	3.6%	3.6%
Percent Change from No Build (%)	-	-0.03%	-0.03%
<b>Design Year VMT (2040)</b>	15,725,284	15,721,813	15,722,280
Percent Change from Existing (%)	21.6%	21.6%	21.6%
Percent Change from No Build (%)	-	-0.04%	-0.04%

Note: The VMT analysis was prepared when 2020 was the estimated opening year. The current opening year estimate is 2023. Nevertheless, the traffic modeling forecast considered VMT through 2040, and indicates that VMT would decrease in the opening and horizon years. A three-year delay in the opening date does not substantially alter this analysis. In addition, within the EMFAC2014 model, pollutant emissions decrease in future years due to fleet turn over and improvements in engine exhaust technology.

Source: Traffic Study Report, 2018

The VMT data presented in Table 5-4 were utilized to estimate air pollutant emissions from all vehicular traffic throughout the project corridor. Emissions were quantified based on regional passenger vehicle and truck VMT and regional CNG bus VMT within the corridor area. Table 5-5 presents the results of operational emissions modeling for vehicular traffic based on speed distribution and fleet mix data provided in the traffic study. The emissions estimates presented in Table 5-5 also include operation of the O&M facility.

**Table 5-5: Daily Operational Emissions**

Scenario	VOC (lb/day)	CO (lb/day)	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
<b>Existing (2016)</b>	1,602	38,933	12,656	9,572	1,929
<b>Opening Year (2023)</b>					
No Build Alternative	1,030	26,511	8,860	9,922	1,945
Alternative A	1,032	26,514	8,869	9,925	1,945
Alternative B	1,032	26,516	8,875	9,931	1,946
<b>Design Year (2040)</b>					
No Build Alternative	537	12,679	2,907	11,916	2,257
Alternative A	538	12,683	2,903	11,918	2,258
Alternative B	539	12,683	2,909	11,926	2,259

Note: The VMT analysis was prepared when 2020 was the estimated opening year. The current opening year estimate is 2023. Nevertheless, the traffic modeling forecast considered VMT through 2040, and indicates that VMT would decrease in the opening and horizon years. A three-year delay in the opening date does not substantially alter this analysis. In addition, within the EMFAC2014 model, pollutant emissions decrease in future years due to fleet turn over and improvements in engine exhaust technology

Source: Terry A. Hayes Associates Inc., 2018

Table 5-6 displays the difference in emissions between the Build Alternatives and the No Build Alternative. Regardless of the Build Alternative, the change in emissions would be less than one percent for all pollutants, which is not considered significant. Therefore, the project would not result in an adverse effect related to criteria pollutant and ozone precursor emissions.

**Table 5-6: Change in Operational Emissions Relative to No Build Alternative**

Scenario	VOC (lb/day) (%)	CO (lb/day) (%)	NO <sub>x</sub> (lb/day) (%)	PM <sub>10</sub> (lb/day) (%)	PM <sub>2.5</sub> (lb/day) (%)
<b>Opening Year (2023)</b>					
Alternative A	2 (0.22%)	3 (0.01%)	9 (0.10%)	4 (0.04%)	1 (0.05%)
Alternative B	2 (0.23%)	5 (0.02%)	16 (0.18%)	9 (0.10%)	2 (0.10%)
<b>Design Year (2040)</b>					
Alternative A	1 (0.25%)	4 (0.03%)	-4 (-0.14%)	2 (0.02%)	1 (0.03%)
Alternative B	2 (0.32%)	4 (0.03%)	2 (0.07%)	10 (0.08%)	2 (0.09%)
Note: The VMT analysis was prepared when 2020 was the estimated opening year. The current opening year estimate is 2023. Nevertheless, the traffic modeling forecast considered VMT through 2040, and indicates that VMT would decrease in the opening and horizon years. A three-year delay in the opening date does not substantially alter this analysis. In addition, within the EMFAC2014 model, pollutant emissions decrease in future years due to fleet turn over and improvements in engine exhaust technology					

Source: Terry A. Hayes Associates Inc., 2018

### Construction Emissions

Construction of the Build Alternatives would last for less than 5 years under either circumstance, and therefore a construction analysis is not required for transportation conformity purposes. Site preparation and roadway construction would involve clearing, grading, and paving roadway surfaces. Construction-related effects on air quality would be greatest when multiple pieces of equipment are operating simultaneously and generating exhaust emissions. Construction activities could temporarily generate enough PM<sub>10</sub>, PM<sub>2.5</sub>, and small amounts of CO, NO<sub>x</sub>, and VOCs to be of concern. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils.

Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM<sub>10</sub> emissions would vary day-to-day, depending on the nature and magnitude of construction activity and local weather conditions. PM<sub>10</sub> emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Table 5-7 and Table 5-8 present the total estimated emissions associated with construction of Alternative A and Alternative B, respectively. Alternative A would generate emissions of lesser magnitude than Alternative B, and Alternative B includes all emissions from Alternative A in addition to those from roadway widening activities in Ontario, which would occur during the latter half of Phase I construction. Construction impacts to air quality are short-term in duration and, therefore, will not result in long-term adverse conditions.

Implementation of the avoidance measures AQ1 through AQ13, presented below in Chapter

6.0—some of which may also be required for other purposes such as storm water pollution control—will reduce any temporary effects of construction on local air quality.

**Table 5-7: Total Construction Emissions - Alternative A**

Project Component	Pollutant Emissions (Tons)				
	CO	NO <sub>x</sub>	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase I</b>					
Milliken Alignment Construction	3.15	2.86	0.33	0.51	0.23
O&M Facility Construction	2.64	2.75	0.61	0.29	0.16
<b>Phase II</b>					
Haven Alignment Construction	3.10	2.40	0.28	0.47	0.19
<b>Total Emissions from Project Construction (Tons)</b>	<b>8.89</b>	<b>8.01</b>	<b>1.22</b>	<b>1.27</b>	<b>0.58</b>

Source: Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, Version 8.1.0; CalEEMod Version 2016.3.2

As shown in Table 5-7, construction of Alternative A will result in total approximate emissions including 8.89 tons CO, 8.01 tons NO<sub>x</sub>, 1.22 tons VOC, 1.27 tons PM<sub>10</sub>, and 0.58 tons PM<sub>2.5</sub>. Construction of Alternative A is anticipated to last a total of 20 months for Phase I, with Phase II to continue after the completion of Phase I, if funding is available, for an approximately one year to complete.

**Table 5-8: Total Construction Emissions - Alternative B**

Project Component	Pollutant Emissions (Tons)				
	CO	NO <sub>x</sub>	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase I</b>					
Dedicated Lanes Construction and Road Widening – Ontario	15.49	14.92	1.66	6.69	1.95
Milliken Alignment Construction	3.15	2.86	0.33	0.51	0.23
O&M Facility Construction	2.64	2.75	0.61	0.29	0.16
<b>Phase II</b>					
Haven Alignment Construction	3.10	2.40	0.28	0.47	0.19
<b>Total Emissions from Project Construction (Tons)</b>	<b>24.38</b>	<b>22.93</b>	<b>2.88</b>	<b>7.96</b>	<b>2.53</b>

Source: Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, Version 8.1.0; CalEEMod Version 2016.3.2

As shown in Table 5-8, construction of Alternative B will result in total approximate emissions including 24.38 tons CO, 22.93 tons NO<sub>x</sub>, 2.88 tons VOC, 7.96 tons PM<sub>10</sub>, and 2.53 tons PM<sub>2.5</sub>. Construction of Alternative B is anticipated to last approximately 24 months for Phase I, with Phase II to continue after the completion of Phase I, if funding is available, for an approximately one year to complete.

### 5.3.2 CEQA Analysis

This section of the report analyzes emissions of air pollutants that would be generated by the construction activities and future operating conditions of the project in accordance with the criteria set forth in Appendix G of the CEQA Guidelines. The discussions were prepared in consideration of the thresholds of significance outlined in Section 5.1.2 of this report. The analysis was based upon guidance published in the SCAQMD *Air Quality Analysis Handbook* for CEQA environmental impact assessment.

#### *Air Quality Plan Consistency*

The most recent iteration of the applicable air quality plan is the 2016 AQMP prepared by the SCAQMD. The 2016 AQMP relied upon forecasted growth and emissions projections in the South Coast Air Basin that were derived for the 2016 RTP/SCS. The 2016 RTP/SCS analyses incorporated all projects that are listed in the 2016 RTP/SCS Transportation System Project List. The project is included in the Transportation System Project List as a transit project under the RTP ID 4120213. As both the 2016 RTP/SCS and the 2016 AQMP have been adopted, the project is therefore consistent with the forecasted growth within the region and the applicable air quality plan.

Furthermore, a project would be consistent with the current AQMP if it is consistent with the growth anticipated by the relevant land use plans. Zoning changes, specific plans, general plan amendments, and similar land use plan changes that do not increase dwelling unit density, do not increase vehicle trips, and do not increase VMT are also considered consistent with the applicable attainment or maintenance plan. The project involves installation of a BRT line, as well as bus-only lanes under Alternative B. The project does not include general development that would require a zoning change or construct new dwelling units. Therefore, the proposed project would result in a less-than-significant impact related to conflicting with or obstructing implementation of the 2016 AQMP.

#### *Air Quality Standards Violations*

The SCAQMD significance thresholds discussed in Section 5.1.2, above, have been established to assess the potential for emissions to impede attainment of the health-based air quality standards. Table 5-9 shows daily regional construction emissions for Build Alternative A and Table 5-10 shows daily regional construction emissions for Build Alternative B using the assumptions discussed above in Section 5.2 Methodology. For Alternative A, it is anticipated that the Milliken Alignment Construction activities would be concurrent with the O&M Facility Construction Activities in Phase I. For Alternative B, it is anticipated that the Milliken Alignment Construction activities would overlap the Dedicated Lanes Road Widening activities during the first half of Phase I and would overlap the O&M Facility Construction activities during the latter half of Phase I. Phase II construction activities would be identical under Alternative A and Alternative B.

**Table 5-9: Regional Construction Emissions Analysis - Alternative A**

Project Component	Maximum Daily Regional Emissions (pounds per day)				
	CO	NOx	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase I</b>					
Milliken Alignment Construction	31.9	28.6	3.3	4.5	2.0
O&M Facility Construction	36.0	32.6	35.1	4.7	2.3
Milliken Alignment + O&M Facility Construction Overlap	67.9	61.2	38.4	9.2	4.3
<b>Phase II</b>					
Haven Alignment Construction	31.5	23.7	2.8	4.2	1.7
<b>Maximum Daily Regional Emissions</b>	<b>67.9</b>	<b>61.2</b>	<b>38.4</b>	<b>9.2</b>	<b>4.3</b>
SCAQMD Threshold	550	100	75	150	55
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, Version 8.1.0; CalEEMod Version 2016.3.2.

As exhibited in Table 5-9, above, maximum daily regional emissions associated with construction of Alternative A would not exceed any applicable SCAQMD regional mass daily significance threshold. Construction of Alternative A would result in a less than significant impact related to regional emissions.

As exhibited in Table 5-10, above, maximum daily regional emissions associated with construction of Alternative B would remain below all applicable SCAQMD regional mass daily significance thresholds. Construction of Alternative B would result in a less than significant impact related to regional air pollutant emissions.

**Table 5-10: Regional Construction Emissions Analysis - Alternative B**

Project Component	Maximum Daily Regional Emissions (pounds per day)				
	CO	NOx	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase I</b>					
Dedicated Lanes Construction and Road Widening – Ontario	65.3	64.5	6.7	29.5	8.4
Milliken Alignment Construction	31.9	28.6	3.3	4.5	2.0
O&M Facility Construction	36.0	32.6	35.1	4.7	2.3
Dedicated Lanes + Milliken Alignment Construction Overlap	97.2	93.1	10.0	34.0	10.4

Project Component	Maximum Daily Regional Emissions (pounds per day)				
	CO	NOx	VOC	PM <sub>10</sub>	PM <sub>2.5</sub>
Milliken Alignment + O&M Facility Construction Overlap	67.9	61.2	38.4	9.2	4.3
<b>Phase II</b>					
Construction of Haven Alignment	31.5	23.7	2.8	4.2	1.7
<b>Maximum Daily Regional Emissions</b>	<b>97.2</b>	<b>93.1</b>	<b>38.4</b>	<b>34.0</b>	<b>10.4</b>
SCAQMD Threshold	550	100	75	150	55
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, Version 8.1.0; CalEEMod Version 2016.3.2

Localized construction emissions include those emissions only generated within the construction zone (i.e., fugitive dust and equipment exhaust). Table 5-11 presents localized construction emissions for Build Alternative A and Table 5-12, below, presents localized construction emissions for Build Alternative B. Localized particulate matter emissions would exceed the applicable significance thresholds under Alternative B. Over 80 percent of localized particulate matter emissions would be related to fugitive dust. It should be noted that the fugitive dust calculations built into the RCEM are conservative in nature by assuming that 10 pounds of fugitive PM<sub>10</sub> would be generated per acre of ground area disturbed on a daily basis during construction activities. While the model is commonly used for air quality assessments of linear roadway projects, and it is the most appropriate tool available, its use is not officially required by the FTA or the SCAQMD.

**Table 5-11: Localized Construction Emissions Analysis - Alternative A**

Project Component	Maximum Daily Localized Emissions (pounds per day)			
	CO	NOx	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase I</b>				
Milliken Alignment Construction	10.6	9.6	1.5	0.7
SCAQMD Threshold (≤1 Acre Site Disturbance, Receptor ≤ 25 m)	612	103	4	3
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Phase II</b>				
O&M Facility Construction	32.8	28.1	3.9	2.2
SCAQMD Threshold (≤1 Acre Site Disturbance, Receptor ≤ 25 m)	612	103	4	3
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Phase II</b>				
Haven Alignment Construction	10.5	7.9	1.4	0.6
SCAQMD Threshold (≤1 Acre Site Disturbance, Receptor ≤ 25 m)	612	103	4	3
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, Version 8.1.0; CalEEMod Version 2016.3.2

The proposed project would be required to comply with SCAQMD Rule 403 (Fugitive Dust), which would reduce emissions by the greatest extent feasible. This was assumed to be a 50 percent reduction based on the default assumptions in the construction model. Compliance with Rule 403 is a regulatory requirement, and the emissions reduction was included in the unmitigated emission estimates. Compliance with Rule 403 has been included within Mitigation Measure AQ13 to ensure implementation during construction. Nonetheless, construction of the proposed project under Alternative B may result in a significant impact related to localized particulate matter emissions, as shown in Table 5-12.

**Table 5-12: Localized Construction Emissions Analysis - Alternative B**

Project Component	Maximum Daily Localized Emissions (pounds per day)			
	CO	NOx	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Phase I</b>				
Dedicated Lanes Construction and Road Widening – Ontario	65.3	64.5	29.0	8.2
SCAQMD Threshold (2-Acre Site Disturbance, Receptor @ 25 m)	885	149	6	5
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>Yes</b>
Milliken Alignment Construction	10.6	9.6	1.5	0.7
SCAQMD Threshold (≤1 Acre Site Disturbance, Receptor ≤ 25 m)	612	103	4	3
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
O&M Facility Construction	32.8	28.1	3.9	2.2
SCAQMD Threshold (≤1 Acre Site Disturbance, Receptor ≤ 25 m)	612	103	4	3
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Phase II</b>				
Haven Alignment Construction	10.5	7.9	1.4	0.6
SCAQMD Threshold (≤1 Acre Site Disturbance, Receptor ≤ 25 m)	612	103	4	3
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

*Source: Sacramento Metropolitan Air Quality Management District Road Construction Emissions Model, Version 8.1.0; CalEEMod Version 2016.3.2*

Operational emissions associated with implementation of the project would result from vehicular traffic along the BRT corridor that could potentially be affected by the installation of the additional lane(s) as well as operation of the O&M facility. Regional emissions estimated using EMFAC2014 are shown in Table 5-5, above, for the existing condition (2016), opening year (2023), and design year (2040). Compared to the CEQA baseline of 2016, regional VOC, CO, and NOx emissions would substantially decrease while PM<sub>10</sub> and PM<sub>2.5</sub> emissions would increase for each of the Build Alternatives. This is because exhaust emissions decrease in future years as the vehicle fleet continues to turn over to newer, more efficient vehicles and emission standards become more stringent. However, re-entrained dust emissions are a function of VMT.

Regional VMT growth, unrelated to the project, would generate a substantial amount of re-entrained dust from 2016 to 2023 and 2040. This growth distorts the true impact of particulate emissions associated with the proposed project, which is best assessed by comparing the Build Alternatives to the No Build Alternative. As shown in Table 5-13, below,



project-only emissions would not exceed the SCAQMD significance thresholds and would lead to lower emissions for some pollutants due to changes in VMT. Therefore, the proposed project would result in a less-than-significant impact related to regional operational emissions.

**Table 5-13: Regional Daily Operational Emissions Analysis**

Scenario	VOC (lb/day)	CO (lb/day)	NO <sub>x</sub> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)
<b>Opening Year (2023)</b>					
Alternative A	<1	-9	-2	<1	<1
Alternative B	<1	-12	6	2	<1
SCAQMD Threshold	55	550	550	150	55
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Design Year (2040)</b>					
Alternative A	<1	-7	-8	-1	<1
Alternative B	<1	-6	-2	7	1
SCAQMD Threshold	55	550	550	150	55
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: Terry A. Hayes Associates Inc., 2018

***Cumulatively Considerable Net Increase in Nonattainment Pollutants***

Because the Basin is designated as a State and/or federal nonattainment area for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>, and Pb, there is an ongoing regional cumulative impact associated with these pollutants. An individual project can emit these pollutants on a regional level without significantly contributing to this cumulative impact depending on the magnitude of emissions. The SCAQMD has indicated that the project-level thresholds may be used as an indicator to determine if project emissions contribute to a cumulative impact.

As discussed above, air pollutant emissions associated with regional construction and operation of the proposed project would not exceed any applicable project-level SCAQMD thresholds of significance. However, construction activities associated with Alternative B would exceed the localized significance thresholds for PM<sub>10</sub> and PM<sub>2.5</sub>. Project-related emissions, combined with emissions from related projects that would be simultaneously constructed along the corridor, would contribute to the existing cumulative impact. Therefore, the proposed project would result in a significant impact related to cumulative emissions.

***Exposure of Sensitive Receptors to Substantial Pollutant Concentrations***

The greatest potential for sensitive receptor exposure TAC emissions during construction would result from diesel PM emissions associated with heavy equipment operations. The dose to which receptors are exposed is the primary factor used to determine health risk (i.e.,

potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. While the construction period for the proposed project would extend several months, local exposure to TAC emissions would range from weeks to months depending on the construction phase and location. The proposed project would be subject to the regulations and laws relating to TACs at the regional, State, and federal level that would protect sensitive receptors from substantial concentrations.

Construction activity would not occur in one particular location for extended periods of time as heavy-duty equipment would move along the 35-mile corridor at a steady pace. This type of corridor-related construction activity limits the exposure period for individual receptors, and TAC emissions would not cause an exceedance of the cancer or non-cancer significance thresholds. Therefore, the proposed project would result in a less-than-significant impact related to construction TAC emissions.

For operational activities, the SCAQMD recommends that a health risk assessment be conducted for substantial sources of long-term operational diesel PM emissions (e.g., truck stops and distribution facilities) and has provided guidance for analyzing mobile source diesel emissions. Omnitrans buses are powered by CNG and are not sources of diesel emissions. The proposed project would not require construction of a new maintenance facility nor extend the operating hours of the existing maintenance facility. None of the Build Alternatives would include a substantial new operational source of localized pollutant emissions. Therefore, the proposed project would result in a less-than-significant impact related to exposing sensitive receptors to substantial operational pollutant concentrations.

### ***Creation of Objectionable Odors***

Construction activities would involve the use of a variety of gasoline or diesel powered equipment that emit exhaust fumes as well as asphalt paving, which has a distinctive odor during application. It is anticipated that these emissions would occur intermittently throughout the workday and the associated odors would dissipate rapidly within the immediate vicinity of the work area. Persons within close proximity to the construction work area may find these odors objectionable. Any emissions during the construction phase that create odors for nearby sensitive receptors would be addressed by enforcement of SCAQMD Rule 402 (Nuisance), which prohibits any emissions that cause injury, detriment, nuisance or annoyance to a considerable number of people. Therefore, the proposed project would result in a less-than-significant impact related to construction odors.

Land uses and industrial operations commonly associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants,

composting, refineries, landfills, dairies, and fiberglass molding. The proposed project would include a new transit system. Any unpleasant odors from transit operations would be subject to management under the odor complaint tracking system mandated by SCAQMD Rule 402 (Nuisance), which prevents nuisance odor conditions. As a result, the proposed project would have a minor, if any, impact with respect to odors. Therefore, the proposed project would result in a less-than-significant impact related to operational odors.

## **6.0 CONCLUSIONS, RECOMMENDATIONS, & MITIGATION MEASURES**

An air quality analysis was completed to comply with federal and State requirements. The proposed project would comply with Transportation Conformity requirements and would not result in adverse effects under NEPA. Under CEQA, the proposed project would be consistent with the AQMP and would not generate significant regional emissions, TAC concentrations, or odors. However, construction activity associated with Alternative B would exceed the LSTs for particulate matter. Mitigation Measures AQ1 and AQ13 would reduce fugitive dust emissions but not to below the significance thresholds. Therefore, the proposed project would result in a significant and unavoidable impact related to localized construction emissions. Because the Basin is designated as a State and/or federal nonattainment area for PM<sub>10</sub> and PM<sub>2.5</sub>, the proposed project would contribute to a short-term cumulative impact. AQ1 through AQ13 are also included in the NEPA analysis as minimization measures.

- AQ1: Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a “no visible dust” criterion either at the point of emission or at the right of way line as required by the SCAQMD.
- AQ2: Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.
- AQ3: Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.
- AQ4: Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited re-vegetation as needed to minimize construction impacts to existing communities.
- AQ5: Locate equipment and materials storage sites at least 500 feet from the sensitive receptors. Keep construction areas clean and orderly.
- AQ6: Extended idling, material storage, and equipment maintenance should be prohibited within 500 feet of sensitive air receptors, to the extent feasible.
- AQ7: Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.
- AQ8: Cover all transported loads of soils and wet materials prior to transport or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.

AQ9: Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.

AQ10: Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

**Minimization of PM<sub>10</sub> During Construction and South Coast Air Quality Management District (SCAQMD) Rules.** The SCAQMD adopts rules and regulations to implement portions of the AQMP, which aims to control pollution from all sources, including stationary sources, area sources, and on-road and off-road mobile sources. Several of these rules may apply to construction or operation of the proposed project. The most pertinent SCAQMD rules applicable to the proposed project are:

AQ11: Rule 401 – Visible Emissions: A person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminants for a period or periods aggregating more than three (3) minutes in any one (1) hour which are as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart or of such opacity as to obscure an observer’s view to a degree equal to or greater than smoke.

AQ12: Rule 402 – Nuisance: A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.

AQ13: Rule 403 – Fugitive Dust: SCAQMD’s Rule 403 requires that fugitive dust be controlled with the best available control measures in order to reduce dust so that it does not remain visible in the atmosphere beyond the property line of the proposed project. It also requires a dust control plan to be submitted and approved prior to construction. The dust control plan should describe all applicable dust control measures that will be implemented at the project; and should describe types of dust suppressant, surface treatments and other measures to be utilized at the construction sites to comply with the Rule. The relevant specifics of Rule 403 are as follows:

- No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that the dust remains visible in the atmosphere beyond the property line of the emission source; or the dust emission exceeds 20 percent opacity, if the dust emission is the result of movement of a motorized vehicle.

- No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of Rule 403 to minimize fugitive dust emissions from each fugitive dust source type within the active operation.
- No person shall cause or allow PM<sub>10</sub> levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. Environmental Protection Agency-approved equivalent methods for PM<sub>10</sub> monitoring.
- No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.
- No person shall conduct an active operation with a disturbed surface area of five or more acres or with a daily import or export of 100 cubic yards or more of bulk material without utilizing approved control measure/measures at each vehicle egress from the site to a paved public road.

**AQ-14:** To the extent possible and applicable, construction activities that will involve excavation will be scheduled when school is off session. Contractors shall not cause or allow PM<sub>10</sub> levels to exceed 50 µg/m<sup>3</sup> when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume samplers reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

**AQ-15:** A temporary construction sign shall be installed at the construction site displaying contact information of the Resident Engineer, who will be the point of contact to address dust, noise, and construction-related impacts.

**AQ-16:** To the extent possible, any applicable heavy construction (e.g., structure demolition excavation) that could affect air quality near any school along the route will be scheduled during off-school hours.

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## **7.0 REFERENCES**

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# APPENDIX A - AIR QUALITY CALCULATIONS



# **Appendix A**

## Air Quality Calculations

**Daily Emissions Summary**

<u>YEAR</u>	<u>Alternative</u>	<u>Phase Completed</u>	<u>Auto VMT</u>	<u>Truck VMT</u>	<u>Total VMT</u>	<u>ROG (lb/day)</u>	<u>CO (lb/day)</u>	<u>NOX (lb/day)</u>	<u>PM10 (lb/day)</u>	<u>PM2.5 (lb/day)</u>
2016	NB	E	12,077,346.6	849,521.7	12,926,868	1,532	37,794	12,085	9,523	1,908
2020	NB	E	12,496,047.1	897,223.9	13,393,271	984	25,578	8,491	9,874	1,924
2020	A	Phase I	12,491,836.9	897,729.8	13,389,567	984	25,569	8,494	9,874	1,924
2020	B	Phase I	12,490,176.6	899,110.9	13,389,287	984	25,570	8,501	9,880	1,925
2040	NB	E	14,589,549.2	1,135,734.9	15,725,284	531	12,077	2,846	11,868	2,237
2040	A	Phase II	14,585,971.3	1,135,841.8	15,721,813	531	12,070	2,838	11,867	2,237
2040	B	Phase II	14,584,598.6	1,137,681.4	15,722,280	531	12,070	2,844	11,875	2,238

Scenario	Source	<u>ROG (lb/day)</u>	<u>CO (lb/day)</u>	<u>NOX (lb/day)</u>	<u>PM10 (lb/day)</u>	<u>PM2.5 (lb/day)</u>
	O&M Facility	1.99	6.90	3.25	2.63	0.74
2016E	Bus VMT	70.50	1139.38	570.83	48.45	21.15
2020NB	Bus VMT	45.46	932.74	369.18	48.11	20.83
2020B	Bus VMT	45.74	938.53	371.47	48.41	20.96
2040NB	Bus VMT	5.62	602.68	61.43	47.60	20.34
2040B	Bus VMT	5.66	606.42	61.82	47.90	20.47
2016E	PV+T+BUS	1,602	38,933	12,656	9,572	1,929
2020NB	PV+T+BUS	1,030	26,511	8,860	9,922	1,945
2020A	PV+T+BUS+O&M	1,032	26,514	8,869	9,925	1,945
2020B	PV+T+BUS+O&M	1,032	26,516	8,875	9,931	1,946
2040NB	PV+T+BUS	537	12,679	2,907	11,916	2,257
2040A	PV+T+BUS+O&M	538	12,683	2,903	11,918	2,258
2040B	PV+T+BUS+O&M	539	12,683	2,909	11,926	2,259
2020	AΔNB	2	3	9	4	1
2020	BΔNB	2	5	16	9	2
2020	AΔNB%	0.22%	0.01%	0.10%	0.04%	0.05%
2020	BΔNB%	0.23%	0.02%	0.18%	0.10%	0.10%
2040	AΔNB	1	4	-4	2	1
2040	BΔNB	2	4	2	10	2
2040	AΔNB%	0.25%	0.03%	-0.14%	0.02%	0.03%
2040	BΔNB%	0.32%	0.03%	0.07%	0.08%	0.09%

**Mobile Source Emissions Calculation Sheets**

<b><u>YEAR</u></b>	<b><u>Alternative</u></b>	<b><u>Alignment</u></b>	<b><u>Speed</u></b>	<b><u>Auto VMT</u></b>	<b><u>Truck VMT</u></b>	<b><u>Auto Weight (ton)</u></b>	<b><u>Truck Weight (Ton)</u></b>
2016	A	M	5	590.5	78.0	1.55	20.00
2016	A	M	10	10,506.1	1,387.3	1.55	20.00
2016	A	M	15	38,800.0	5,123.3	1.55	20.00
2016	A	M	20	89,814.5	11,859.4	1.55	20.00
2016	A	M	25	284,276.0	37,536.8	1.55	20.00
2016	A	M	30	1,533,587.7	202,500.1	1.55	20.00
2016	A	M	35	2,232,886.7	294,837.9	1.55	20.00
2016	A	M	40	1,310,127.3	172,993.6	1.55	20.00
2016	A	M	45	518,434.1	68,455.8	1.55	20.00
2016	A	M	50	418,897.2	55,312.6	1.55	20.00
2016	A	M	55	697,795.8	0.0	1.55	20.00
2016	A	M	60	1,755,494.7	0.0	1.55	20.00
2016	A	M	65	3,181,934.4	0.0	1.55	20.00
2016	A	H	5	661.0	86.9	1.55	20.00
2016	A	H	10	10,434.1	1,372.4	1.55	20.00
2016	A	H	15	38,897.7	5,116.4	1.55	20.00
2016	A	H	20	89,649.5	11,792.0	1.55	20.00
2016	A	H	25	284,697.2	37,447.6	1.55	20.00
2016	A	H	30	1,535,697.8	201,997.6	1.55	20.00
2016	A	H	35	2,230,546.9	293,394.4	1.55	20.00
2016	A	H	40	1,309,022.8	172,182.0	1.55	20.00
2016	A	H	45	520,892.9	68,515.5	1.55	20.00
2016	A	H	50	438,638.0	57,696.1	1.55	20.00
2016	A	H	55	686,207.9	0.0	1.55	20.00
2016	A	H	60	1,745,296.1	0.0	1.55	20.00
2016	A	H	65	3,182,344.9	0.0	1.55	20.00
2016	B	M	5	591.0	77.9	1.55	20.00
2016	B	M	10	10,518.0	1,385.6	1.55	20.00
2016	B	M	15	38,837.1	5,116.1	1.55	20.00
2016	B	M	20	90,476.0	11,918.6	1.55	20.00
2016	B	M	25	286,754.7	37,774.8	1.55	20.00
2016	B	M	30	1,525,412.3	200,945.6	1.55	20.00
2016	B	M	35	2,241,362.0	295,259.1	1.55	20.00
2016	B	M	40	1,304,453.6	171,838.3	1.55	20.00
2016	B	M	45	522,074.2	68,773.9	1.55	20.00
2016	B	M	50	438,316.8	57,740.3	1.55	20.00
2016	B	M	55	688,181.8	0.0	1.55	20.00
2016	B	M	60	1,742,509.6	0.0	1.55	20.00
2016	B	M	65	3,183,167.1	0.0	1.55	20.00
2016	B	H	5	590.2	78.0	1.55	20.00
2016	B	H	10	10,495.5	1,386.6	1.55	20.00
2016	B	H	15	38,981.5	5,150.1	1.55	20.00
2016	B	H	20	89,914.9	11,879.3	1.55	20.00
2016	B	H	25	283,809.5	37,496.1	1.55	20.00
2016	B	H	30	1,526,651.0	201,696.9	1.55	20.00
2016	B	H	35	2,239,179.3	295,834.1	1.55	20.00
2016	B	H	40	1,308,215.9	172,837.8	1.55	20.00
2016	B	H	45	512,879.7	67,760.2	1.55	20.00
2016	B	H	50	424,875.7	56,133.4	1.55	20.00
2016	B	H	55	705,953.3	0.0	1.55	20.00
2016	B	H	60	1,748,416.5	0.0	1.55	20.00
2016	B	H	65	3,182,371.0	0.0	1.55	20.00

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Auto Run (g/mi)</u></b>	<b><u>PM10 Auto bw (g/mi)</u></b>	<b><u>PM10 Auto tw (g/mi)</u></b>	<b><u>PM10 Auto re (lb/mi)</u></b>	<b><u>pm10 auto (lb/day)</u></b>
0.01	0.04	0.01	0.00	0.28
0.01	0.04	0.01	0.00	4.80
0.01	0.04	0.01	0.00	17.49
0.00	0.04	0.01	0.00	40.16
0.00	0.04	0.01	0.00	126.49
0.00	0.04	0.01	0.00	680.24
0.00	0.04	0.01	0.00	988.43
0.00	0.04	0.01	0.00	579.23
0.00	0.04	0.01	0.00	229.05
0.00	0.04	0.01	0.00	185.03
0.00	0.04	0.01	0.00	308.29
0.00	0.04	0.01	0.00	776.08
0.00	0.04	0.01	0.00	1408.24
0.01	0.04	0.01	0.00	0.31
0.01	0.04	0.01	0.00	4.77
0.01	0.04	0.01	0.00	17.54
0.00	0.04	0.01	0.00	40.09
0.00	0.04	0.01	0.00	126.68
0.00	0.04	0.01	0.00	681.17
0.00	0.04	0.01	0.00	987.39
0.00	0.04	0.01	0.00	578.74
0.00	0.04	0.01	0.00	230.14
0.00	0.04	0.01	0.00	193.75
0.00	0.04	0.01	0.00	303.17
0.00	0.04	0.01	0.00	771.57
0.00	0.04	0.01	0.00	1408.42
0.01	0.04	0.01	0.00	0.28
0.01	0.04	0.01	0.00	4.81
0.01	0.04	0.01	0.00	17.51
0.00	0.04	0.01	0.00	40.46
0.00	0.04	0.01	0.00	127.59
0.00	0.04	0.01	0.00	676.61
0.00	0.04	0.01	0.00	992.18
0.00	0.04	0.01	0.00	576.72
0.00	0.04	0.01	0.00	230.66
0.00	0.04	0.01	0.00	193.61
0.00	0.04	0.01	0.00	304.04
0.00	0.04	0.01	0.00	770.34
0.00	0.04	0.01	0.00	1408.79
0.01	0.04	0.01	0.00	0.28
0.01	0.04	0.01	0.00	4.80
0.01	0.04	0.01	0.00	17.58
0.00	0.04	0.01	0.00	40.21
0.00	0.04	0.01	0.00	126.28
0.00	0.04	0.01	0.00	677.16
0.00	0.04	0.01	0.00	991.21
0.00	0.04	0.01	0.00	578.38
0.00	0.04	0.01	0.00	226.60
0.00	0.04	0.01	0.00	187.68
0.00	0.04	0.01	0.00	311.90
0.00	0.04	0.01	0.00	772.95
0.00	0.04	0.01	0.00	1408.44

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Run truck (g/mi)</u></b>	<b><u>PM10 truck bw (g/mi)</u></b>	<b><u>PM10 truck tw (g/mi)</u></b>	<b><u>PM10 truck re (lb/mi)</u></b>	<b><u>pm10 truck (lb/day)</u></b>	<b><u>PM10 (lb/day)</u></b>
0.17	0.08	0.02	0.00	0.40	0.68
0.14	0.08	0.02	0.00	7.09	11.89
0.10	0.08	0.02	0.00	25.74	43.24
0.08	0.08	0.02	0.00	58.88	99.04
0.06	0.08	0.02	0.00	185.35	311.84
0.06	0.08	0.02	0.00	996.81	1677.05
0.05	0.08	0.02	0.00	1448.58	2437.00
0.05	0.08	0.02	0.00	849.27	1428.50
0.05	0.08	0.02	0.00	336.16	565.22
0.06	0.08	0.02	0.00	272.00	457.03
0.06	0.08	0.02	0.00	0.00	308.29
0.06	0.08	0.02	0.00	0.00	776.08
0.07	0.08	0.02	0.00	0.00	1408.24
0.17	0.08	0.02	0.00	0.45	0.76
0.14	0.08	0.02	0.00	7.02	11.78
0.10	0.08	0.02	0.00	25.71	43.25
0.08	0.08	0.02	0.00	58.54	98.63
0.06	0.08	0.02	0.00	184.91	311.58
0.06	0.08	0.02	0.00	994.34	1675.51
0.05	0.08	0.02	0.00	1441.48	2428.88
0.05	0.08	0.02	0.00	845.28	1424.02
0.05	0.08	0.02	0.00	336.46	566.60
0.06	0.08	0.02	0.00	283.72	477.47
0.06	0.08	0.02	0.00	0.00	303.17
0.06	0.08	0.02	0.00	0.00	771.57
0.07	0.08	0.02	0.00	0.00	1408.42
0.17	0.08	0.02	0.00	0.40	0.68
0.14	0.08	0.02	0.00	7.08	11.89
0.10	0.08	0.02	0.00	25.71	43.22
0.08	0.08	0.02	0.00	59.17	99.63
0.06	0.08	0.02	0.00	186.52	314.11
0.06	0.08	0.02	0.00	989.16	1665.77
0.05	0.08	0.02	0.00	1450.65	2442.82
0.05	0.08	0.02	0.00	843.59	1420.31
0.05	0.08	0.02	0.00	337.73	568.39
0.06	0.08	0.02	0.00	283.93	477.55
0.06	0.08	0.02	0.00	0.00	304.04
0.06	0.08	0.02	0.00	0.00	770.34
0.07	0.08	0.02	0.00	0.00	1408.79
0.17	0.08	0.02	0.00	0.40	0.68
0.14	0.08	0.02	0.00	7.09	11.89
0.10	0.08	0.02	0.00	25.88	43.46
0.08	0.08	0.02	0.00	58.98	99.18
0.06	0.08	0.02	0.00	185.15	311.43
0.06	0.08	0.02	0.00	992.86	1670.02
0.05	0.08	0.02	0.00	1453.47	2444.68
0.05	0.08	0.02	0.00	848.50	1426.89
0.05	0.08	0.02	0.00	332.75	559.35
0.06	0.08	0.02	0.00	276.03	463.71
0.06	0.08	0.02	0.00	0.00	311.90
0.06	0.08	0.02	0.00	0.00	772.95
0.07	0.08	0.02	0.00	0.00	1408.44

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Auto Run (g/mi)</u></b>	<b><u>PM2.5 Auto bw (g/mi)</u></b>	<b><u>PM2.5 Auto tw (g/mi)</u></b>	<b><u>PM2.5 Auto re (lb/mi)</u></b>	<b><u>pm2.5 auto (lb/day)</u></b>
0.01	0.02	0.00	0.00	0.07
0.01	0.02	0.00	0.00	1.14
0.01	0.02	0.00	0.00	3.99
0.00	0.02	0.00	0.00	8.93
0.00	0.02	0.00	0.00	27.68
0.00	0.02	0.00	0.00	147.34
0.00	0.02	0.00	0.00	212.69
0.00	0.02	0.00	0.00	124.12
0.00	0.02	0.00	0.00	48.97
0.00	0.02	0.00	0.00	39.53
0.00	0.02	0.00	0.00	65.91
0.00	0.02	0.00	0.00	166.27
0.00	0.02	0.00	0.00	302.83
0.01	0.02	0.00	0.00	0.08
0.01	0.02	0.00	0.00	1.13
0.01	0.02	0.00	0.00	4.00
0.00	0.02	0.00	0.00	8.91
0.00	0.02	0.00	0.00	27.72
0.00	0.02	0.00	0.00	147.54
0.00	0.02	0.00	0.00	212.46
0.00	0.02	0.00	0.00	124.02
0.00	0.02	0.00	0.00	49.21
0.00	0.02	0.00	0.00	41.40
0.00	0.02	0.00	0.00	64.82
0.00	0.02	0.00	0.00	165.31
0.00	0.02	0.00	0.00	302.87
0.01	0.02	0.00	0.00	0.07
0.01	0.02	0.00	0.00	1.14
0.01	0.02	0.00	0.00	3.99
0.00	0.02	0.00	0.00	8.99
0.00	0.02	0.00	0.00	27.92
0.00	0.02	0.00	0.00	146.55
0.00	0.02	0.00	0.00	213.49
0.00	0.02	0.00	0.00	123.59
0.00	0.02	0.00	0.00	49.32
0.00	0.02	0.00	0.00	41.37
0.00	0.02	0.00	0.00	65.01
0.00	0.02	0.00	0.00	165.04
0.00	0.02	0.00	0.00	302.94
0.01	0.02	0.00	0.00	0.07
0.01	0.02	0.00	0.00	1.14
0.01	0.02	0.00	0.00	4.01
0.00	0.02	0.00	0.00	8.94
0.00	0.02	0.00	0.00	27.63
0.00	0.02	0.00	0.00	146.67
0.00	0.02	0.00	0.00	213.28
0.00	0.02	0.00	0.00	123.94
0.00	0.02	0.00	0.00	48.45
0.00	0.02	0.00	0.00	40.10
0.00	0.02	0.00	0.00	66.68
0.00	0.02	0.00	0.00	165.60
0.00	0.02	0.00	0.00	302.87



**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Run truck (g/mi)</u></b>	<b><u>PM2.5 truck bw (g/mi)</u></b>	<b><u>PM2.5 truck tw (g/mi)</u></b>	<b><u>PM2.5 truck re (lb/mi)</u></b>	<b><u>pm2.5 truck (lb/day)</u></b>	<b><u>PM2.5 (lb/day)</u></b>
0.16	0.04	0.01	0.00	0.09	0.16
0.14	0.04	0.01	0.00	1.50	2.64
0.10	0.04	0.01	0.00	5.10	9.09
0.07	0.04	0.01	0.00	11.12	20.05
0.06	0.04	0.01	0.00	34.23	61.91
0.06	0.04	0.01	0.00	181.74	329.08
0.05	0.04	0.01	0.00	261.96	474.65
0.05	0.04	0.01	0.00	153.06	277.18
0.05	0.04	0.01	0.00	60.66	109.64
0.05	0.04	0.01	0.00	49.37	88.91
0.06	0.04	0.01	0.00	0.00	65.91
0.06	0.04	0.01	0.00	0.00	166.27
0.06	0.04	0.01	0.00	0.00	302.83
0.16	0.04	0.01	0.00	0.10	0.18
0.14	0.04	0.01	0.00	1.48	2.61
0.10	0.04	0.01	0.00	5.09	9.09
0.07	0.04	0.01	0.00	11.06	19.97
0.06	0.04	0.01	0.00	34.15	61.87
0.06	0.04	0.01	0.00	181.29	328.83
0.05	0.04	0.01	0.00	260.68	473.14
0.05	0.04	0.01	0.00	152.34	276.36
0.05	0.04	0.01	0.00	60.72	109.92
0.05	0.04	0.01	0.00	51.50	92.90
0.06	0.04	0.01	0.00	0.00	64.82
0.06	0.04	0.01	0.00	0.00	165.31
0.06	0.04	0.01	0.00	0.00	302.87
0.16	0.04	0.01	0.00	0.09	0.16
0.14	0.04	0.01	0.00	1.49	2.64
0.10	0.04	0.01	0.00	5.09	9.09
0.07	0.04	0.01	0.00	11.18	20.17
0.06	0.04	0.01	0.00	34.45	62.37
0.06	0.04	0.01	0.00	180.35	326.90
0.05	0.04	0.01	0.00	262.34	475.83
0.05	0.04	0.01	0.00	152.04	275.62
0.05	0.04	0.01	0.00	60.94	110.26
0.05	0.04	0.01	0.00	51.54	92.91
0.06	0.04	0.01	0.00	0.00	65.01
0.06	0.04	0.01	0.00	0.00	165.04
0.06	0.04	0.01	0.00	0.00	302.94
0.16	0.04	0.01	0.00	0.09	0.16
0.14	0.04	0.01	0.00	1.50	2.64
0.10	0.04	0.01	0.00	5.13	9.14
0.07	0.04	0.01	0.00	11.14	20.08
0.06	0.04	0.01	0.00	34.20	61.83
0.06	0.04	0.01	0.00	181.02	327.69
0.05	0.04	0.01	0.00	262.85	476.13
0.05	0.04	0.01	0.00	152.92	276.86
0.05	0.04	0.01	0.00	60.05	108.49
0.05	0.04	0.01	0.00	50.11	90.20
0.06	0.04	0.01	0.00	0.00	66.68
0.06	0.04	0.01	0.00	0.00	165.60
0.06	0.04	0.01	0.00	0.00	302.87

**Mobile Source Emissions Calculation Sheets**

<u>CO-Auto (g/mi)</u>	<u>CO-Truck (g/mi)</u>	<u>CO (lb/day)</u>	<u>NOX-Auto (g/mi)</u>	<u>NOX-Truck (g/mi)</u>	<u>NOX (lb/day)</u>	<u>ROG-Auto</u>	<u>ROG-Truck</u>	<u>ROG (lb/day)</u>
2.95	4.72	4.65	0.29	11.98	2.44	0.27	1.53	0.61
2.52	3.80	69.89	0.25	9.99	36.38	0.17	1.17	7.63
2.18	2.77	218.13	0.21	7.36	101.31	0.12	0.70	18.08
1.93	2.08	437.16	0.19	5.73	186.92	0.09	0.42	27.83
1.74	1.68	1228.41	0.17	4.93	515.46	0.07	0.31	66.21
1.58	1.40	5978.21	0.16	4.49	2546.96	0.05	0.24	283.26
1.46	1.20	7953.03	0.15	4.19	3478.42	0.04	0.19	339.30
1.36	1.05	4318.33	0.15	3.99	1948.45	0.04	0.15	170.61
1.28	0.95	1603.07	0.15	3.85	746.88	0.04	0.13	60.59
1.22	0.89	1234.20	0.15	3.76	592.14	0.04	0.11	46.26
1.18	0.88	1818.47	0.15	3.70	227.02	0.04	0.11	55.26
1.17	0.91	4534.69	0.15	3.70	589.29	0.04	0.11	149.62
1.20	0.98	8383.48	0.16	3.73	1119.90	0.04	0.11	306.61
2.95	4.72	5.20	0.29	11.98	2.72	0.27	1.53	0.68
2.52	3.80	69.37	0.25	9.99	36.02	0.17	1.17	7.56
2.18	2.77	218.55	0.21	7.36	101.24	0.12	0.70	18.09
1.93	2.08	436.15	0.19	5.73	186.00	0.09	0.42	27.74
1.74	1.68	1229.69	0.17	4.93	514.65	0.07	0.31	66.21
1.58	1.40	5984.01	0.16	4.49	2542.73	0.05	0.24	283.24
1.46	1.20	7941.70	0.15	4.19	3464.28	0.04	0.19	338.47
1.36	1.05	4313.15	0.15	3.99	1940.95	0.04	0.15	170.24
1.28	0.95	1610.12	0.15	3.85	748.17	0.04	0.13	60.81
1.22	0.89	1291.93	0.15	3.76	618.20	0.04	0.11	48.38
1.18	0.88	1788.28	0.15	3.70	223.25	0.04	0.11	54.34
1.17	0.91	4508.34	0.15	3.70	585.86	0.04	0.11	148.75
1.20	0.98	8384.57	0.16	3.73	1120.04	0.04	0.11	306.65
2.95	4.72	4.65	0.29	11.98	2.44	0.27	1.53	0.61
2.52	3.80	69.94	0.25	9.99	36.35	0.17	1.17	7.63
2.18	2.77	218.26	0.21	7.36	101.21	0.12	0.70	18.08
1.93	2.08	440.25	0.19	5.73	187.94	0.09	0.42	28.01
1.74	1.68	1238.79	0.17	4.93	518.98	0.07	0.31	66.73
1.58	1.40	5944.87	0.16	4.49	2528.68	0.05	0.24	281.50
1.46	1.20	7981.37	0.15	4.19	3485.16	0.04	0.19	340.30
1.36	1.05	4298.69	0.15	3.99	1936.44	0.04	0.15	169.74
1.28	0.95	1613.98	0.15	3.85	750.74	0.04	0.13	60.97
1.22	0.89	1291.15	0.15	3.76	618.46	0.04	0.11	48.37
1.18	0.88	1793.42	0.15	3.70	223.90	0.04	0.11	54.50
1.17	0.91	4501.14	0.15	3.70	584.93	0.04	0.11	148.51
1.20	0.98	8386.73	0.16	3.73	1120.33	0.04	0.11	306.73
2.95	4.72	4.65	0.29	11.98	2.44	0.27	1.53	0.61
2.52	3.80	69.83	0.25	9.99	36.36	0.17	1.17	7.62
2.18	2.77	219.16	0.21	7.36	101.83	0.12	0.70	18.17
1.93	2.08	437.68	0.19	5.73	187.22	0.09	0.42	27.87
1.74	1.68	1226.47	0.17	4.93	514.84	0.07	0.31	66.12
1.58	1.40	5951.51	0.16	4.49	2536.55	0.05	0.24	282.04
1.46	1.20	7975.88	0.15	4.19	3489.75	0.04	0.19	340.33
1.36	1.05	4312.25	0.15	3.99	1946.46	0.04	0.15	170.40
1.28	0.95	1585.97	0.15	3.85	739.20	0.04	0.13	59.95
1.22	0.89	1251.88	0.15	3.76	600.85	0.04	0.11	46.93
1.18	0.88	1839.73	0.15	3.70	229.68	0.04	0.11	55.90
1.17	0.91	4516.40	0.15	3.70	586.91	0.04	0.11	149.02
1.20	0.98	8384.63	0.16	3.73	1120.05	0.04	0.11	306.65

**Mobile Source Emissions Calculation Sheets**

<u>SOX-Auto</u>	<u>SOX-TRUCK</u>	<u>SOX (lb/day)</u>	<u>CH4 Auto</u>	<u>CH4 Truck</u>	<u>CH4 (lb/day)</u>	<u>CO2 Auto</u>	<u>CO2 Truck</u>	<u>CO2 (lb/day)</u>
0.01	0.02	0.02	0.10	0.21	0.16	1196.24	2542.97	1994.44
0.01	0.02	0.27	0.06	0.16	1.97	890.07	2281.45	27593.37
0.01	0.02	0.78	0.04	0.10	4.67	685.11	1836.08	79342.47
0.01	0.01	1.48	0.03	0.07	7.23	547.11	1579.41	149626.38
0.00	0.01	3.98	0.02	0.05	17.09	454.26	1439.63	403832.48
0.00	0.01	18.94	0.02	0.04	72.64	391.54	1342.26	1923017.71
0.00	0.01	25.15	0.01	0.03	86.72	350.11	1280.22	2555616.83
0.00	0.01	13.83	0.01	0.02	43.57	324.75	1226.37	1405702.25
0.00	0.01	5.27	0.01	0.02	15.48	312.43	1181.37	535386.39
0.00	0.01	4.22	0.01	0.02	11.83	311.81	1156.02	428933.30
0.00	0.01	4.97	0.01	0.02	16.63	322.94	1140.33	496804.58
0.00	0.01	13.44	0.01	0.01	44.87	347.07	1132.33	1343324.85
0.00	0.01	27.17	0.01	0.02	91.82	387.02	1135.12	2714918.40
0.01	0.02	0.02	0.10	0.21	0.18	1196.24	2542.97	2230.52
0.01	0.02	0.27	0.06	0.16	1.95	890.07	2281.45	27377.43
0.01	0.02	0.78	0.04	0.10	4.68	685.11	1836.08	79462.11
0.01	0.01	1.47	0.03	0.07	7.21	547.11	1579.41	149192.63
0.00	0.01	3.98	0.02	0.05	17.10	454.26	1439.63	403971.25
0.00	0.01	18.94	0.02	0.04	72.68	391.54	1342.26	1923352.19
0.00	0.01	25.10	0.01	0.03	86.56	350.11	1280.22	2549736.84
0.00	0.01	13.80	0.01	0.02	43.50	324.75	1226.37	1402717.07
0.00	0.01	5.29	0.01	0.02	15.54	312.43	1181.37	537235.59
0.00	0.01	4.41	0.01	0.02	12.38	311.81	1156.02	448578.50
0.00	0.01	4.89	0.01	0.02	16.35	322.94	1140.33	488554.41
0.00	0.01	13.37	0.01	0.01	44.61	347.07	1132.33	1335421.38
0.00	0.01	27.17	0.01	0.02	91.83	387.02	1135.12	2715268.60
0.01	0.02	0.02	0.10	0.21	0.16	1196.24	2542.97	1995.06
0.01	0.02	0.27	0.06	0.16	1.97	890.07	2281.45	27608.08
0.01	0.02	0.78	0.04	0.10	4.67	685.11	1836.08	79369.32
0.01	0.01	1.49	0.03	0.07	7.28	547.11	1579.41	150630.24
0.00	0.01	4.01	0.02	0.05	17.23	454.26	1439.63	407070.26
0.00	0.01	18.83	0.02	0.04	72.21	391.54	1342.26	1911360.80
0.00	0.01	25.23	0.01	0.03	87.01	350.11	1280.22	2563347.32
0.00	0.01	13.76	0.01	0.02	43.36	324.75	1226.37	1398516.49
0.00	0.01	5.30	0.01	0.02	15.58	312.43	1181.37	538722.13
0.00	0.01	4.41	0.01	0.02	12.37	311.81	1156.02	448470.34
0.00	0.01	4.90	0.01	0.02	16.40	322.94	1140.33	489959.78
0.00	0.01	13.34	0.01	0.01	44.54	347.07	1132.33	1333289.25
0.00	0.01	27.18	0.01	0.02	91.86	387.02	1135.12	2715970.12
0.01	0.02	0.02	0.10	0.21	0.16	1196.24	2542.97	1993.84
0.01	0.02	0.27	0.06	0.16	1.97	890.07	2281.45	27569.30
0.01	0.02	0.79	0.04	0.10	4.69	685.11	1836.08	79725.32
0.01	0.01	1.48	0.03	0.07	7.24	547.11	1579.41	149816.67
0.00	0.01	3.98	0.02	0.05	17.07	454.26	1439.63	403236.33
0.00	0.01	18.86	0.02	0.04	72.32	391.54	1342.26	1914653.13
0.00	0.01	25.23	0.01	0.03	86.98	350.11	1280.22	2563285.59
0.00	0.01	13.81	0.01	0.02	43.51	324.75	1226.37	1403912.50
0.00	0.01	5.21	0.01	0.02	15.31	312.43	1181.37	529749.09
0.00	0.01	4.28	0.01	0.02	12.00	311.81	1156.02	435135.00
0.00	0.01	5.03	0.01	0.02	16.82	322.94	1140.33	502612.41
0.00	0.01	13.39	0.01	0.01	44.69	347.07	1132.33	1337808.93
0.00	0.01	27.17	0.01	0.02	91.84	387.02	1135.12	2715290.92

**Mobile Source Emissions Calculation Sheets**

<u>YEAR</u>	<u>Alternative</u>	<u>Alignment</u>	<u>Speed</u>	<u>Auto VMT</u>	<u>Truck VMT</u>	<u>Auto Weight (ton)</u>	<u>Truck Weight (Ton)</u>
2016	NB	M	5	590.6	77.7	1.55	20.00
2016	NB	M	10	10,515.6	1,383.3	1.55	20.00
2016	NB	M	15	38,892.3	5,116.2	1.55	20.00
2016	NB	M	20	89,814.1	11,814.8	1.55	20.00
2016	NB	M	25	289,515.4	38,084.9	1.55	20.00
2016	NB	M	30	1,521,954.7	200,208.8	1.55	20.00
2016	NB	M	35	2,242,038.2	294,933.7	1.55	20.00
2016	NB	M	40	1,311,042.1	172,463.8	1.55	20.00
2016	NB	M	45	520,930.5	68,526.9	1.55	20.00
2016	NB	M	50	432,632.5	56,911.6	1.55	20.00
2016	NB	M	55	690,056.2	0.0	1.55	20.00
2016	NB	M	60	1,746,680.9	0.0	1.55	20.00
2016	NB	M	65	3,182,683.7	0.0	1.55	20.00
2016	NB	H	5	590.6	77.7	1.55	20.00
2016	NB	H	10	10,515.6	1,383.3	1.55	20.00
2016	NB	H	15	38,892.3	5,116.2	1.55	20.00
2016	NB	H	20	89,814.1	11,814.8	1.55	20.00
2016	NB	H	25	289,515.4	38,084.9	1.55	20.00
2016	NB	H	30	1,521,954.7	200,208.8	1.55	20.00
2016	NB	H	35	2,242,038.2	294,933.7	1.55	20.00
2016	NB	H	40	1,311,042.1	172,463.8	1.55	20.00
2016	NB	H	45	520,930.5	68,526.9	1.55	20.00
2016	NB	H	50	432,632.5	56,911.6	1.55	20.00
2016	NB	H	55	690,056.2	0.0	1.55	20.00
2016	NB	H	60	1,746,680.9	0.0	1.55	20.00
2016	NB	H	65	3,182,683.7	0.0	1.55	20.00
2020	A	M	5	651.1	89.2	1.55	20.00
2020	A	M	10	10,504.9	1,439.3	1.55	20.00
2020	A	M	15	40,849.2	5,597.0	1.55	20.00
2020	A	M	20	92,234.7	12,637.5	1.55	20.00
2020	A	M	25	274,008.7	37,543.3	1.55	20.00
2020	A	M	30	1,480,136.2	202,801.0	1.55	20.00
2020	A	M	35	2,244,935.7	307,590.0	1.55	20.00
2020	A	M	40	1,383,559.7	189,568.5	1.55	20.00
2020	A	M	45	564,346.2	77,323.9	1.55	20.00
2020	A	M	50	460,825.8	63,140.1	1.55	20.00
2020	A	M	55	808,804.9	0.0	1.55	20.00
2020	A	M	60	1,924,291.9	0.0	1.55	20.00
2020	A	M	65	3,206,687.9	0.0	1.55	20.00
2020	A	H	5	756.0	103.2	1.55	20.00
2020	A	H	10	10,397.8	1,419.7	1.55	20.00
2020	A	H	15	40,988.8	5,596.5	1.55	20.00
2020	A	H	20	92,026.6	12,565.1	1.55	20.00
2020	A	H	25	274,122.2	37,427.9	1.55	20.00
2020	A	H	30	1,482,469.3	202,412.3	1.55	20.00
2020	A	H	35	2,242,842.1	306,231.5	1.55	20.00
2020	A	H	40	1,382,930.3	188,821.5	1.55	20.00
2020	A	H	45	566,198.4	77,307.2	1.55	20.00
2020	A	H	50	479,159.1	65,423.1	1.55	20.00
2020	A	H	55	804,117.4	0.0	1.55	20.00
2020	A	H	60	1,908,732.7	0.0	1.55	20.00
2020	A	H	65	3,207,076.7	0.0	1.55	20.00

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Auto Run (g/mi)</u></b>	<b><u>PM10 Auto bw (g/mi)</u></b>	<b><u>PM10 Auto tw (g/mi)</u></b>	<b><u>PM10 Auto re (lb/mi)</u></b>	<b><u>pm10 auto (lb/day)</u></b>
0.01	0.04	0.01	0.00	0.28
0.01	0.04	0.01	0.00	4.81
0.01	0.04	0.01	0.00	17.54
0.00	0.04	0.01	0.00	40.16
0.00	0.04	0.01	0.00	128.82
0.00	0.04	0.01	0.00	675.08
0.00	0.04	0.01	0.00	992.48
0.00	0.04	0.01	0.00	579.63
0.00	0.04	0.01	0.00	230.16
0.00	0.04	0.01	0.00	191.10
0.00	0.04	0.01	0.00	304.87
0.00	0.04	0.01	0.00	772.18
0.00	0.04	0.01	0.00	1408.57
0.01	0.04	0.01	0.00	0.28
0.01	0.04	0.01	0.00	4.81
0.01	0.04	0.01	0.00	17.54
0.00	0.04	0.01	0.00	40.16
0.00	0.04	0.01	0.00	128.82
0.00	0.04	0.01	0.00	675.08
0.00	0.04	0.01	0.00	992.48
0.00	0.04	0.01	0.00	579.63
0.00	0.04	0.01	0.00	230.16
0.00	0.04	0.01	0.00	191.10
0.00	0.04	0.01	0.00	304.87
0.00	0.04	0.01	0.00	772.18
0.00	0.04	0.01	0.00	1408.57
0.01	0.04	0.01	0.00	0.30
0.01	0.04	0.01	0.00	4.79
0.01	0.04	0.01	0.00	18.38
0.00	0.04	0.01	0.00	41.17
0.00	0.04	0.01	0.00	121.71
0.00	0.04	0.01	0.00	655.49
0.00	0.04	0.01	0.00	992.27
0.00	0.04	0.01	0.00	610.82
0.00	0.04	0.01	0.00	248.99
0.00	0.04	0.01	0.00	203.27
0.00	0.04	0.01	0.00	356.81
0.00	0.04	0.01	0.00	849.40
0.00	0.04	0.01	0.00	1416.92
0.01	0.04	0.01	0.00	0.35
0.01	0.04	0.01	0.00	4.74
0.01	0.04	0.01	0.00	18.44
0.00	0.04	0.01	0.00	41.07
0.00	0.04	0.01	0.00	121.76
0.00	0.04	0.01	0.00	656.52
0.00	0.04	0.01	0.00	991.35
0.00	0.04	0.01	0.00	610.54
0.00	0.04	0.01	0.00	249.80
0.00	0.04	0.01	0.00	211.35
0.00	0.04	0.01	0.00	354.75
0.00	0.04	0.01	0.00	842.53
0.00	0.04	0.01	0.00	1417.09

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Run truck (g/mi)</u></b>	<b><u>PM10 truck bw (g/mi)</u></b>	<b><u>PM10 truck tw (g/mi)</u></b>	<b><u>PM10 truck re (lb/mi)</u></b>	<b><u>pm10 truck (lb/day)</u></b>	<b><u>PM10 (lb/day)</u></b>
0.17	0.08	0.02	0.00	0.40	0.68
0.14	0.08	0.02	0.00	7.07	11.88
0.10	0.08	0.02	0.00	25.71	43.25
0.08	0.08	0.02	0.00	58.66	98.82
0.06	0.08	0.02	0.00	188.05	316.87
0.06	0.08	0.02	0.00	985.53	1660.61
0.05	0.08	0.02	0.00	1449.05	2441.53
0.05	0.08	0.02	0.00	846.66	1426.30
0.05	0.08	0.02	0.00	336.51	566.67
0.06	0.08	0.02	0.00	279.86	470.96
0.06	0.08	0.02	0.00	0.00	304.87
0.06	0.08	0.02	0.00	0.00	772.18
0.07	0.08	0.02	0.00	0.00	1408.57
0.17	0.08	0.02	0.00	0.40	0.68
0.14	0.08	0.02	0.00	7.07	11.88
0.10	0.08	0.02	0.00	25.71	43.25
0.08	0.08	0.02	0.00	58.66	98.82
0.06	0.08	0.02	0.00	188.05	316.87
0.06	0.08	0.02	0.00	985.53	1660.61
0.05	0.08	0.02	0.00	1449.05	2441.53
0.05	0.08	0.02	0.00	846.66	1426.30
0.05	0.08	0.02	0.00	336.51	566.67
0.06	0.08	0.02	0.00	279.86	470.96
0.06	0.08	0.02	0.00	0.00	304.87
0.06	0.08	0.02	0.00	0.00	772.18
0.07	0.08	0.02	0.00	0.00	1408.57
0.05	0.08	0.02	0.00	0.44	0.74
0.04	0.08	0.02	0.00	7.04	11.82
0.03	0.08	0.02	0.00	27.27	45.65
0.03	0.08	0.02	0.00	61.45	102.61
0.03	0.08	0.02	0.00	182.29	304.00
0.02	0.08	0.02	0.00	983.85	1639.34
0.02	0.08	0.02	0.00	1491.47	2483.75
0.02	0.08	0.02	0.00	919.02	1529.84
0.02	0.08	0.02	0.00	374.90	623.88
0.02	0.08	0.02	0.00	306.23	509.50
0.02	0.08	0.02	0.00	0.00	356.81
0.03	0.08	0.02	0.00	0.00	849.40
0.03	0.08	0.02	0.00	0.00	1416.92
0.05	0.08	0.02	0.00	0.51	0.86
0.04	0.08	0.02	0.00	6.94	11.68
0.03	0.08	0.02	0.00	27.27	45.71
0.03	0.08	0.02	0.00	61.09	102.17
0.03	0.08	0.02	0.00	181.73	303.49
0.02	0.08	0.02	0.00	981.97	1638.48
0.02	0.08	0.02	0.00	1484.89	2476.24
0.02	0.08	0.02	0.00	915.40	1525.94
0.02	0.08	0.02	0.00	374.81	624.62
0.02	0.08	0.02	0.00	317.30	528.66
0.02	0.08	0.02	0.00	0.00	354.75
0.03	0.08	0.02	0.00	0.00	842.53
0.03	0.08	0.02	0.00	0.00	1417.09

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Auto Run (g/mi)</u></b>	<b><u>PM2.5 Auto bw (g/mi)</u></b>	<b><u>PM2.5 Auto tw (g/mi)</u></b>	<b><u>PM2.5 Auto re (lb/mi)</u></b>	<b><u>pm2.5 auto (lb/day)</u></b>
0.01	0.02	0.00	0.00	0.07
0.01	0.02	0.00	0.00	1.14
0.01	0.02	0.00	0.00	4.00
0.00	0.02	0.00	0.00	8.93
0.00	0.02	0.00	0.00	28.19
0.00	0.02	0.00	0.00	146.22
0.00	0.02	0.00	0.00	213.56
0.00	0.02	0.00	0.00	124.21
0.00	0.02	0.00	0.00	49.21
0.00	0.02	0.00	0.00	40.83
0.00	0.02	0.00	0.00	65.18
0.00	0.02	0.00	0.00	165.44
0.00	0.02	0.00	0.00	302.90
0.01	0.02	0.00	0.00	0.07
0.01	0.02	0.00	0.00	1.14
0.01	0.02	0.00	0.00	4.00
0.00	0.02	0.00	0.00	8.93
0.00	0.02	0.00	0.00	28.19
0.00	0.02	0.00	0.00	146.22
0.00	0.02	0.00	0.00	213.56
0.00	0.02	0.00	0.00	124.21
0.00	0.02	0.00	0.00	49.21
0.00	0.02	0.00	0.00	40.83
0.00	0.02	0.00	0.00	65.18
0.00	0.02	0.00	0.00	165.44
0.00	0.02	0.00	0.00	302.90
0.01	0.02	0.00	0.00	0.08
0.01	0.02	0.00	0.00	1.13
0.01	0.02	0.00	0.00	4.17
0.00	0.02	0.00	0.00	9.11
0.00	0.02	0.00	0.00	26.52
0.00	0.02	0.00	0.00	141.43
0.00	0.02	0.00	0.00	212.75
0.00	0.02	0.00	0.00	130.45
0.00	0.02	0.00	0.00	53.06
0.00	0.02	0.00	0.00	43.28
0.00	0.02	0.00	0.00	76.02
0.00	0.02	0.00	0.00	181.31
0.00	0.02	0.00	0.00	303.49
0.01	0.02	0.00	0.00	0.09
0.01	0.02	0.00	0.00	1.12
0.01	0.02	0.00	0.00	4.18
0.00	0.02	0.00	0.00	9.09
0.00	0.02	0.00	0.00	26.53
0.00	0.02	0.00	0.00	141.65
0.00	0.02	0.00	0.00	212.55
0.00	0.02	0.00	0.00	130.39
0.00	0.02	0.00	0.00	53.23
0.00	0.02	0.00	0.00	45.01
0.00	0.02	0.00	0.00	75.58
0.00	0.02	0.00	0.00	179.84
0.00	0.02	0.00	0.00	303.52

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Run truck (g/mi)</u></b>	<b><u>PM2.5 truck bw (g/mi)</u></b>	<b><u>PM2.5 truck tw (g/mi)</u></b>	<b><u>PM2.5 truck re (lb/mi)</u></b>	<b><u>pm2.5 truck (lb/day)</u></b>	<b><u>PM2.5 (lb/day)</u></b>
0.16	0.04	0.01	0.00	0.09	0.16
0.14	0.04	0.01	0.00	1.49	2.63
0.10	0.04	0.01	0.00	5.09	9.09
0.07	0.04	0.01	0.00	11.08	20.01
0.06	0.04	0.01	0.00	34.73	62.92
0.06	0.04	0.01	0.00	179.68	325.91
0.05	0.04	0.01	0.00	262.05	475.60
0.05	0.04	0.01	0.00	152.59	276.80
0.05	0.04	0.01	0.00	60.73	109.93
0.05	0.04	0.01	0.00	50.80	91.63
0.06	0.04	0.01	0.00	0.00	65.18
0.06	0.04	0.01	0.00	0.00	165.44
0.06	0.04	0.01	0.00	0.00	302.90
0.16	0.04	0.01	0.00	0.09	0.16
0.14	0.04	0.01	0.00	1.49	2.63
0.10	0.04	0.01	0.00	5.09	9.09
0.07	0.04	0.01	0.00	11.08	20.01
0.06	0.04	0.01	0.00	34.73	62.92
0.06	0.04	0.01	0.00	179.68	325.91
0.05	0.04	0.01	0.00	262.05	475.60
0.05	0.04	0.01	0.00	152.59	276.80
0.05	0.04	0.01	0.00	60.73	109.93
0.05	0.04	0.01	0.00	50.80	91.63
0.06	0.04	0.01	0.00	0.00	65.18
0.06	0.04	0.01	0.00	0.00	165.44
0.06	0.04	0.01	0.00	0.00	302.90
0.05	0.04	0.01	0.00	0.08	0.15
0.04	0.04	0.01	0.00	1.24	2.37
0.03	0.04	0.01	0.00	4.74	8.91
0.03	0.04	0.01	0.00	10.58	19.69
0.02	0.04	0.01	0.00	31.19	57.71
0.02	0.04	0.01	0.00	167.65	309.09
0.02	0.04	0.01	0.00	253.57	466.33
0.02	0.04	0.01	0.00	156.11	286.56
0.02	0.04	0.01	0.00	63.71	116.77
0.02	0.04	0.01	0.00	52.12	95.40
0.02	0.04	0.01	0.00	0.00	76.02
0.02	0.04	0.01	0.00	0.00	181.31
0.02	0.04	0.01	0.00	0.00	303.49
0.05	0.04	0.01	0.00	0.09	0.18
0.04	0.04	0.01	0.00	1.22	2.34
0.03	0.04	0.01	0.00	4.74	8.92
0.03	0.04	0.01	0.00	10.52	19.61
0.02	0.04	0.01	0.00	31.09	57.62
0.02	0.04	0.01	0.00	167.33	308.99
0.02	0.04	0.01	0.00	252.45	465.01
0.02	0.04	0.01	0.00	155.49	285.89
0.02	0.04	0.01	0.00	63.69	116.93
0.02	0.04	0.01	0.00	54.00	99.01
0.02	0.04	0.01	0.00	0.00	75.58
0.02	0.04	0.01	0.00	0.00	179.84
0.02	0.04	0.01	0.00	0.00	303.52



**Mobile Source Emissions Calculation Sheets**

<u>CO-Auto (g/mi)</u>	<u>CO-Truck (g/mi)</u>	<u>CO (lb/day)</u>	<u>NOX-Auto (g/mi)</u>	<u>NOX-Truck (g/mi)</u>	<u>NOX (lb/day)</u>	<u>ROG-Auto</u>	<u>ROG-Truck</u>	<u>ROG (lb/day)</u>
2.95	4.72	4.65	0.29	11.98	2.43	0.27	1.53	0.61
2.52	3.80	69.91	0.25	9.99	36.30	0.17	1.17	7.62
2.18	2.77	218.53	0.21	7.36	101.24	0.12	0.70	18.09
1.93	2.08	436.96	0.19	5.73	186.36	0.09	0.42	27.79
1.74	1.68	1250.51	0.17	4.93	523.40	0.07	0.31	67.33
1.58	1.40	5930.52	0.16	4.49	2520.16	0.05	0.24	280.71
1.46	1.20	7982.69	0.15	4.19	3482.38	0.04	0.19	340.23
1.36	1.05	4319.84	0.15	3.99	1944.09	0.04	0.15	170.51
1.28	0.95	1610.25	0.15	3.85	748.28	0.04	0.13	60.81
1.22	0.89	1274.25	0.15	3.76	609.78	0.04	0.11	47.72
1.18	0.88	1798.30	0.15	3.70	224.51	0.04	0.11	54.65
1.17	0.91	4511.92	0.15	3.70	586.33	0.04	0.11	148.87
1.20	0.98	8385.46	0.16	3.73	1120.16	0.04	0.11	306.68
2.95	4.72	4.65	0.29	11.98	2.43	0.27	1.53	0.61
2.52	3.80	69.91	0.25	9.99	36.30	0.17	1.17	7.62
2.18	2.77	218.53	0.21	7.36	101.24	0.12	0.70	18.09
1.93	2.08	436.96	0.19	5.73	186.36	0.09	0.42	27.79
1.74	1.68	1250.51	0.17	4.93	523.40	0.07	0.31	67.33
1.58	1.40	5930.52	0.16	4.49	2520.16	0.05	0.24	280.71
1.46	1.20	7982.69	0.15	4.19	3482.38	0.04	0.19	340.23
1.36	1.05	4319.84	0.15	3.99	1944.09	0.04	0.15	170.51
1.28	0.95	1610.25	0.15	3.85	748.28	0.04	0.13	60.81
1.22	0.89	1274.25	0.15	3.76	609.78	0.04	0.11	47.72
1.18	0.88	1798.30	0.15	3.70	224.51	0.04	0.11	54.65
1.17	0.91	4511.92	0.15	3.70	586.33	0.04	0.11	148.87
1.20	0.98	8385.46	0.16	3.73	1120.16	0.04	0.11	306.68
1.90	3.80	3.48	0.19	11.82	2.60	0.17	0.84	0.41
1.65	3.05	47.85	0.16	9.60	34.21	0.11	0.65	4.69
1.44	2.18	156.87	0.14	6.74	95.46	0.08	0.43	12.15
1.28	1.62	306.09	0.12	4.89	160.29	0.05	0.29	19.06
1.16	1.26	805.17	0.11	3.81	380.85	0.04	0.21	42.32
1.06	1.01	3908.52	0.10	3.25	1781.25	0.03	0.16	178.37
0.98	0.83	5389.19	0.10	2.90	2437.69	0.03	0.13	218.75
0.91	0.69	3053.52	0.09	2.66	1393.41	0.02	0.10	113.33
0.85	0.60	1158.42	0.09	2.50	538.00	0.02	0.08	40.59
0.80	0.53	891.12	0.09	2.38	422.71	0.02	0.06	30.54
0.77	0.50	1374.07	0.09	2.30	161.81	0.02	0.05	38.70
0.75	0.50	3185.62	0.09	2.28	396.01	0.02	0.05	98.94
0.75	0.54	5288.69	0.10	2.30	690.07	0.03	0.06	186.32
1.90	3.80	4.03	0.19	11.82	3.01	0.17	0.84	0.48
1.65	3.05	47.32	0.16	9.60	33.76	0.11	0.65	4.63
1.44	2.18	157.32	0.14	6.74	95.50	0.08	0.43	12.17
1.28	1.62	305.25	0.12	4.89	159.46	0.05	0.29	18.99
1.16	1.26	805.14	0.11	3.81	379.90	0.04	0.21	42.27
1.06	1.01	3913.11	0.10	3.25	1778.98	0.03	0.16	178.40
0.98	0.83	5382.22	0.10	2.90	2428.56	0.03	0.13	218.25
0.91	0.69	3051.12	0.09	2.66	1388.90	0.02	0.10	113.14
0.85	0.60	1161.87	0.09	2.50	538.28	0.02	0.08	40.67
0.80	0.53	926.31	0.09	2.38	438.32	0.02	0.06	31.72
0.77	0.50	1366.11	0.09	2.30	160.87	0.02	0.05	38.48
0.75	0.50	3159.86	0.09	2.28	392.81	0.02	0.05	98.14
0.75	0.54	5289.33	0.10	2.30	690.16	0.03	0.06	186.34

**Mobile Source Emissions Calculation Sheets**

<b><u>SOX-Auto</u></b>	<b><u>SOX-TRUCK</u></b>	<b><u>SOX (lb/day)</u></b>	<b><u>CH4 Auto</u></b>	<b><u>CH4 Truck</u></b>	<b><u>CH4 (lb/day)</u></b>	<b><u>CO2 Auto</u></b>	<b><u>CO2 Truck</u></b>	<b><u>CO2 (lb/day)</u></b>
0.01	0.02	0.02	0.10	0.21	0.16	1196.24	2542.97	1993.10
0.01	0.02	0.27	0.06	0.16	1.97	890.07	2281.45	27592.02
0.01	0.02	0.78	0.04	0.10	4.68	685.11	1836.08	79453.02
0.01	0.01	1.47	0.03	0.07	7.23	547.11	1579.41	149470.43
0.00	0.01	4.05	0.02	0.05	17.39	454.26	1439.63	410819.45
0.00	0.01	18.78	0.02	0.04	72.03	391.54	1342.26	1906195.78
0.00	0.01	25.23	0.01	0.03	87.01	350.11	1280.22	2562950.92
0.00	0.01	13.82	0.01	0.02	43.56	324.75	1226.37	1404924.75
0.00	0.01	5.29	0.01	0.02	15.54	312.43	1181.37	537291.17
0.00	0.01	4.35	0.01	0.02	12.21	311.81	1156.02	442450.58
0.00	0.01	4.92	0.01	0.02	16.44	322.94	1140.33	491294.26
0.00	0.01	13.38	0.01	0.01	44.65	347.07	1132.33	1336480.95
0.00	0.01	27.17	0.01	0.02	91.84	387.02	1135.12	2715557.67
0.01	0.02	0.02	0.10	0.21	0.16	1196.24	2542.97	1993.10
0.01	0.02	0.27	0.06	0.16	1.97	890.07	2281.45	27592.02
0.01	0.02	0.78	0.04	0.10	4.68	685.11	1836.08	79453.02
0.01	0.01	1.47	0.03	0.07	7.23	547.11	1579.41	149470.43
0.00	0.01	4.05	0.02	0.05	17.39	454.26	1439.63	410819.45
0.00	0.01	18.78	0.02	0.04	72.03	391.54	1342.26	1906195.78
0.00	0.01	25.23	0.01	0.03	87.01	350.11	1280.22	2562950.92
0.00	0.01	13.82	0.01	0.02	43.56	324.75	1226.37	1404924.75
0.00	0.01	5.29	0.01	0.02	15.54	312.43	1181.37	537291.17
0.00	0.01	4.35	0.01	0.02	12.21	311.81	1156.02	442450.58
0.00	0.01	4.92	0.01	0.02	16.44	322.94	1140.33	491294.26
0.00	0.01	13.38	0.01	0.01	44.65	347.07	1132.33	1336480.95
0.00	0.01	27.17	0.01	0.02	91.84	387.02	1135.12	2715557.67
0.01	0.02	0.02	0.07	0.17	0.13	1052.06	2521.67	2006.00
0.01	0.02	0.25	0.04	0.13	1.46	782.98	2250.85	25275.69
0.01	0.02	0.76	0.03	0.09	3.68	602.83	1829.48	76862.92
0.00	0.01	1.40	0.02	0.06	5.61	481.48	1584.52	142051.54
0.00	0.01	3.55	0.01	0.05	12.37	399.80	1450.99	361613.38
0.00	0.01	16.97	0.01	0.03	52.13	344.62	1357.73	1731572.28
0.00	0.01	23.53	0.01	0.03	64.04	308.17	1295.37	2403627.12
0.00	0.01	13.61	0.01	0.02	33.30	285.86	1241.52	1390808.61
0.00	0.01	5.34	0.01	0.02	12.00	275.03	1195.90	546044.40
0.00	0.01	4.32	0.01	0.01	9.11	274.48	1166.22	441199.17
0.00	0.01	5.06	0.01	0.01	13.05	284.28	1145.39	506896.96
0.00	0.01	12.95	0.01	0.01	33.31	305.51	1135.02	1296077.70
0.00	0.01	24.06	0.01	0.01	62.71	340.67	1137.15	2408388.60
0.01	0.02	0.02	0.07	0.17	0.15	1052.06	2521.67	2327.39
0.01	0.02	0.25	0.04	0.13	1.44	782.98	2250.85	24993.40
0.01	0.02	0.76	0.03	0.09	3.69	602.83	1829.48	77046.72
0.00	0.01	1.39	0.02	0.06	5.59	481.48	1584.52	141577.51
0.00	0.01	3.54	0.01	0.05	12.36	399.80	1450.99	361344.21
0.00	0.01	16.97	0.01	0.03	52.15	344.62	1357.73	1732181.39
0.00	0.01	23.48	0.01	0.03	63.91	308.17	1295.37	2398325.05
0.00	0.01	13.59	0.01	0.02	33.26	285.86	1241.52	1388367.23
0.00	0.01	5.35	0.01	0.02	12.03	275.03	1195.90	547123.19
0.00	0.01	4.48	0.01	0.01	9.47	274.48	1166.22	458162.98
0.00	0.01	5.04	0.01	0.01	12.97	284.28	1145.39	503959.17
0.00	0.01	12.84	0.01	0.01	33.04	305.51	1135.02	1285598.02
0.00	0.01	24.06	0.01	0.01	62.72	340.67	1137.15	2408680.58

**Mobile Source Emissions Calculation Sheets**

<b><u>YEAR</u></b>	<b><u>Alternative</u></b>	<b><u>Alignment</u></b>	<b><u>Speed</u></b>	<b><u>Auto VMT</u></b>	<b><u>Truck VMT</u></b>	<b><u>Auto Weight (ton)</u></b>	<b><u>Truck Weight (Ton)</u></b>
2020	B	M	5	651.6	89.2	1.55	20.00
2020	B	M	10	10,517.4	1,439.3	1.55	20.00
2020	B	M	15	40,893.0	5,596.1	1.55	20.00
2020	B	M	20	92,748.6	12,692.5	1.55	20.00
2020	B	M	25	278,076.9	38,054.3	1.55	20.00
2020	B	M	30	1,473,091.7	201,590.0	1.55	20.00
2020	B	M	35	2,252,665.1	308,273.3	1.55	20.00
2020	B	M	40	1,373,459.8	187,955.6	1.55	20.00
2020	B	M	45	569,656.1	77,956.4	1.55	20.00
2020	B	M	50	478,370.6	65,464.2	1.55	20.00
2020	B	M	55	807,054.8	0.0	1.55	20.00
2020	B	M	60	1,904,619.0	0.0	1.55	20.00
2020	B	M	65	3,208,371.9	0.0	1.55	20.00
2020	B	H	5	650.6	89.2	1.55	20.00
2020	B	H	10	10,495.7	1,439.3	1.55	20.00
2020	B	H	15	41,114.5	5,638.3	1.55	20.00
2020	B	H	20	92,443.8	12,677.4	1.55	20.00
2020	B	H	25	272,873.1	37,420.8	1.55	20.00
2020	B	H	30	1,475,658.0	202,366.1	1.55	20.00
2020	B	H	35	2,249,619.0	308,504.2	1.55	20.00
2020	B	H	40	1,382,226.9	189,553.3	1.55	20.00
2020	B	H	45	554,321.1	76,017.5	1.55	20.00
2020	B	H	50	469,979.9	64,451.3	1.55	20.00
2020	B	H	55	821,013.9	0.0	1.55	20.00
2020	B	H	60	1,913,518.7	0.0	1.55	20.00
2020	B	H	65	3,207,129.6	0.0	1.55	20.00
2020	NB	M	5	651.0	88.9	1.55	20.00
2020	NB	M	10	10,511.5	1,435.9	1.55	20.00
2020	NB	M	15	40,974.7	5,597.4	1.55	20.00
2020	NB	M	20	92,193.9	12,594.3	1.55	20.00
2020	NB	M	25	281,020.9	38,389.2	1.55	20.00
2020	NB	M	30	1,468,779.3	200,644.3	1.55	20.00
2020	NB	M	35	2,251,892.8	307,622.4	1.55	20.00
2020	NB	M	40	1,384,320.6	189,106.7	1.55	20.00
2020	NB	M	45	567,768.9	77,560.7	1.55	20.00
2020	NB	M	50	469,846.8	64,184.0	1.55	20.00
2020	NB	M	55	809,823.7	0.0	1.55	20.00
2020	NB	M	60	1,910,952.1	0.0	1.55	20.00
2020	NB	M	65	3,207,310.8	0.0	1.55	20.00
2020	NB	H	5	651.0	88.9	1.55	20.00
2020	NB	H	10	10,511.5	1,435.9	1.55	20.00
2020	NB	H	15	40,974.7	5,597.4	1.55	20.00
2020	NB	H	20	92,193.9	12,594.3	1.55	20.00
2020	NB	H	25	281,020.9	38,389.2	1.55	20.00
2020	NB	H	30	1,468,779.3	200,644.3	1.55	20.00
2020	NB	H	35	2,251,892.8	307,622.4	1.55	20.00
2020	NB	H	40	1,384,320.6	189,106.7	1.55	20.00
2020	NB	H	45	567,768.9	77,560.7	1.55	20.00
2020	NB	H	50	469,846.8	64,184.0	1.55	20.00
2020	NB	H	55	809,823.7	0.0	1.55	20.00
2020	NB	H	60	1,910,952.1	0.0	1.55	20.00
2020	NB	H	65	3,207,310.8	0.0	1.55	20.00

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Auto Run (g/mi)</u></b>	<b><u>PM10 Auto bw (g/mi)</u></b>	<b><u>PM10 Auto tw (g/mi)</u></b>	<b><u>PM10 Auto re (lb/mi)</u></b>	<b><u>pm10 auto (lb/day)</u></b>
0.01	0.04	0.01	0.00	0.30
0.01	0.04	0.01	0.00	4.79
0.01	0.04	0.01	0.00	18.40
0.00	0.04	0.01	0.00	41.40
0.00	0.04	0.01	0.00	123.52
0.00	0.04	0.01	0.00	652.37
0.00	0.04	0.01	0.00	995.69
0.00	0.04	0.01	0.00	606.36
0.00	0.04	0.01	0.00	251.33
0.00	0.04	0.01	0.00	211.01
0.00	0.04	0.01	0.00	356.04
0.00	0.04	0.01	0.00	840.71
0.00	0.04	0.01	0.00	1417.66
0.01	0.04	0.01	0.00	0.30
0.01	0.04	0.01	0.00	4.78
0.01	0.04	0.01	0.00	18.50
0.00	0.04	0.01	0.00	41.26
0.00	0.04	0.01	0.00	121.21
0.00	0.04	0.01	0.00	653.50
0.00	0.04	0.01	0.00	994.34
0.00	0.04	0.01	0.00	610.23
0.00	0.04	0.01	0.00	244.56
0.00	0.04	0.01	0.00	207.30
0.00	0.04	0.01	0.00	362.20
0.00	0.04	0.01	0.00	844.64
0.00	0.04	0.01	0.00	1417.11
0.01	0.04	0.01	0.00	0.30
0.01	0.04	0.01	0.00	4.79
0.01	0.04	0.01	0.00	18.43
0.00	0.04	0.01	0.00	41.15
0.00	0.04	0.01	0.00	124.83
0.00	0.04	0.01	0.00	650.46
0.00	0.04	0.01	0.00	995.35
0.00	0.04	0.01	0.00	611.15
0.00	0.04	0.01	0.00	250.50
0.00	0.04	0.01	0.00	207.25
0.00	0.04	0.01	0.00	357.26
0.00	0.04	0.01	0.00	843.51
0.00	0.04	0.01	0.00	1417.19
0.01	0.04	0.01	0.00	0.30
0.01	0.04	0.01	0.00	4.79
0.01	0.04	0.01	0.00	18.43
0.00	0.04	0.01	0.00	41.15
0.00	0.04	0.01	0.00	124.83
0.00	0.04	0.01	0.00	650.46
0.00	0.04	0.01	0.00	995.35
0.00	0.04	0.01	0.00	611.15
0.00	0.04	0.01	0.00	250.50
0.00	0.04	0.01	0.00	207.25
0.00	0.04	0.01	0.00	357.26
0.00	0.04	0.01	0.00	843.51
0.00	0.04	0.01	0.00	1417.19

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Run truck (g/mi)</u></b>	<b><u>PM10 truck bw (g/mi)</u></b>	<b><u>PM10 truck tw (g/mi)</u></b>	<b><u>PM10 truck re (lb/mi)</u></b>	<b><u>pm10 truck (lb/day)</u></b>	<b><u>PM10 (lb/day)</u></b>
0.05	0.08	0.02	0.00	0.44	0.74
0.04	0.08	0.02	0.00	7.04	11.83
0.03	0.08	0.02	0.00	27.27	45.67
0.03	0.08	0.02	0.00	61.71	103.11
0.03	0.08	0.02	0.00	184.77	308.29
0.02	0.08	0.02	0.00	977.98	1630.34
0.02	0.08	0.02	0.00	1494.79	2490.48
0.02	0.08	0.02	0.00	911.20	1517.56
0.02	0.08	0.02	0.00	377.96	629.29
0.02	0.08	0.02	0.00	317.50	528.51
0.02	0.08	0.02	0.00	0.00	356.04
0.03	0.08	0.02	0.00	0.00	840.71
0.03	0.08	0.02	0.00	0.00	1417.66
0.05	0.08	0.02	0.00	0.44	0.74
0.04	0.08	0.02	0.00	7.04	11.82
0.03	0.08	0.02	0.00	27.48	45.97
0.03	0.08	0.02	0.00	61.64	102.90
0.03	0.08	0.02	0.00	181.69	302.90
0.02	0.08	0.02	0.00	981.74	1635.24
0.02	0.08	0.02	0.00	1495.91	2490.25
0.02	0.08	0.02	0.00	918.95	1529.18
0.02	0.08	0.02	0.00	368.56	613.12
0.02	0.08	0.02	0.00	312.59	519.89
0.02	0.08	0.02	0.00	0.00	362.20
0.03	0.08	0.02	0.00	0.00	844.64
0.03	0.08	0.02	0.00	0.00	1417.11
0.05	0.08	0.02	0.00	0.44	0.74
0.04	0.08	0.02	0.00	7.02	11.81
0.03	0.08	0.02	0.00	27.28	45.71
0.03	0.08	0.02	0.00	61.24	102.38
0.03	0.08	0.02	0.00	186.40	311.22
0.02	0.08	0.02	0.00	973.39	1623.84
0.02	0.08	0.02	0.00	1491.63	2486.98
0.02	0.08	0.02	0.00	916.78	1527.94
0.02	0.08	0.02	0.00	376.04	626.54
0.02	0.08	0.02	0.00	311.29	518.54
0.02	0.08	0.02	0.00	0.00	357.26
0.03	0.08	0.02	0.00	0.00	843.51
0.03	0.08	0.02	0.00	0.00	1417.19
0.05	0.08	0.02	0.00	0.44	0.74
0.04	0.08	0.02	0.00	7.02	11.81
0.03	0.08	0.02	0.00	27.28	45.71
0.03	0.08	0.02	0.00	61.24	102.38
0.03	0.08	0.02	0.00	186.40	311.22
0.02	0.08	0.02	0.00	973.39	1623.84
0.02	0.08	0.02	0.00	1491.63	2486.98
0.02	0.08	0.02	0.00	916.78	1527.94
0.02	0.08	0.02	0.00	376.04	626.54
0.02	0.08	0.02	0.00	311.29	518.54
0.02	0.08	0.02	0.00	0.00	357.26
0.03	0.08	0.02	0.00	0.00	843.51
0.03	0.08	0.02	0.00	0.00	1417.19

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Auto Run (g/mi)</u></b>	<b><u>PM2.5 Auto bw (g/mi)</u></b>	<b><u>PM2.5 Auto tw (g/mi)</u></b>	<b><u>PM2.5 Auto re (lb/mi)</u></b>	<b><u>pm2.5 auto (lb/day)</u></b>
0.01	0.02	0.00	0.00	0.08
0.01	0.02	0.00	0.00	1.13
0.01	0.02	0.00	0.00	4.17
0.00	0.02	0.00	0.00	9.16
0.00	0.02	0.00	0.00	26.91
0.00	0.02	0.00	0.00	140.76
0.00	0.02	0.00	0.00	213.49
0.00	0.02	0.00	0.00	129.50
0.00	0.02	0.00	0.00	53.56
0.00	0.02	0.00	0.00	44.93
0.00	0.02	0.00	0.00	75.86
0.00	0.02	0.00	0.00	179.46
0.00	0.02	0.00	0.00	303.65
0.01	0.02	0.00	0.00	0.08
0.01	0.02	0.00	0.00	1.13
0.01	0.02	0.00	0.00	4.19
0.00	0.02	0.00	0.00	9.13
0.00	0.02	0.00	0.00	26.41
0.00	0.02	0.00	0.00	141.00
0.00	0.02	0.00	0.00	213.20
0.00	0.02	0.00	0.00	130.33
0.00	0.02	0.00	0.00	52.12
0.00	0.02	0.00	0.00	44.14
0.00	0.02	0.00	0.00	77.17
0.00	0.02	0.00	0.00	180.29
0.00	0.02	0.00	0.00	303.53
0.01	0.02	0.00	0.00	0.08
0.01	0.02	0.00	0.00	1.13
0.01	0.02	0.00	0.00	4.18
0.00	0.02	0.00	0.00	9.10
0.00	0.02	0.00	0.00	27.20
0.00	0.02	0.00	0.00	140.35
0.00	0.02	0.00	0.00	213.41
0.00	0.02	0.00	0.00	130.52
0.00	0.02	0.00	0.00	53.38
0.00	0.02	0.00	0.00	44.13
0.00	0.02	0.00	0.00	76.12
0.00	0.02	0.00	0.00	180.05
0.00	0.02	0.00	0.00	303.55
0.01	0.02	0.00	0.00	0.08
0.01	0.02	0.00	0.00	1.13
0.01	0.02	0.00	0.00	4.18
0.00	0.02	0.00	0.00	9.10
0.00	0.02	0.00	0.00	27.20
0.00	0.02	0.00	0.00	140.35
0.00	0.02	0.00	0.00	213.41
0.00	0.02	0.00	0.00	130.52
0.00	0.02	0.00	0.00	53.38
0.00	0.02	0.00	0.00	44.13
0.00	0.02	0.00	0.00	76.12
0.00	0.02	0.00	0.00	180.05
0.00	0.02	0.00	0.00	303.55

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Run truck (g/mi)</u></b>	<b><u>PM2.5 truck bw (g/mi)</u></b>	<b><u>PM2.5 truck tw (g/mi)</u></b>	<b><u>PM2.5 truck re (lb/mi)</u></b>	<b><u>pm2.5 truck (lb/day)</u></b>	<b><u>PM2.5 (lb/day)</u></b>
0.05	0.04	0.01	0.00	0.08	0.15
0.04	0.04	0.01	0.00	1.24	2.37
0.03	0.04	0.01	0.00	4.74	8.91
0.03	0.04	0.01	0.00	10.62	19.78
0.02	0.04	0.01	0.00	31.61	58.52
0.02	0.04	0.01	0.00	166.65	307.41
0.02	0.04	0.01	0.00	254.14	467.62
0.02	0.04	0.01	0.00	154.78	284.28
0.02	0.04	0.01	0.00	64.23	117.79
0.02	0.04	0.01	0.00	54.04	98.97
0.02	0.04	0.01	0.00	0.00	75.86
0.02	0.04	0.01	0.00	0.00	179.46
0.02	0.04	0.01	0.00	0.00	303.65
0.05	0.04	0.01	0.00	0.08	0.15
0.04	0.04	0.01	0.00	1.24	2.37
0.03	0.04	0.01	0.00	4.78	8.97
0.03	0.04	0.01	0.00	10.61	19.74
0.02	0.04	0.01	0.00	31.08	57.49
0.02	0.04	0.01	0.00	167.29	308.30
0.02	0.04	0.01	0.00	254.33	467.52
0.02	0.04	0.01	0.00	156.10	286.42
0.02	0.04	0.01	0.00	62.63	114.75
0.02	0.04	0.01	0.00	53.20	97.35
0.02	0.04	0.01	0.00	0.00	77.17
0.02	0.04	0.01	0.00	0.00	180.29
0.02	0.04	0.01	0.00	0.00	303.53
0.05	0.04	0.01	0.00	0.08	0.15
0.04	0.04	0.01	0.00	1.24	2.37
0.03	0.04	0.01	0.00	4.74	8.92
0.03	0.04	0.01	0.00	10.54	19.65
0.02	0.04	0.01	0.00	31.89	59.09
0.02	0.04	0.01	0.00	165.87	306.22
0.02	0.04	0.01	0.00	253.60	467.01
0.02	0.04	0.01	0.00	155.73	286.25
0.02	0.04	0.01	0.00	63.90	117.28
0.02	0.04	0.01	0.00	52.98	97.11
0.02	0.04	0.01	0.00	0.00	76.12
0.02	0.04	0.01	0.00	0.00	180.05
0.02	0.04	0.01	0.00	0.00	303.55
0.05	0.04	0.01	0.00	0.08	0.15
0.04	0.04	0.01	0.00	1.24	2.37
0.03	0.04	0.01	0.00	4.74	8.92
0.03	0.04	0.01	0.00	10.54	19.65
0.02	0.04	0.01	0.00	31.89	59.09
0.02	0.04	0.01	0.00	165.87	306.22
0.02	0.04	0.01	0.00	253.60	467.01
0.02	0.04	0.01	0.00	155.73	286.25
0.02	0.04	0.01	0.00	63.90	117.28
0.02	0.04	0.01	0.00	52.98	97.11
0.02	0.04	0.01	0.00	0.00	76.12
0.02	0.04	0.01	0.00	0.00	180.05
0.02	0.04	0.01	0.00	0.00	303.55

**Mobile Source Emissions Calculation Sheets**

<u>CO-Auto (g/mi)</u>	<u>CO-Truck (g/mi)</u>	<u>CO (lb/day)</u>	<u>NOX-Auto (g/mi)</u>	<u>NOX-Truck (g/mi)</u>	<u>NOX (lb/day)</u>	<u>ROG-Auto</u>	<u>ROG-Truck</u>	<u>ROG (lb/day)</u>
1.90	3.80	3.48	0.19	11.82	2.60	0.17	0.84	0.41
1.65	3.05	47.89	0.16	9.60	34.22	0.11	0.65	4.69
1.44	2.18	157.01	0.14	6.74	95.46	0.08	0.43	12.15
1.28	1.62	307.74	0.12	4.89	161.02	0.05	0.29	19.15
1.16	1.26	817.00	0.11	3.81	386.11	0.04	0.21	42.92
1.06	1.01	3889.38	0.10	3.25	1771.01	0.03	0.16	177.43
0.98	0.83	5407.07	0.10	2.90	2443.68	0.03	0.13	219.40
0.91	0.69	3030.88	0.09	2.66	1381.89	0.02	0.10	112.46
0.85	0.60	1169.20	0.09	2.50	542.54	0.02	0.08	40.95
0.80	0.53	924.96	0.09	2.38	438.38	0.02	0.06	31.69
0.77	0.50	1371.10	0.09	2.30	161.46	0.02	0.05	38.62
0.75	0.50	3153.05	0.09	2.28	391.96	0.02	0.05	97.92
0.75	0.54	5291.46	0.10	2.30	690.43	0.03	0.06	186.42
1.90	3.80	3.47	0.19	11.82	2.60	0.17	0.84	0.41
1.65	3.05	47.81	0.16	9.60	34.21	0.11	0.65	4.69
1.44	2.18	157.92	0.14	6.74	96.16	0.08	0.43	12.23
1.28	1.62	306.83	0.12	4.89	160.77	0.05	0.29	19.11
1.16	1.26	801.92	0.11	3.81	379.55	0.04	0.21	42.16
1.06	1.01	3897.10	0.10	3.25	1777.14	0.03	0.16	177.89
0.98	0.83	5400.93	0.10	2.90	2444.51	0.03	0.13	219.28
0.91	0.69	3050.83	0.09	2.66	1393.05	0.02	0.10	113.26
0.85	0.60	1137.94	0.09	2.50	528.82	0.02	0.08	39.88
0.80	0.53	908.89	0.09	2.38	431.40	0.02	0.06	31.16
0.77	0.50	1394.81	0.09	2.30	164.25	0.02	0.05	39.29
0.75	0.50	3167.79	0.09	2.28	393.79	0.02	0.05	98.38
0.75	0.54	5289.41	0.10	2.30	690.17	0.03	0.06	186.35
1.90	3.80	3.47	0.19	11.82	2.59	0.17	0.84	0.41
1.65	3.05	47.85	0.16	9.60	34.14	0.11	0.65	4.68
1.44	2.18	157.28	0.14	6.74	95.51	0.08	0.43	12.17
1.28	1.62	305.82	0.12	4.89	159.81	0.05	0.29	19.02
1.16	1.26	825.46	0.11	3.81	389.63	0.04	0.21	43.35
1.06	1.01	3877.20	0.10	3.25	1763.28	0.03	0.16	176.78
0.98	0.83	5404.22	0.10	2.90	2439.36	0.03	0.13	219.17
0.91	0.69	3054.34	0.09	2.66	1390.85	0.02	0.10	113.27
0.85	0.60	1165.14	0.09	2.50	539.99	0.02	0.08	40.79
0.80	0.53	908.34	0.09	2.38	429.97	0.02	0.06	31.11
0.77	0.50	1375.80	0.09	2.30	162.01	0.02	0.05	38.75
0.75	0.50	3163.54	0.09	2.28	393.27	0.02	0.05	98.25
0.75	0.54	5289.71	0.10	2.30	690.21	0.03	0.06	186.36
1.90	3.80	3.47	0.19	11.82	2.59	0.17	0.84	0.41
1.65	3.05	47.85	0.16	9.60	34.14	0.11	0.65	4.68
1.44	2.18	157.28	0.14	6.74	95.51	0.08	0.43	12.17
1.28	1.62	305.82	0.12	4.89	159.81	0.05	0.29	19.02
1.16	1.26	825.46	0.11	3.81	389.63	0.04	0.21	43.35
1.06	1.01	3877.20	0.10	3.25	1763.28	0.03	0.16	176.78
0.98	0.83	5404.22	0.10	2.90	2439.36	0.03	0.13	219.17
0.91	0.69	3054.34	0.09	2.66	1390.85	0.02	0.10	113.27
0.85	0.60	1165.14	0.09	2.50	539.99	0.02	0.08	40.79
0.80	0.53	908.34	0.09	2.38	429.97	0.02	0.06	31.11
0.77	0.50	1375.80	0.09	2.30	162.01	0.02	0.05	38.75
0.75	0.50	3163.54	0.09	2.28	393.27	0.02	0.05	98.25
0.75	0.54	5289.71	0.10	2.30	690.21	0.03	0.06	186.36



**Mobile Source Emissions Calculation Sheets**

<u>SOX-Auto</u>	<u>SOX-TRUCK</u>	<u>SOX (lb/day)</u>	<u>CH4 Auto</u>	<u>CH4 Truck</u>	<u>CH4 (lb/day)</u>	<u>CO2 Auto</u>	<u>CO2 Truck</u>	<u>CO2 (lb/day)</u>
0.01	0.02	0.02	0.07	0.17	0.13	1052.06	2521.67	2006.91
0.01	0.02	0.25	0.04	0.13	1.46	782.98	2250.85	25297.10
0.01	0.02	0.76	0.03	0.09	3.68	602.83	1829.48	76917.95
0.00	0.01	1.40	0.02	0.06	5.63	481.48	1584.52	142789.02
0.00	0.01	3.60	0.01	0.05	12.55	399.80	1450.99	366833.90
0.00	0.01	16.88	0.01	0.03	51.86	344.62	1357.73	1722595.57
0.00	0.01	23.60	0.01	0.03	64.23	308.17	1295.37	2410829.73
0.00	0.01	13.50	0.01	0.02	33.05	285.86	1241.52	1380028.68
0.00	0.01	5.39	0.01	0.02	12.11	275.03	1195.90	550931.49
0.00	0.01	4.48	0.01	0.01	9.45	274.48	1166.22	457791.56
0.00	0.01	5.05	0.01	0.01	13.02	284.28	1145.39	505800.10
0.00	0.01	12.81	0.01	0.01	32.97	305.51	1135.02	1282827.33
0.00	0.01	24.07	0.01	0.01	62.75	340.67	1137.15	2409653.77
0.01	0.02	0.02	0.07	0.17	0.13	1052.06	2521.67	2005.12
0.01	0.02	0.25	0.04	0.13	1.46	782.98	2250.85	25260.03
0.01	0.02	0.76	0.03	0.09	3.70	602.83	1829.48	77382.35
0.00	0.01	1.40	0.02	0.06	5.62	481.48	1584.52	142412.78
0.00	0.01	3.53	0.01	0.05	12.32	399.80	1450.99	360220.43
0.00	0.01	16.92	0.01	0.03	51.98	344.62	1357.73	1726868.35
0.00	0.01	23.59	0.01	0.03	64.18	308.17	1295.37	2409419.60
0.00	0.01	13.60	0.01	0.02	33.28	285.86	1241.52	1389927.05
0.00	0.01	5.25	0.01	0.02	11.79	275.03	1195.90	536521.44
0.00	0.01	4.41	0.01	0.01	9.29	274.48	1166.22	450109.74
0.00	0.01	5.14	0.01	0.01	13.25	284.28	1145.39	514548.58
0.00	0.01	12.87	0.01	0.01	33.12	305.51	1135.02	1288821.53
0.00	0.01	24.06	0.01	0.01	62.72	340.67	1137.15	2408720.38
0.01	0.02	0.02	0.07	0.17	0.13	1052.06	2521.67	2004.29
0.01	0.02	0.25	0.04	0.13	1.46	782.98	2250.85	25270.38
0.01	0.02	0.76	0.03	0.09	3.69	602.83	1829.48	77031.55
0.00	0.01	1.39	0.02	0.06	5.60	481.48	1584.52	141857.07
0.00	0.01	3.63	0.01	0.05	12.67	399.80	1450.99	370499.96
0.00	0.01	16.82	0.01	0.03	51.68	344.62	1357.73	1716488.44
0.00	0.01	23.58	0.01	0.03	64.18	308.17	1295.37	2408446.36
0.00	0.01	13.60	0.01	0.02	33.30	285.86	1241.52	1390024.14
0.00	0.01	5.37	0.01	0.02	12.06	275.03	1195.90	548743.99
0.00	0.01	4.40	0.01	0.01	9.28	274.48	1166.22	449341.98
0.00	0.01	5.07	0.01	0.01	13.06	284.28	1145.39	507535.43
0.00	0.01	12.86	0.01	0.01	33.08	305.51	1135.02	1287092.85
0.00	0.01	24.06	0.01	0.01	62.72	340.67	1137.15	2408856.45
0.01	0.02	0.02	0.07	0.17	0.13	1052.06	2521.67	2004.29
0.01	0.02	0.25	0.04	0.13	1.46	782.98	2250.85	25270.38
0.01	0.02	0.76	0.03	0.09	3.69	602.83	1829.48	77031.55
0.00	0.01	1.39	0.02	0.06	5.60	481.48	1584.52	141857.07
0.00	0.01	3.63	0.01	0.05	12.67	399.80	1450.99	370499.96
0.00	0.01	16.82	0.01	0.03	51.68	344.62	1357.73	1716488.44
0.00	0.01	23.58	0.01	0.03	64.18	308.17	1295.37	2408446.36
0.00	0.01	13.60	0.01	0.02	33.30	285.86	1241.52	1390024.14
0.00	0.01	5.37	0.01	0.02	12.06	275.03	1195.90	548743.99
0.00	0.01	4.40	0.01	0.01	9.28	274.48	1166.22	449341.98
0.00	0.01	5.07	0.01	0.01	13.06	284.28	1145.39	507535.43
0.00	0.01	12.86	0.01	0.01	33.08	305.51	1135.02	1287092.85
0.00	0.01	24.06	0.01	0.01	62.72	340.67	1137.15	2408856.45

**Mobile Source Emissions Calculation Sheets**

<b><u>YEAR</u></b>	<b><u>Alternative</u></b>	<b><u>Alignment</u></b>	<b><u>Speed</u></b>	<b><u>Auto VMT</u></b>	<b><u>Truck VMT</u></b>	<b><u>Auto Weight (ton)</u></b>	<b><u>Truck Weight (Ton)</u></b>
2040	A	M	5	948.0	151.2	1.55	20.00
2040	A	M	10	10,520.3	1,677.8	1.55	20.00
2040	A	M	15	50,936.7	8,123.6	1.55	20.00
2040	A	M	20	104,239.3	16,624.5	1.55	20.00
2040	A	M	25	224,451.9	35,796.4	1.55	20.00
2040	A	M	30	1,222,254.4	194,929.5	1.55	20.00
2040	A	M	35	2,308,382.6	368,149.1	1.55	20.00
2040	A	M	40	1,744,884.3	278,280.4	1.55	20.00
2040	A	M	45	789,637.5	125,934.2	1.55	20.00
2040	A	M	50	666,457.4	106,289.0	1.55	20.00
2040	A	M	55	1,363,850.7	0.0	1.55	20.00
2040	A	M	60	2,768,278.1	0.0	1.55	20.00
2040	A	M	65	3,330,455.3	0.0	1.55	20.00
2040	A	H	5	1,221.6	194.4	1.55	20.00
2040	A	H	10	10,242.0	1,630.3	1.55	20.00
2040	A	H	15	51,279.1	8,162.5	1.55	20.00
2040	A	H	20	103,817.3	16,525.5	1.55	20.00
2040	A	H	25	223,069.1	35,507.8	1.55	20.00
2040	A	H	30	1,225,706.4	195,105.9	1.55	20.00
2040	A	H	35	2,307,440.6	367,294.6	1.55	20.00
2040	A	H	40	1,746,484.0	278,002.4	1.55	20.00
2040	A	H	45	788,481.9	125,509.3	1.55	20.00
2040	A	H	50	677,913.0	107,909.1	1.55	20.00
2040	A	H	55	1,393,665.1	0.0	1.55	20.00
2040	A	H	60	2,725,915.5	0.0	1.55	20.00
2040	A	H	65	3,330,735.6	0.0	1.55	20.00
2040	B	M	5	948.3	151.8	1.55	20.00
2040	B	M	10	10,536.1	1,686.1	1.55	20.00
2040	B	M	15	51,006.6	8,162.7	1.55	20.00
2040	B	M	20	104,026.4	16,647.5	1.55	20.00
2040	B	M	25	236,321.3	37,818.9	1.55	20.00
2040	B	M	30	1,220,915.5	195,385.2	1.55	20.00
2040	B	M	35	2,312,458.6	370,066.7	1.55	20.00
2040	B	M	40	1,712,912.5	274,120.3	1.55	20.00
2040	B	M	45	802,939.1	128,495.7	1.55	20.00
2040	B	M	50	674,742.7	107,980.2	1.55	20.00
2040	B	M	55	1,401,419.8	0.0	1.55	20.00
2040	B	M	60	2,715,166.3	0.0	1.55	20.00
2040	B	M	65	3,334,396.1	0.0	1.55	20.00
2040	B	H	5	946.7	151.3	1.55	20.00
2040	B	H	10	10,518.7	1,681.2	1.55	20.00
2040	B	H	15	51,610.2	8,248.6	1.55	20.00
2040	B	H	20	104,978.5	16,778.1	1.55	20.00
2040	B	H	25	220,063.5	35,171.5	1.55	20.00
2040	B	H	30	1,229,845.8	196,559.1	1.55	20.00
2040	B	H	35	2,305,238.9	368,433.0	1.55	20.00
2040	B	H	40	1,746,310.2	279,102.7	1.55	20.00
2040	B	H	45	757,728.3	121,103.3	1.55	20.00
2040	B	H	50	691,088.6	110,452.7	1.55	20.00
2040	B	H	55	1,396,316.9	0.0	1.55	20.00
2040	B	H	60	2,739,029.6	0.0	1.55	20.00
2040	B	H	65	3,330,922.8	0.0	1.55	20.00

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Auto Run (g/mi)</u></b>	<b><u>PM10 Auto bw (g/mi)</u></b>	<b><u>PM10 Auto tw (g/mi)</u></b>	<b><u>PM10 Auto re (lb/mi)</u></b>	<b><u>pm10 auto (lb/day)</u></b>
0.00	0.04	0.01	0.00	0.42
0.00	0.04	0.01	0.00	4.67
0.00	0.04	0.01	0.00	22.50
0.00	0.04	0.01	0.00	45.91
0.00	0.04	0.01	0.00	98.67
0.00	0.04	0.01	0.00	536.70
0.00	0.04	0.01	0.00	1012.88
0.00	0.04	0.01	0.00	765.27
0.00	0.04	0.01	0.00	346.23
0.00	0.04	0.01	0.00	292.19
0.00	0.04	0.01	0.00	597.98
0.00	0.04	0.01	0.00	1213.99
0.00	0.04	0.01	0.00	1461.08
0.00	0.04	0.01	0.00	0.55
0.00	0.04	0.01	0.00	4.55
0.00	0.04	0.01	0.00	22.66
0.00	0.04	0.01	0.00	45.73
0.00	0.04	0.01	0.00	98.07
0.00	0.04	0.01	0.00	538.22
0.00	0.04	0.01	0.00	1012.46
0.00	0.04	0.01	0.00	765.98
0.00	0.04	0.01	0.00	345.73
0.00	0.04	0.01	0.00	297.22
0.00	0.04	0.01	0.00	611.05
0.00	0.04	0.01	0.00	1195.41
0.00	0.04	0.01	0.00	1461.20
0.00	0.04	0.01	0.00	0.42
0.00	0.04	0.01	0.00	4.68
0.00	0.04	0.01	0.00	22.53
0.00	0.04	0.01	0.00	45.82
0.00	0.04	0.01	0.00	103.89
0.00	0.04	0.01	0.00	536.11
0.00	0.04	0.01	0.00	1014.66
0.00	0.04	0.01	0.00	751.25
0.00	0.04	0.01	0.00	352.06
0.00	0.04	0.01	0.00	295.83
0.00	0.04	0.01	0.00	614.45
0.00	0.04	0.01	0.00	1190.70
0.00	0.04	0.01	0.00	1462.81
0.00	0.04	0.01	0.00	0.42
0.00	0.04	0.01	0.00	4.67
0.00	0.04	0.01	0.00	22.80
0.00	0.04	0.01	0.00	46.24
0.00	0.04	0.01	0.00	96.74
0.00	0.04	0.01	0.00	540.03
0.00	0.04	0.01	0.00	1011.50
0.00	0.04	0.01	0.00	765.90
0.00	0.04	0.01	0.00	332.24
0.00	0.04	0.01	0.00	302.99
0.00	0.04	0.01	0.00	612.21
0.00	0.04	0.01	0.00	1201.16
0.00	0.04	0.01	0.00	1461.28

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Run truck (g/mi)</u></b>	<b><u>PM10 truck bw (g/mi)</u></b>	<b><u>PM10 truck tw (g/mi)</u></b>	<b><u>PM10 truck re (lb/mi)</u></b>	<b><u>pm10 truck (lb/day)</u></b>	<b><u>PM10 (lb/day)</u></b>
0.01	0.08	0.03	0.00	0.73	1.15
0.01	0.08	0.03	0.00	8.09	12.76
0.01	0.08	0.03	0.00	39.16	61.66
0.01	0.08	0.03	0.00	80.10	126.01
0.01	0.08	0.03	0.00	172.42	271.09
0.01	0.08	0.03	0.00	938.68	1475.38
0.00	0.08	0.03	0.00	1772.47	2785.35
0.00	0.08	0.03	0.00	1339.58	2104.86
0.00	0.08	0.03	0.00	606.14	952.37
0.00	0.08	0.03	0.00	511.53	803.72
0.00	0.08	0.03	0.00	0.00	597.98
0.00	0.08	0.03	0.00	0.00	1213.99
0.00	0.08	0.03	0.00	0.00	1461.08
0.01	0.08	0.03	0.00	0.94	1.49
0.01	0.08	0.03	0.00	7.86	12.41
0.01	0.08	0.03	0.00	39.35	62.00
0.01	0.08	0.03	0.00	79.62	125.35
0.01	0.08	0.03	0.00	171.03	269.09
0.01	0.08	0.03	0.00	939.53	1477.74
0.00	0.08	0.03	0.00	1768.36	2780.82
0.00	0.08	0.03	0.00	1338.25	2104.22
0.00	0.08	0.03	0.00	604.10	949.82
0.00	0.08	0.03	0.00	519.32	816.54
0.00	0.08	0.03	0.00	0.00	611.05
0.00	0.08	0.03	0.00	0.00	1195.41
0.00	0.08	0.03	0.00	0.00	1461.20
0.01	0.08	0.03	0.00	0.73	1.16
0.01	0.08	0.03	0.00	8.13	12.81
0.01	0.08	0.03	0.00	39.35	61.88
0.01	0.08	0.03	0.00	80.21	126.03
0.01	0.08	0.03	0.00	182.16	286.05
0.01	0.08	0.03	0.00	940.87	1476.98
0.00	0.08	0.03	0.00	1781.70	2796.37
0.00	0.08	0.03	0.00	1319.56	2070.81
0.00	0.08	0.03	0.00	618.47	970.53
0.00	0.08	0.03	0.00	519.67	815.49
0.00	0.08	0.03	0.00	0.00	614.45
0.00	0.08	0.03	0.00	0.00	1190.70
0.00	0.08	0.03	0.00	0.00	1462.81
0.01	0.08	0.03	0.00	0.73	1.15
0.01	0.08	0.03	0.00	8.11	12.78
0.01	0.08	0.03	0.00	39.76	62.56
0.01	0.08	0.03	0.00	80.84	127.08
0.01	0.08	0.03	0.00	169.41	266.15
0.01	0.08	0.03	0.00	946.52	1486.56
0.00	0.08	0.03	0.00	1773.84	2785.33
0.00	0.08	0.03	0.00	1343.54	2109.44
0.00	0.08	0.03	0.00	582.89	915.13
0.00	0.08	0.03	0.00	531.57	834.56
0.00	0.08	0.03	0.00	0.00	612.21
0.00	0.08	0.03	0.00	0.00	1201.16
0.00	0.08	0.03	0.00	0.00	1461.28

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Auto Run (g/mi)</u></b>	<b><u>PM2.5 Auto bw (g/mi)</u></b>	<b><u>PM2.5 Auto tw (g/mi)</u></b>	<b><u>PM2.5 Auto re (lb/mi)</u></b>	<b><u>pm2.5 auto (lb/day)</u></b>
0.00	0.02	0.00	0.00	0.10
0.00	0.02	0.00	0.00	1.02
0.00	0.02	0.00	0.00	4.83
0.00	0.02	0.00	0.00	9.76
0.00	0.02	0.00	0.00	20.84
0.00	0.02	0.00	0.00	112.90
0.00	0.02	0.00	0.00	212.54
0.00	0.02	0.00	0.00	160.34
0.00	0.02	0.00	0.00	72.48
0.00	0.02	0.00	0.00	61.15
0.00	0.02	0.00	0.00	125.16
0.00	0.02	0.00	0.00	254.26
0.00	0.02	0.00	0.00	306.40
0.00	0.02	0.00	0.00	0.12
0.00	0.02	0.00	0.00	0.99
0.00	0.02	0.00	0.00	4.86
0.00	0.02	0.00	0.00	9.72
0.00	0.02	0.00	0.00	20.71
0.00	0.02	0.00	0.00	113.22
0.00	0.02	0.00	0.00	212.45
0.00	0.02	0.00	0.00	160.48
0.00	0.02	0.00	0.00	72.37
0.00	0.02	0.00	0.00	62.20
0.00	0.02	0.00	0.00	127.89
0.00	0.02	0.00	0.00	250.36
0.00	0.02	0.00	0.00	306.43
0.00	0.02	0.00	0.00	0.10
0.00	0.02	0.00	0.00	1.02
0.00	0.02	0.00	0.00	4.84
0.00	0.02	0.00	0.00	9.74
0.00	0.02	0.00	0.00	21.94
0.00	0.02	0.00	0.00	112.78
0.00	0.02	0.00	0.00	212.91
0.00	0.02	0.00	0.00	157.40
0.00	0.02	0.00	0.00	73.70
0.00	0.02	0.00	0.00	61.91
0.00	0.02	0.00	0.00	128.60
0.00	0.02	0.00	0.00	249.38
0.00	0.02	0.00	0.00	306.77
0.00	0.02	0.00	0.00	0.10
0.00	0.02	0.00	0.00	1.02
0.00	0.02	0.00	0.00	4.90
0.00	0.02	0.00	0.00	9.83
0.00	0.02	0.00	0.00	20.43
0.00	0.02	0.00	0.00	113.60
0.00	0.02	0.00	0.00	212.25
0.00	0.02	0.00	0.00	160.47
0.00	0.02	0.00	0.00	69.55
0.00	0.02	0.00	0.00	63.41
0.00	0.02	0.00	0.00	128.13
0.00	0.02	0.00	0.00	251.57
0.00	0.02	0.00	0.00	306.45

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Run truck (g/mi)</u></b>	<b><u>PM2.5 truck bw (g/mi)</u></b>	<b><u>PM2.5 truck tw (g/mi)</u></b>	<b><u>PM2.5 truck re (lb/mi)</u></b>	<b><u>pm2.5 truck (lb/day)</u></b>	<b><u>PM2.5 (lb/day)</u></b>
0.01	0.04	0.01	0.00	0.12	0.22
0.01	0.04	0.01	0.00	1.34	2.36
0.01	0.04	0.01	0.00	6.45	11.28
0.01	0.04	0.01	0.00	13.16	22.92
0.01	0.04	0.01	0.00	28.29	49.13
0.01	0.04	0.01	0.00	153.81	266.72
0.00	0.04	0.01	0.00	290.18	502.72
0.00	0.04	0.01	0.00	219.14	379.48
0.00	0.04	0.01	0.00	99.09	171.57
0.00	0.04	0.01	0.00	83.58	144.73
0.00	0.04	0.01	0.00	0.00	125.16
0.00	0.04	0.01	0.00	0.00	254.26
0.00	0.04	0.01	0.00	0.00	306.40
0.01	0.04	0.01	0.00	0.16	0.28
0.01	0.04	0.01	0.00	1.30	2.29
0.01	0.04	0.01	0.00	6.48	11.34
0.01	0.04	0.01	0.00	13.08	22.80
0.01	0.04	0.01	0.00	28.06	48.77
0.01	0.04	0.01	0.00	153.95	267.17
0.00	0.04	0.01	0.00	289.50	501.95
0.00	0.04	0.01	0.00	218.92	379.40
0.00	0.04	0.01	0.00	98.76	171.13
0.00	0.04	0.01	0.00	84.85	147.05
0.00	0.04	0.01	0.00	0.00	127.89
0.00	0.04	0.01	0.00	0.00	250.36
0.00	0.04	0.01	0.00	0.00	306.43
0.01	0.04	0.01	0.00	0.12	0.22
0.01	0.04	0.01	0.00	1.34	2.36
0.01	0.04	0.01	0.00	6.48	11.32
0.01	0.04	0.01	0.00	13.18	22.92
0.01	0.04	0.01	0.00	29.88	51.83
0.01	0.04	0.01	0.00	154.17	266.95
0.00	0.04	0.01	0.00	291.69	504.60
0.00	0.04	0.01	0.00	215.86	373.26
0.00	0.04	0.01	0.00	101.11	174.81
0.00	0.04	0.01	0.00	84.91	146.82
0.00	0.04	0.01	0.00	0.00	128.60
0.00	0.04	0.01	0.00	0.00	249.38
0.00	0.04	0.01	0.00	0.00	306.77
0.01	0.04	0.01	0.00	0.12	0.22
0.01	0.04	0.01	0.00	1.34	2.36
0.01	0.04	0.01	0.00	6.55	11.44
0.01	0.04	0.01	0.00	13.28	23.11
0.01	0.04	0.01	0.00	27.79	48.22
0.01	0.04	0.01	0.00	155.10	268.70
0.00	0.04	0.01	0.00	290.40	502.65
0.00	0.04	0.01	0.00	219.79	380.25
0.00	0.04	0.01	0.00	95.29	164.84
0.00	0.04	0.01	0.00	86.85	150.26
0.00	0.04	0.01	0.00	0.00	128.13
0.00	0.04	0.01	0.00	0.00	251.57
0.00	0.04	0.01	0.00	0.00	306.45

**Mobile Source Emissions Calculation Sheets**

<u>CO-Auto (g/mi)</u>	<u>CO-Truck (g/mi)</u>	<u>CO (lb/day)</u>	<u>NOX-Auto (g/mi)</u>	<u>NOX-Truck (g/mi)</u>	<u>NOX (lb/day)</u>	<u>ROG-Auto</u>	<u>ROG-Truck</u>	<u>ROG (lb/day)</u>
0.76	3.12	2.63	0.06	13.14	4.50	0.08	0.46	0.32
0.66	2.52	24.65	0.05	9.97	38.03	0.05	0.37	2.52
0.57	1.75	95.78	0.04	5.98	111.59	0.03	0.25	8.21
0.51	1.25	162.48	0.03	3.35	130.49	0.02	0.17	11.72
0.46	0.93	300.73	0.03	1.82	157.93	0.02	0.12	18.61
0.42	0.71	1434.98	0.03	1.13	558.63	0.01	0.09	77.43
0.39	0.54	2406.85	0.02	0.77	751.33	0.01	0.07	115.13
0.36	0.42	1636.30	0.02	0.56	432.87	0.01	0.05	70.89
0.34	0.32	674.35	0.02	0.42	157.47	0.01	0.04	27.20
0.32	0.25	525.05	0.02	0.33	111.60	0.01	0.03	20.41
0.30	0.20	907.88	0.02	0.27	68.18	0.01	0.02	28.84
0.29	0.18	1782.13	0.02	0.25	141.15	0.01	0.02	63.19
0.29	0.18	2114.85	0.02	0.25	176.08	0.01	0.02	86.38
0.76	3.12	3.38	0.06	13.14	5.79	0.08	0.46	0.41
0.66	2.52	23.98	0.05	9.97	36.96	0.05	0.37	2.45
0.57	1.75	96.37	0.04	5.98	112.13	0.03	0.25	8.26
0.51	1.25	161.73	0.03	3.35	129.73	0.02	0.17	11.67
0.46	0.93	298.74	0.03	1.82	156.68	0.02	0.12	18.48
0.42	0.71	1438.45	0.03	1.13	559.27	0.01	0.09	77.58
0.39	0.54	2405.03	0.02	0.77	749.82	0.01	0.07	114.98
0.36	0.42	1637.31	0.02	0.56	432.61	0.01	0.05	70.90
0.34	0.32	673.19	0.02	0.42	157.01	0.01	0.04	27.14
0.32	0.25	533.95	0.02	0.33	113.37	0.01	0.03	20.74
0.30	0.20	927.72	0.02	0.27	69.67	0.01	0.02	29.47
0.29	0.18	1754.85	0.02	0.25	138.99	0.01	0.02	62.22
0.29	0.18	2115.03	0.02	0.25	176.10	0.01	0.02	86.39
0.76	3.12	2.63	0.06	13.14	4.52	0.08	0.46	0.32
0.66	2.52	24.72	0.05	9.97	38.22	0.05	0.37	2.53
0.57	1.75	96.02	0.04	5.98	112.11	0.03	0.25	8.24
0.51	1.25	162.30	0.03	3.35	130.64	0.02	0.17	11.72
0.46	0.93	316.90	0.03	1.82	166.80	0.02	0.12	19.63
0.42	0.71	1434.45	0.03	1.13	559.69	0.01	0.09	77.48
0.39	0.54	2412.60	0.02	0.77	754.80	0.01	0.07	115.52
0.36	0.42	1607.18	0.02	0.56	426.09	0.01	0.05	69.69
0.34	0.32	686.02	0.02	0.42	160.53	0.01	0.04	27.69
0.32	0.25	531.78	0.02	0.33	113.26	0.01	0.03	20.68
0.30	0.20	932.88	0.02	0.27	70.06	0.01	0.02	29.64
0.29	0.18	1747.93	0.02	0.25	138.45	0.01	0.02	61.97
0.29	0.18	2117.35	0.02	0.25	176.29	0.01	0.02	86.48
0.76	3.12	2.63	0.06	13.14	4.51	0.08	0.46	0.32
0.66	2.52	24.67	0.05	9.97	38.10	0.05	0.37	2.52
0.57	1.75	97.12	0.04	5.98	113.30	0.03	0.25	8.33
0.51	1.25	163.73	0.03	3.35	131.68	0.02	0.17	11.82
0.46	0.93	295.01	0.03	1.82	155.14	0.02	0.12	18.27
0.42	0.71	1444.54	0.03	1.13	563.14	0.01	0.09	78.00
0.39	0.54	2404.50	0.02	0.77	751.64	0.01	0.07	115.09
0.36	0.42	1638.18	0.02	0.56	433.95	0.01	0.05	71.01
0.34	0.32	647.28	0.02	0.42	151.35	0.01	0.04	26.12
0.32	0.25	544.58	0.02	0.33	115.90	0.01	0.03	21.17
0.30	0.20	929.49	0.02	0.27	69.80	0.01	0.02	29.53
0.29	0.18	1763.30	0.02	0.25	139.66	0.01	0.02	62.52
0.29	0.18	2115.14	0.02	0.25	176.11	0.01	0.02	86.39

**Mobile Source Emissions Calculation Sheets**

<b><u>SOX-Auto</u></b>	<b><u>SOX-TRUCK</u></b>	<b><u>SOX (lb/day)</u></b>	<b><u>CH4 Auto</u></b>	<b><u>CH4 Truck</u></b>	<b><u>CH4 (lb/day)</u></b>	<b><u>CO2 Auto</u></b>	<b><u>CO2 Truck</u></b>	<b><u>CO2 (lb/day)</u></b>
0.01	0.02	0.02	0.03	0.15	0.11	584.28	2421.91	2028.47
0.00	0.02	0.18	0.02	0.12	0.87	435.50	2148.92	18049.38
0.00	0.02	0.67	0.01	0.09	2.82	335.37	1768.45	69332.92
0.00	0.01	1.14	0.01	0.06	3.97	267.88	1536.13	117860.78
0.00	0.01	2.14	0.01	0.05	6.26	222.58	1413.72	221707.70
0.00	0.01	10.51	0.00	0.03	25.89	191.98	1333.84	1090519.19
0.00	0.01	18.39	0.00	0.02	38.12	171.76	1276.03	1909777.77
0.00	0.01	13.13	0.00	0.02	23.14	159.37	1225.06	1364628.40
0.00	0.01	5.73	0.00	0.01	8.72	153.31	1183.92	595596.89
0.00	0.01	4.76	0.00	0.01	6.41	152.96	1151.40	494551.94
0.00	0.01	4.74	0.00	0.01	8.39	158.36	1123.32	476149.90
0.00	0.01	10.34	0.00	0.01	18.27	170.10	1108.26	1038135.00
0.00	0.01	13.86	0.00	0.01	24.87	189.56	1109.37	1391857.89
0.01	0.02	0.03	0.03	0.15	0.14	584.28	2421.91	2611.76
0.00	0.02	0.17	0.02	0.12	0.85	435.50	2148.92	17556.96
0.00	0.02	0.68	0.01	0.09	2.83	335.37	1768.45	69738.03
0.00	0.01	1.13	0.01	0.06	3.95	267.88	1536.13	117276.41
0.00	0.01	2.13	0.01	0.05	6.22	222.58	1413.72	220129.57
0.00	0.01	10.53	0.00	0.03	25.94	191.98	1333.84	1092499.04
0.00	0.01	18.37	0.00	0.02	38.06	171.76	1276.03	1907017.03
0.00	0.01	13.13	0.00	0.02	23.14	159.37	1225.06	1364439.71
0.00	0.01	5.72	0.00	0.01	8.70	153.31	1183.92	594097.12
0.00	0.01	4.84	0.00	0.01	6.52	152.96	1151.40	502527.45
0.00	0.01	4.84	0.00	0.01	8.57	158.36	1123.32	486558.75
0.00	0.01	10.18	0.00	0.01	17.99	170.10	1108.26	1022248.56
0.00	0.01	13.86	0.00	0.01	24.87	189.56	1109.37	1391975.02
0.01	0.02	0.02	0.03	0.15	0.11	584.28	2421.91	2031.88
0.00	0.02	0.18	0.02	0.12	0.88	435.50	2148.92	18103.77
0.00	0.02	0.67	0.01	0.09	2.82	335.37	1768.45	69537.08
0.00	0.01	1.14	0.01	0.06	3.97	267.88	1536.13	117813.21
0.00	0.01	2.26	0.01	0.05	6.61	222.58	1413.72	233835.76
0.00	0.01	10.52	0.00	0.03	25.92	191.98	1333.84	1091292.54
0.00	0.01	18.46	0.00	0.02	38.25	171.76	1276.03	1916715.64
0.00	0.01	12.92	0.00	0.02	22.75	159.37	1225.06	1342159.80
0.00	0.01	5.84	0.00	0.01	8.88	153.31	1183.92	606778.54
0.00	0.01	4.83	0.00	0.01	6.50	152.96	1151.40	501638.96
0.00	0.01	4.87	0.00	0.01	8.62	158.36	1123.32	489266.06
0.00	0.01	10.14	0.00	0.01	17.92	170.10	1108.26	1018217.46
0.00	0.01	13.88	0.00	0.01	24.90	189.56	1109.37	1393504.83
0.01	0.02	0.02	0.03	0.15	0.11	584.28	2421.91	2027.33
0.00	0.02	0.18	0.02	0.12	0.87	435.50	2148.92	18063.63
0.00	0.02	0.68	0.01	0.09	2.86	335.37	1768.45	70318.19
0.00	0.01	1.15	0.01	0.06	4.00	267.88	1536.13	118817.73
0.00	0.01	2.10	0.01	0.05	6.15	222.58	1413.72	217606.61
0.00	0.01	10.59	0.00	0.03	26.09	191.98	1333.84	1098524.34
0.00	0.01	18.39	0.00	0.02	38.11	171.76	1276.03	1909385.91
0.00	0.01	13.16	0.00	0.02	23.18	159.37	1225.06	1367350.13
0.00	0.01	5.51	0.00	0.01	8.38	153.31	1183.92	572202.55
0.00	0.01	4.94	0.00	0.01	6.65	152.96	1151.40	513427.37
0.00	0.01	4.85	0.00	0.01	8.59	158.36	1123.32	487484.52
0.00	0.01	10.23	0.00	0.01	18.08	170.10	1108.26	1027166.48
0.00	0.01	13.86	0.00	0.01	24.87	189.56	1109.37	1392053.25



**Mobile Source Emissions Calculation Sheets**

<b><u>YEAR</u></b>	<b><u>Alternative</u></b>	<b><u>Alignment</u></b>	<b><u>Speed</u></b>	<b><u>Auto VMT</u></b>	<b><u>Truck VMT</u></b>	<b><u>Auto Weight (ton)</u></b>	<b><u>Truck Weight (Ton)</u></b>
2040	NB	M	5	947.0	151.1	1.55	20.00
2040	NB	M	10	10,512.9	1,677.4	1.55	20.00
2040	NB	M	15	51,218.3	8,172.1	1.55	20.00
2040	NB	M	20	103,992.4	16,592.5	1.55	20.00
2040	NB	M	25	240,143.0	38,316.1	1.55	20.00
2040	NB	M	30	1,212,296.2	193,428.1	1.55	20.00
2040	NB	M	35	2,304,532.1	367,700.0	1.55	20.00
2040	NB	M	40	1,744,664.2	278,370.2	1.55	20.00
2040	NB	M	45	797,453.1	127,237.8	1.55	20.00
2040	NB	M	50	652,374.2	104,089.7	1.55	20.00
2040	NB	M	55	1,408,661.3	0.0	1.55	20.00
2040	NB	M	60	2,732,308.0	0.0	1.55	20.00
2040	NB	M	65	3,330,446.6	0.0	1.55	20.00
2040	NB	H	5	947.0	151.1	1.55	20.00
2040	NB	H	10	10,512.9	1,677.4	1.55	20.00
2040	NB	H	15	51,218.3	8,172.1	1.55	20.00
2040	NB	H	20	103,992.4	16,592.5	1.55	20.00
2040	NB	H	25	240,143.0	38,316.1	1.55	20.00
2040	NB	H	30	1,212,296.2	193,428.1	1.55	20.00
2040	NB	H	35	2,304,532.1	367,700.0	1.55	20.00
2040	NB	H	40	1,744,664.2	278,370.2	1.55	20.00
2040	NB	H	45	797,453.1	127,237.8	1.55	20.00
2040	NB	H	50	652,374.2	104,089.7	1.55	20.00
2040	NB	H	55	1,408,661.3	0.0	1.55	20.00
2040	NB	H	60	2,732,308.0	0.0	1.55	20.00
2040	NB	H	65	3,330,446.6	0.0	1.55	20.00

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Auto Run (g/mi)</u></b>	<b><u>PM10 Auto bw (g/mi)</u></b>	<b><u>PM10 Auto tw (g/mi)</u></b>	<b><u>PM10 Auto re (lb/mi)</u></b>	<b><u>pm10 auto (lb/day)</u></b>
0.00	0.04	0.01	0.00	0.42
0.00	0.04	0.01	0.00	4.67
0.00	0.04	0.01	0.00	22.63
0.00	0.04	0.01	0.00	45.80
0.00	0.04	0.01	0.00	105.57
0.00	0.04	0.01	0.00	532.33
0.00	0.04	0.01	0.00	1011.19
0.00	0.04	0.01	0.00	765.18
0.00	0.04	0.01	0.00	349.66
0.00	0.04	0.01	0.00	286.02
0.00	0.04	0.01	0.00	617.62
0.00	0.04	0.01	0.00	1198.21
0.00	0.04	0.01	0.00	1461.08
0.00	0.04	0.01	0.00	0.42
0.00	0.04	0.01	0.00	4.67
0.00	0.04	0.01	0.00	22.63
0.00	0.04	0.01	0.00	45.80
0.00	0.04	0.01	0.00	105.57
0.00	0.04	0.01	0.00	532.33
0.00	0.04	0.01	0.00	1011.19
0.00	0.04	0.01	0.00	765.18
0.00	0.04	0.01	0.00	349.66
0.00	0.04	0.01	0.00	286.02
0.00	0.04	0.01	0.00	617.62
0.00	0.04	0.01	0.00	1198.21
0.00	0.04	0.01	0.00	1461.08

**Mobile Source Emissions Calculation Sheets**

<b><u>PM10 Run truck (g/mi)</u></b>	<b><u>PM10 truck bw (g/mi)</u></b>	<b><u>PM10 truck tw (g/mi)</u></b>	<b><u>PM10 truck re (lb/mi)</u></b>	<b><u>pm10 truck (lb/day)</u></b>	<b><u>PM10 (lb/day)</u></b>
0.01	0.08	0.03	0.00	0.73	1.15
0.01	0.08	0.03	0.00	8.09	12.76
0.01	0.08	0.03	0.00	39.39	62.02
0.01	0.08	0.03	0.00	79.95	125.75
0.01	0.08	0.03	0.00	184.55	290.13
0.01	0.08	0.03	0.00	931.45	1463.77
0.00	0.08	0.03	0.00	1770.31	2781.50
0.00	0.08	0.03	0.00	1340.02	2105.19
0.00	0.08	0.03	0.00	612.42	962.07
0.00	0.08	0.03	0.00	500.94	786.96
0.00	0.08	0.03	0.00	0.00	617.62
0.00	0.08	0.03	0.00	0.00	1198.21
0.00	0.08	0.03	0.00	0.00	1461.08
0.01	0.08	0.03	0.00	0.73	1.15
0.01	0.08	0.03	0.00	8.09	12.76
0.01	0.08	0.03	0.00	39.39	62.02
0.01	0.08	0.03	0.00	79.95	125.75
0.01	0.08	0.03	0.00	184.55	290.13
0.01	0.08	0.03	0.00	931.45	1463.77
0.00	0.08	0.03	0.00	1770.31	2781.50
0.00	0.08	0.03	0.00	1340.02	2105.19
0.00	0.08	0.03	0.00	612.42	962.07
0.00	0.08	0.03	0.00	500.94	786.96
0.00	0.08	0.03	0.00	0.00	617.62
0.00	0.08	0.03	0.00	0.00	1198.21
0.00	0.08	0.03	0.00	0.00	1461.08

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Auto Run (g/mi)</u></b>	<b><u>PM2.5 Auto bw (g/mi)</u></b>	<b><u>PM2.5 Auto tw (g/mi)</u></b>	<b><u>PM2.5 Auto re (lb/mi)</u></b>	<b><u>pm2.5 auto (lb/day)</u></b>
0.00	0.02	0.00	0.00	0.10
0.00	0.02	0.00	0.00	1.02
0.00	0.02	0.00	0.00	4.86
0.00	0.02	0.00	0.00	9.73
0.00	0.02	0.00	0.00	22.30
0.00	0.02	0.00	0.00	111.98
0.00	0.02	0.00	0.00	212.19
0.00	0.02	0.00	0.00	160.32
0.00	0.02	0.00	0.00	73.20
0.00	0.02	0.00	0.00	59.85
0.00	0.02	0.00	0.00	129.27
0.00	0.02	0.00	0.00	250.95
0.00	0.02	0.00	0.00	306.40
0.00	0.02	0.00	0.00	0.10
0.00	0.02	0.00	0.00	1.02
0.00	0.02	0.00	0.00	4.86
0.00	0.02	0.00	0.00	9.73
0.00	0.02	0.00	0.00	22.30
0.00	0.02	0.00	0.00	111.98
0.00	0.02	0.00	0.00	212.19
0.00	0.02	0.00	0.00	160.32
0.00	0.02	0.00	0.00	73.20
0.00	0.02	0.00	0.00	59.85
0.00	0.02	0.00	0.00	129.27
0.00	0.02	0.00	0.00	250.95
0.00	0.02	0.00	0.00	306.40

**Mobile Source Emissions Calculation Sheets**

<b><u>PM2.5 Run truck (g/mi)</u></b>	<b><u>PM2.5 truck bw (g/mi)</u></b>	<b><u>PM2.5 truck tw (g/mi)</u></b>	<b><u>PM2.5 truck re (lb/mi)</u></b>	<b><u>pm2.5 truck (lb/day)</u></b>	<b><u>PM2.5 (lb/day)</u></b>
0.01	0.04	0.01	0.00	0.12	0.22
0.01	0.04	0.01	0.00	1.34	2.36
0.01	0.04	0.01	0.00	6.49	11.34
0.01	0.04	0.01	0.00	13.14	22.87
0.01	0.04	0.01	0.00	30.28	52.57
0.01	0.04	0.01	0.00	152.63	264.61
0.00	0.04	0.01	0.00	289.82	502.01
0.00	0.04	0.01	0.00	219.21	379.53
0.00	0.04	0.01	0.00	100.12	173.32
0.00	0.04	0.01	0.00	81.85	141.71
0.00	0.04	0.01	0.00	0.00	129.27
0.00	0.04	0.01	0.00	0.00	250.95
0.00	0.04	0.01	0.00	0.00	306.40
0.01	0.04	0.01	0.00	0.12	0.22
0.01	0.04	0.01	0.00	1.34	2.36
0.01	0.04	0.01	0.00	6.49	11.34
0.01	0.04	0.01	0.00	13.14	22.87
0.01	0.04	0.01	0.00	30.28	52.57
0.01	0.04	0.01	0.00	152.63	264.61
0.00	0.04	0.01	0.00	289.82	502.01
0.00	0.04	0.01	0.00	219.21	379.53
0.00	0.04	0.01	0.00	100.12	173.32
0.00	0.04	0.01	0.00	81.85	141.71
0.00	0.04	0.01	0.00	0.00	129.27
0.00	0.04	0.01	0.00	0.00	250.95
0.00	0.04	0.01	0.00	0.00	306.40

**Mobile Source Emissions Calculation Sheets**

<u>CO-Auto (g/mi)</u>	<u>CO-Truck (g/mi)</u>	<u>CO (lb/day)</u>	<u>NOX-Auto (g/mi)</u>	<u>NOX-Truck (g/mi)</u>	<u>NOX (lb/day)</u>	<u>ROG-Auto</u>	<u>ROG-Truck</u>	<u>ROG (lb/day)</u>
0.76	3.12	2.62	0.06	13.14	4.50	0.08	0.46	0.32
0.66	2.52	24.64	0.05	9.97	38.02	0.05	0.37	2.52
0.57	1.75	96.33	0.04	5.98	112.25	0.03	0.25	8.26
0.51	1.25	162.11	0.03	3.35	130.24	0.02	0.17	11.70
0.46	0.93	321.79	0.03	1.82	169.04	0.02	0.12	19.92
0.42	0.71	1423.42	0.03	1.13	554.29	0.01	0.09	76.82
0.39	0.54	2403.03	0.02	0.77	750.35	0.01	0.07	114.96
0.36	0.42	1636.21	0.02	0.56	432.97	0.01	0.05	70.89
0.34	0.32	681.07	0.02	0.42	159.08	0.01	0.04	27.47
0.32	0.25	513.98	0.02	0.33	109.28	0.01	0.03	19.98
0.30	0.20	937.70	0.02	0.27	70.42	0.01	0.02	29.79
0.29	0.18	1758.97	0.02	0.25	139.32	0.01	0.02	62.36
0.29	0.18	2114.84	0.02	0.25	176.08	0.01	0.02	86.38
0.76	3.12	2.62	0.06	13.14	4.50	0.08	0.46	0.32
0.66	2.52	24.64	0.05	9.97	38.02	0.05	0.37	2.52
0.57	1.75	96.33	0.04	5.98	112.25	0.03	0.25	8.26
0.51	1.25	162.11	0.03	3.35	130.24	0.02	0.17	11.70
0.46	0.93	321.79	0.03	1.82	169.04	0.02	0.12	19.92
0.42	0.71	1423.42	0.03	1.13	554.29	0.01	0.09	76.82
0.39	0.54	2403.03	0.02	0.77	750.35	0.01	0.07	114.96
0.36	0.42	1636.21	0.02	0.56	432.97	0.01	0.05	70.89
0.34	0.32	681.07	0.02	0.42	159.08	0.01	0.04	27.47
0.32	0.25	513.98	0.02	0.33	109.28	0.01	0.03	19.98
0.30	0.20	937.70	0.02	0.27	70.42	0.01	0.02	29.79
0.29	0.18	1758.97	0.02	0.25	139.32	0.01	0.02	62.36
0.29	0.18	2114.84	0.02	0.25	176.08	0.01	0.02	86.38

**Mobile Source Emissions Calculation Sheets**

<u>SOX-Auto</u>	<u>SOX-TRUCK</u>	<u>SOX (lb/day)</u>	<u>CH4 Auto</u>	<u>CH4 Truck</u>	<u>CH4 (lb/day)</u>	<u>CO2 Auto</u>	<u>CO2 Truck</u>	<u>CO2 (lb/day)</u>
0.01	0.02	0.02	0.03	0.15	0.11	584.28	2421.91	2026.62
0.00	0.02	0.17	0.02	0.12	0.87	435.50	2148.92	18040.12
0.00	0.02	0.68	0.01	0.09	2.83	335.37	1768.45	69730.49
0.00	0.01	1.14	0.01	0.06	3.96	267.88	1536.13	117606.85
0.00	0.01	2.29	0.01	0.05	6.70	222.58	1413.72	237260.52
0.00	0.01	10.43	0.00	0.03	25.69	191.98	1333.84	1081889.50
0.00	0.01	18.37	0.00	0.02	38.06	171.76	1276.03	1907056.20
0.00	0.01	13.14	0.00	0.02	23.14	159.37	1225.06	1364793.55
0.00	0.01	5.79	0.00	0.01	8.81	153.31	1183.92	601640.94
0.00	0.01	4.66	0.00	0.01	6.28	152.96	1151.40	484219.92
0.00	0.01	4.90	0.00	0.01	8.66	158.36	1123.32	491794.22
0.00	0.01	10.20	0.00	0.01	18.03	170.10	1108.26	1024645.79
0.00	0.01	13.86	0.00	0.01	24.87	189.56	1109.37	1391854.27
0.01	0.02	0.02	0.03	0.15	0.11	584.28	2421.91	2026.62
0.00	0.02	0.17	0.02	0.12	0.87	435.50	2148.92	18040.12
0.00	0.02	0.68	0.01	0.09	2.83	335.37	1768.45	69730.49
0.00	0.01	1.14	0.01	0.06	3.96	267.88	1536.13	117606.85
0.00	0.01	2.29	0.01	0.05	6.70	222.58	1413.72	237260.52
0.00	0.01	10.43	0.00	0.03	25.69	191.98	1333.84	1081889.50
0.00	0.01	18.37	0.00	0.02	38.06	171.76	1276.03	1907056.20
0.00	0.01	13.14	0.00	0.02	23.14	159.37	1225.06	1364793.55
0.00	0.01	5.79	0.00	0.01	8.81	153.31	1183.92	601640.94
0.00	0.01	4.66	0.00	0.01	6.28	152.96	1151.40	484219.92
0.00	0.01	4.90	0.00	0.01	8.66	158.36	1123.32	491794.22
0.00	0.01	10.20	0.00	0.01	18.03	170.10	1108.26	1024645.79
0.00	0.01	13.86	0.00	0.01	24.87	189.56	1109.37	1391854.27

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2016	San Bernardino (SC)	NT	PMBW		PM10	0.038327535
2016	San Bernardino (SC)	NT	PMBW		PM2_5	0.016426086
2016	San Bernardino (SC)	NT	PMTW		PM10	0.008003913
2016	San Bernardino (SC)	NT	PMTW		PM2_5	0.002000978
2016	San Bernardino (SC)	NT	RUNEX	5 CH4		0.096623264
2016	San Bernardino (SC)	NT	RUNEX	10 CH4		0.064125989
2016	San Bernardino (SC)	NT	RUNEX	15 CH4		0.041366026
2016	San Bernardino (SC)	NT	RUNEX	20 CH4		0.027871736
2016	San Bernardino (SC)	NT	RUNEX	25 CH4		0.020863935
2016	San Bernardino (SC)	NT	RUNEX	30 CH4		0.016553672
2016	San Bernardino (SC)	NT	RUNEX	35 CH4		0.013759638
2016	San Bernardino (SC)	NT	RUNEX	40 CH4		0.011998308
2016	San Bernardino (SC)	NT	RUNEX	45 CH4		0.01099825
2016	San Bernardino (SC)	NT	RUNEX	50 CH4		0.010618102
2016	San Bernardino (SC)	NT	RUNEX	55 CH4		0.010807027
2016	San Bernardino (SC)	NT	RUNEX	60 CH4		0.011594279
2016	San Bernardino (SC)	NT	RUNEX	65 CH4		0.013089506
2016	San Bernardino (SC)	NT	RUNEX	5 CO		2.948252571
2016	San Bernardino (SC)	NT	RUNEX	10 CO		2.515224988
2016	San Bernardino (SC)	NT	RUNEX	15 CO		2.184726627
2016	San Bernardino (SC)	NT	RUNEX	20 CO		1.932718217
2016	San Bernardino (SC)	NT	RUNEX	25 CO		1.73822732
2016	San Bernardino (SC)	NT	RUNEX	30 CO		1.58287049
2016	San Bernardino (SC)	NT	RUNEX	35 CO		1.45720265
2016	San Bernardino (SC)	NT	RUNEX	40 CO		1.35611305
2016	San Bernardino (SC)	NT	RUNEX	45 CO		1.276799945
2016	San Bernardino (SC)	NT	RUNEX	50 CO		1.218397306
2016	San Bernardino (SC)	NT	RUNEX	55 CO		1.18207245
2016	San Bernardino (SC)	NT	RUNEX	60 CO		1.171690764
2016	San Bernardino (SC)	NT	RUNEX	65 CO		1.195084755
2016	San Bernardino (SC)	NT	RUNEX	5 CO2		1196.241392
2016	San Bernardino (SC)	NT	RUNEX	10 CO2		890.0669057
2016	San Bernardino (SC)	NT	RUNEX	15 CO2		685.1124527
2016	San Bernardino (SC)	NT	RUNEX	20 CO2		547.1105661
2016	San Bernardino (SC)	NT	RUNEX	25 CO2		454.2628123
2016	San Bernardino (SC)	NT	RUNEX	30 CO2		391.5381366
2016	San Bernardino (SC)	NT	RUNEX	35 CO2		350.107689
2016	San Bernardino (SC)	NT	RUNEX	40 CO2		324.7475319
2016	San Bernardino (SC)	NT	RUNEX	45 CO2		312.4318414
2016	San Bernardino (SC)	NT	RUNEX	50 CO2		311.8148443
2016	San Bernardino (SC)	NT	RUNEX	55 CO2		322.9405921
2016	San Bernardino (SC)	NT	RUNEX	60 CO2		347.0680094
2016	San Bernardino (SC)	NT	RUNEX	65 CO2		387.0178014
2016	San Bernardino (SC)	NT	RUNEX	5 NOx		0.294104564



### EMFAC2014 Emissions Factors Data

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2016	San Bernardino (SC)	NT	RUNEX	10	NOx	0.251600825
2016	San Bernardino (SC)	NT	RUNEX	15	NOx	0.212996322
2016	San Bernardino (SC)	NT	RUNEX	20	NOx	0.187154628
2016	San Bernardino (SC)	NT	RUNEX	25	NOx	0.171447055
2016	San Bernardino (SC)	NT	RUNEX	30	NOx	0.160429933
2016	San Bernardino (SC)	NT	RUNEX	35	NOx	0.152725523
2016	San Bernardino (SC)	NT	RUNEX	40	NOx	0.147818219
2016	San Bernardino (SC)	NT	RUNEX	45	NOx	0.145399209
2016	San Bernardino (SC)	NT	RUNEX	50	NOx	0.145319588
2016	San Bernardino (SC)	NT	RUNEX	55	NOx	0.147573573
2016	San Bernardino (SC)	NT	RUNEX	60	NOx	0.152262277
2016	San Bernardino (SC)	NT	RUNEX	65	NOx	0.15964389
2016	San Bernardino (SC)	NT	RUNEX	5	PM10	0.013060363
2016	San Bernardino (SC)	NT	RUNEX	10	PM10	0.008565539
2016	San Bernardino (SC)	NT	RUNEX	15	PM10	0.005792681
2016	San Bernardino (SC)	NT	RUNEX	20	PM10	0.00410389
2016	San Bernardino (SC)	NT	RUNEX	25	PM10	0.003098342
2016	San Bernardino (SC)	NT	RUNEX	30	PM10	0.002467306
2016	San Bernardino (SC)	NT	RUNEX	35	PM10	0.002063172
2016	San Bernardino (SC)	NT	RUNEX	40	PM10	0.001813238
2016	San Bernardino (SC)	NT	RUNEX	45	PM10	0.001676784
2016	San Bernardino (SC)	NT	RUNEX	50	PM10	0.001632708
2016	San Bernardino (SC)	NT	RUNEX	55	PM10	0.001673553
2016	San Bernardino (SC)	NT	RUNEX	60	PM10	0.001798282
2016	San Bernardino (SC)	NT	RUNEX	65	PM10	0.00202075
2016	San Bernardino (SC)	NT	RUNEX	5	PM2_5	0.012073358
2016	San Bernardino (SC)	NT	RUNEX	10	PM2_5	0.007926224
2016	San Bernardino (SC)	NT	RUNEX	15	PM2_5	0.005361611
2016	San Bernardino (SC)	NT	RUNEX	20	PM2_5	0.003798632
2016	San Bernardino (SC)	NT	RUNEX	25	PM2_5	0.002869086
2016	San Bernardino (SC)	NT	RUNEX	30	PM2_5	0.002285814
2016	San Bernardino (SC)	NT	RUNEX	35	PM2_5	0.001912133
2016	San Bernardino (SC)	NT	RUNEX	40	PM2_5	0.001681047
2016	San Bernardino (SC)	NT	RUNEX	45	PM2_5	0.001555032
2016	San Bernardino (SC)	NT	RUNEX	50	PM2_5	0.001514649
2016	San Bernardino (SC)	NT	RUNEX	55	PM2_5	0.001553042
2016	San Bernardino (SC)	NT	RUNEX	60	PM2_5	0.001669097
2016	San Bernardino (SC)	NT	RUNEX	65	PM2_5	0.001875515
2016	San Bernardino (SC)	NT	RUNEX	5	ROG	0.266334193
2016	San Bernardino (SC)	NT	RUNEX	10	ROG	0.174724378
2016	San Bernardino (SC)	NT	RUNEX	15	ROG	0.119274549
2016	San Bernardino (SC)	NT	RUNEX	20	ROG	0.085610292
2016	San Bernardino (SC)	NT	RUNEX	25	ROG	0.065128691
2016	San Bernardino (SC)	NT	RUNEX	30	ROG	0.052155887

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2016	San Bernardino (SC)	NT	RUNEX	35	ROG	0.043871083
2016	San Bernardino (SC)	NT	RUNEX	40	ROG	0.038758316
2016	San Bernardino (SC)	NT	RUNEX	45	ROG	0.035967374
2016	San Bernardino (SC)	NT	RUNEX	50	ROG	0.035065627
2016	San Bernardino (SC)	NT	RUNEX	55	ROG	0.035919869
2016	San Bernardino (SC)	NT	RUNEX	60	ROG	0.038659489
2016	San Bernardino (SC)	NT	RUNEX	65	ROG	0.043707464
2016	San Bernardino (SC)	NT	RUNEX	5	SOx	0.011970516
2016	San Bernardino (SC)	NT	RUNEX	10	SOx	0.008907245
2016	San Bernardino (SC)	NT	RUNEX	15	SOx	0.00685857
2016	San Bernardino (SC)	NT	RUNEX	20	SOx	0.005479328
2016	San Bernardino (SC)	NT	RUNEX	25	SOx	0.004550482
2016	San Bernardino (SC)	NT	RUNEX	30	SOx	0.003922468
2016	San Bernardino (SC)	NT	RUNEX	35	SOx	0.003507417
2016	San Bernardino (SC)	NT	RUNEX	40	SOx	0.003253086
2016	San Bernardino (SC)	NT	RUNEX	45	SOx	0.00312921
2016	San Bernardino (SC)	NT	RUNEX	50	SOx	0.003122328
2016	San Bernardino (SC)	NT	RUNEX	55	SOx	0.003232888
2016	San Bernardino (SC)	NT	RUNEX	60	SOx	0.00347352
2016	San Bernardino (SC)	NT	RUNEX	65	SOx	0.003872503
2016	San Bernardino (SC)	NT	RUNLOSS		ROG	2.247442243
2016	San Bernardino (SC)	T	PMBW		PM10	0.08322694
2016	San Bernardino (SC)	T	PMBW		PM2_5	0.035668689
2016	San Bernardino (SC)	T	PMTW		PM10	0.022114007
2016	San Bernardino (SC)	T	PMTW		PM2_5	0.005528502
2016	San Bernardino (SC)	T	RUNEX	5	CH4	0.207419681
2016	San Bernardino (SC)	T	RUNEX	10	CH4	0.157541154
2016	San Bernardino (SC)	T	RUNEX	15	CH4	0.10025395
2016	San Bernardino (SC)	T	RUNEX	20	CH4	0.065527651
2016	San Bernardino (SC)	T	RUNEX	25	CH4	0.048533784
2016	San Bernardino (SC)	T	RUNEX	30	CH4	0.037344235
2016	San Bernardino (SC)	T	RUNEX	35	CH4	0.02921359
2016	San Bernardino (SC)	T	RUNEX	40	CH4	0.023365068
2016	San Bernardino (SC)	T	RUNEX	45	CH4	0.019270588
2016	San Bernardino (SC)	T	RUNEX	50	CH4	0.016572569
2016	San Bernardino (SC)	T	RUNEX	55	CH4	0.015037714
2016	San Bernardino (SC)	T	RUNEX	60	CH4	0.014968851
2016	San Bernardino (SC)	T	RUNEX	65	CH4	0.015878287
2016	San Bernardino (SC)	T	RUNEX	5	CO	4.722287812
2016	San Bernardino (SC)	T	RUNEX	10	CO	3.804004112
2016	San Bernardino (SC)	T	RUNEX	15	CO	2.766368763
2016	San Bernardino (SC)	T	RUNEX	20	CO	2.083372263
2016	San Bernardino (SC)	T	RUNEX	25	CO	1.679922943
2016	San Bernardino (SC)	T	RUNEX	30	CO	1.403435551

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2016	San Bernardino (SC)	T	RUNEX	35	CO	1.199517984
2016	San Bernardino (SC)	T	RUNEX	40	CO	1.05252124
2016	San Bernardino (SC)	T	RUNEX	45	CO	0.952482048
2016	San Bernardino (SC)	T	RUNEX	50	CO	0.893853131
2016	San Bernardino (SC)	T	RUNEX	55	CO	0.875088782
2016	San Bernardino (SC)	T	RUNEX	60	CO	0.905591462
2016	San Bernardino (SC)	T	RUNEX	65	CO	0.983606272
2016	San Bernardino (SC)	T	RUNEX	5	CO2	2542.974426
2016	San Bernardino (SC)	T	RUNEX	10	CO2	2281.449946
2016	San Bernardino (SC)	T	RUNEX	15	CO2	1836.077917
2016	San Bernardino (SC)	T	RUNEX	20	CO2	1579.408401
2016	San Bernardino (SC)	T	RUNEX	25	CO2	1439.633683
2016	San Bernardino (SC)	T	RUNEX	30	CO2	1342.258012
2016	San Bernardino (SC)	T	RUNEX	35	CO2	1280.217257
2016	San Bernardino (SC)	T	RUNEX	40	CO2	1226.372784
2016	San Bernardino (SC)	T	RUNEX	45	CO2	1181.371035
2016	San Bernardino (SC)	T	RUNEX	50	CO2	1156.017978
2016	San Bernardino (SC)	T	RUNEX	55	CO2	1140.330274
2016	San Bernardino (SC)	T	RUNEX	60	CO2	1132.33135
2016	San Bernardino (SC)	T	RUNEX	65	CO2	1135.117718
2016	San Bernardino (SC)	T	RUNEX	5	NOx	11.97582878
2016	San Bernardino (SC)	T	RUNEX	10	NOx	9.99065098
2016	San Bernardino (SC)	T	RUNEX	15	NOx	7.356420225
2016	San Bernardino (SC)	T	RUNEX	20	NOx	5.731950772
2016	San Bernardino (SC)	T	RUNEX	25	NOx	4.930362994
2016	San Bernardino (SC)	T	RUNEX	30	NOx	4.490104097
2016	San Bernardino (SC)	T	RUNEX	35	NOx	4.194721667
2016	San Bernardino (SC)	T	RUNEX	40	NOx	3.989406671
2016	San Bernardino (SC)	T	RUNEX	45	NOx	3.847697728
2016	San Bernardino (SC)	T	RUNEX	50	NOx	3.75529306
2016	San Bernardino (SC)	T	RUNEX	55	NOx	3.703841029
2016	San Bernardino (SC)	T	RUNEX	60	NOx	3.704399869
2016	San Bernardino (SC)	T	RUNEX	65	NOx	3.733515443
2016	San Bernardino (SC)	T	RUNEX	5	PM10	0.172258001
2016	San Bernardino (SC)	T	RUNEX	10	PM10	0.143955517
2016	San Bernardino (SC)	T	RUNEX	15	PM10	0.1043985
2016	San Bernardino (SC)	T	RUNEX	20	PM10	0.077009127
2016	San Bernardino (SC)	T	RUNEX	25	PM10	0.064782754
2016	San Bernardino (SC)	T	RUNEX	30	PM10	0.057878807
2016	San Bernardino (SC)	T	RUNEX	35	PM10	0.053615596
2016	San Bernardino (SC)	T	RUNEX	40	PM10	0.051847942
2016	San Bernardino (SC)	T	RUNEX	45	PM10	0.052504323
2016	San Bernardino (SC)	T	RUNEX	50	PM10	0.055563557
2016	San Bernardino (SC)	T	RUNEX	55	PM10	0.061044179

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2016	San Bernardino (SC)	T	RUNEX	60	PM10	0.064832624
2016	San Bernardino (SC)	T	RUNEX	65	PM10	0.06541142
2016	San Bernardino (SC)	T	RUNEX	5	PM2_5	0.164741394
2016	San Bernardino (SC)	T	RUNEX	10	PM2_5	0.137686776
2016	San Bernardino (SC)	T	RUNEX	15	PM2_5	0.099854514
2016	San Bernardino (SC)	T	RUNEX	20	PM2_5	0.073658069
2016	San Bernardino (SC)	T	RUNEX	25	PM2_5	0.061965569
2016	San Bernardino (SC)	T	RUNEX	30	PM2_5	0.055363399
2016	San Bernardino (SC)	T	RUNEX	35	PM2_5	0.051286573
2016	San Bernardino (SC)	T	RUNEX	40	PM2_5	0.049596583
2016	San Bernardino (SC)	T	RUNEX	45	PM2_5	0.050225222
2016	San Bernardino (SC)	T	RUNEX	50	PM2_5	0.05315233
2016	San Bernardino (SC)	T	RUNEX	55	PM2_5	0.05839568
2016	San Bernardino (SC)	T	RUNEX	60	PM2_5	0.062019627
2016	San Bernardino (SC)	T	RUNEX	65	PM2_5	0.062572245
2016	San Bernardino (SC)	T	RUNEX	5	ROG	1.533100926
2016	San Bernardino (SC)	T	RUNEX	10	ROG	1.170764671
2016	San Bernardino (SC)	T	RUNEX	15	ROG	0.697151724
2016	San Bernardino (SC)	T	RUNEX	20	ROG	0.416087587
2016	San Bernardino (SC)	T	RUNEX	25	ROG	0.306855101
2016	San Bernardino (SC)	T	RUNEX	30	ROG	0.239497474
2016	San Bernardino (SC)	T	RUNEX	35	ROG	0.189750915
2016	San Bernardino (SC)	T	RUNEX	40	ROG	0.153824935
2016	San Bernardino (SC)	T	RUNEX	45	ROG	0.1291046
2016	San Bernardino (SC)	T	RUNEX	50	ROG	0.113775028
2016	San Bernardino (SC)	T	RUNEX	55	ROG	0.106601171
2016	San Bernardino (SC)	T	RUNEX	60	ROG	0.107548289
2016	San Bernardino (SC)	T	RUNEX	65	ROG	0.112119984
2016	San Bernardino (SC)	T	RUNEX	5	SOx	0.024139311
2016	San Bernardino (SC)	T	RUNEX	10	SOx	0.021664437
2016	San Bernardino (SC)	T	RUNEX	15	SOx	0.017412021
2016	San Bernardino (SC)	T	RUNEX	20	SOx	0.014972932
2016	San Bernardino (SC)	T	RUNEX	25	SOx	0.013645816
2016	San Bernardino (SC)	T	RUNEX	30	SOx	0.012719075
2016	San Bernardino (SC)	T	RUNEX	35	SOx	0.012133128
2016	San Bernardino (SC)	T	RUNEX	40	SOx	0.011623987
2016	San Bernardino (SC)	T	RUNEX	45	SOx	0.011198417
2016	San Bernardino (SC)	T	RUNEX	50	SOx	0.010962873
2016	San Bernardino (SC)	T	RUNEX	55	SOx	0.010819556
2016	San Bernardino (SC)	T	RUNEX	60	SOx	0.010746095
2016	San Bernardino (SC)	T	RUNEX	65	SOx	0.010774352
2016	San Bernardino (SC)	T	RUNLOSS		ROG	5.853650616
2020	San Bernardino (SC)	NT	PMBW		PM10	0.038197305
2020	San Bernardino (SC)	NT	PMBW		PM2_5	0.016370274

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2020	San Bernardino (SC)	NT	PMTW		PM10	0.008002473
2020	San Bernardino (SC)	NT	PMTW		PM2_5	0.002000618
2020	San Bernardino (SC)	NT	RUNEX	5	CH4	0.067452288
2020	San Bernardino (SC)	NT	RUNEX	10	CH4	0.044636606
2020	San Bernardino (SC)	NT	RUNEX	15	CH4	0.028599631
2020	San Bernardino (SC)	NT	RUNEX	20	CH4	0.019115354
2020	San Bernardino (SC)	NT	RUNEX	25	CH4	0.014238065
2020	San Bernardino (SC)	NT	RUNEX	30	CH4	0.011264266
2020	San Bernardino (SC)	NT	RUNEX	35	CH4	0.009345543
2020	San Bernardino (SC)	NT	RUNEX	40	CH4	0.008139562
2020	San Bernardino (SC)	NT	RUNEX	45	CH4	0.007455164
2020	San Bernardino (SC)	NT	RUNEX	50	CH4	0.007193104
2020	San Bernardino (SC)	NT	RUNEX	55	CH4	0.007317686
2020	San Bernardino (SC)	NT	RUNEX	60	CH4	0.007851633
2020	San Bernardino (SC)	NT	RUNEX	65	CH4	0.008870762
2020	San Bernardino (SC)	NT	RUNEX	5	CO	1.900707545
2020	San Bernardino (SC)	NT	RUNEX	10	CO	1.648021735
2020	San Bernardino (SC)	NT	RUNEX	15	CO	1.443101921
2020	San Bernardino (SC)	NT	RUNEX	20	CO	1.283854025
2020	San Bernardino (SC)	NT	RUNEX	25	CO	1.160359297
2020	San Bernardino (SC)	NT	RUNEX	30	CO	1.059566917
2020	San Bernardino (SC)	NT	RUNEX	35	CO	0.975797429
2020	San Bernardino (SC)	NT	RUNEX	40	CO	0.906217332
2020	San Bernardino (SC)	NT	RUNEX	45	CO	0.849149503
2020	San Bernardino (SC)	NT	RUNEX	50	CO	0.803864032
2020	San Bernardino (SC)	NT	RUNEX	55	CO	0.770601963
2020	San Bernardino (SC)	NT	RUNEX	60	CO	0.750910861
2020	San Bernardino (SC)	NT	RUNEX	65	CO	0.748094567
2020	San Bernardino (SC)	NT	RUNEX	5	CO2	1052.063381
2020	San Bernardino (SC)	NT	RUNEX	10	CO2	782.9840734
2020	San Bernardino (SC)	NT	RUNEX	15	CO2	602.8255653
2020	San Bernardino (SC)	NT	RUNEX	20	CO2	481.4787904
2020	San Bernardino (SC)	NT	RUNEX	25	CO2	399.8042277
2020	San Bernardino (SC)	NT	RUNEX	30	CO2	344.6158302
2020	San Bernardino (SC)	NT	RUNEX	35	CO2	308.1712104
2020	San Bernardino (SC)	NT	RUNEX	40	CO2	285.8622367
2020	San Bernardino (SC)	NT	RUNEX	45	CO2	275.0255992
2020	San Bernardino (SC)	NT	RUNEX	50	CO2	274.4832361
2020	San Bernardino (SC)	NT	RUNEX	55	CO2	284.2767071
2020	San Bernardino (SC)	NT	RUNEX	60	CO2	305.5100264
2020	San Bernardino (SC)	NT	RUNEX	65	CO2	340.6710712
2020	San Bernardino (SC)	NT	RUNEX	5	NOx	0.190331528
2020	San Bernardino (SC)	NT	RUNEX	10	NOx	0.162434778
2020	San Bernardino (SC)	NT	RUNEX	15	NOx	0.136450054

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2020	San Bernardino (SC)	NT	RUNEX	20	NOx	0.118913002
2020	San Bernardino (SC)	NT	RUNEX	25	NOx	0.108154146
2020	San Bernardino (SC)	NT	RUNEX	30	NOx	0.100666224
2020	San Bernardino (SC)	NT	RUNEX	35	NOx	0.095385919
2020	San Bernardino (SC)	NT	RUNEX	40	NOx	0.091925222
2020	San Bernardino (SC)	NT	RUNEX	45	NOx	0.090058586
2020	San Bernardino (SC)	NT	RUNEX	50	NOx	0.089672081
2020	San Bernardino (SC)	NT	RUNEX	55	NOx	0.0907443
2020	San Bernardino (SC)	NT	RUNEX	60	NOx	0.093347203
2020	San Bernardino (SC)	NT	RUNEX	65	NOx	0.097611904
2020	San Bernardino (SC)	NT	RUNEX	5	PM10	0.012620383
2020	San Bernardino (SC)	NT	RUNEX	10	PM10	0.008132416
2020	San Bernardino (SC)	NT	RUNEX	15	PM10	0.005461774
2020	San Bernardino (SC)	NT	RUNEX	20	PM10	0.003855038
2020	San Bernardino (SC)	NT	RUNEX	25	PM10	0.00288609
2020	San Bernardino (SC)	NT	RUNEX	30	PM10	0.002279559
2020	San Bernardino (SC)	NT	RUNEX	35	PM10	0.001894454
2020	San Bernardino (SC)	NT	RUNEX	40	PM10	0.001657021
2020	San Bernardino (SC)	NT	RUNEX	45	PM10	0.001526087
2020	San Bernardino (SC)	NT	RUNEX	50	PM10	0.001480308
2020	San Bernardino (SC)	NT	RUNEX	55	PM10	0.001512009
2020	San Bernardino (SC)	NT	RUNEX	60	PM10	0.001623448
2020	San Bernardino (SC)	NT	RUNEX	65	PM10	0.001829914
2020	San Bernardino (SC)	NT	RUNEX	5	PM2_5	0.01163578
2020	San Bernardino (SC)	NT	RUNEX	10	PM2_5	0.007502853
2020	San Bernardino (SC)	NT	RUNEX	15	PM2_5	0.005040002
2020	San Bernardino (SC)	NT	RUNEX	20	PM2_5	0.003557643
2020	San Bernardino (SC)	NT	RUNEX	25	PM2_5	0.002664265
2020	San Bernardino (SC)	NT	RUNEX	30	PM2_5	0.00210507
2020	San Bernardino (SC)	NT	RUNEX	35	PM2_5	0.001749938
2020	San Bernardino (SC)	NT	RUNEX	40	PM2_5	0.001530983
2020	San Bernardino (SC)	NT	RUNEX	45	PM2_5	0.00141031
2020	San Bernardino (SC)	NT	RUNEX	50	PM2_5	0.001368276
2020	San Bernardino (SC)	NT	RUNEX	55	PM2_5	0.001397819
2020	San Bernardino (SC)	NT	RUNEX	60	PM2_5	0.001500966
2020	San Bernardino (SC)	NT	RUNEX	65	PM2_5	0.001691757
2020	San Bernardino (SC)	NT	RUNEX	5	ROG	0.173646556
2020	San Bernardino (SC)	NT	RUNEX	10	ROG	0.112731717
2020	San Bernardino (SC)	NT	RUNEX	15	ROG	0.076074031
2020	San Bernardino (SC)	NT	RUNEX	20	ROG	0.054003878
2020	San Bernardino (SC)	NT	RUNEX	25	ROG	0.040700117
2020	San Bernardino (SC)	NT	RUNEX	30	ROG	0.032327051
2020	San Bernardino (SC)	NT	RUNEX	35	ROG	0.026997759
2020	San Bernardino (SC)	NT	RUNEX	40	ROG	0.023705474

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2020	San Bernardino (SC)	NT	RUNEX	45	ROG	0.021886574
2020	San Bernardino (SC)	NT	RUNEX	50	ROG	0.021251691
2020	San Bernardino (SC)	NT	RUNEX	55	ROG	0.021704858
2020	San Bernardino (SC)	NT	RUNEX	60	ROG	0.023321192
2020	San Bernardino (SC)	NT	RUNEX	65	ROG	0.026355641
2020	San Bernardino (SC)	NT	RUNEX	5	SOx	0.010512329
2020	San Bernardino (SC)	NT	RUNEX	10	SOx	0.007823261
2020	San Bernardino (SC)	NT	RUNEX	15	SOx	0.006024635
2020	San Bernardino (SC)	NT	RUNEX	20	SOx	0.004813415
2020	San Bernardino (SC)	NT	RUNEX	25	SOx	0.003997431
2020	San Bernardino (SC)	NT	RUNEX	30	SOx	0.003445649
2020	San Bernardino (SC)	NT	RUNEX	35	SOx	0.003081107
2020	San Bernardino (SC)	NT	RUNEX	40	SOx	0.002857772
2020	San Bernardino (SC)	NT	RUNEX	45	SOx	0.002749029
2020	San Bernardino (SC)	NT	RUNEX	50	SOx	0.002743096
2020	San Bernardino (SC)	NT	RUNEX	55	SOx	0.002840382
2020	San Bernardino (SC)	NT	RUNEX	60	SOx	0.003051933
2020	San Bernardino (SC)	NT	RUNEX	65	SOx	0.003402627
2020	San Bernardino (SC)	NT	RUNLOSS		ROG	1.693623267
2020	San Bernardino (SC)	T	PMBW		PM10	0.083952626
2020	San Bernardino (SC)	T	PMBW		PM2_5	0.035979697
2020	San Bernardino (SC)	T	PMTW		PM10	0.023283086
2020	San Bernardino (SC)	T	PMTW		PM2_5	0.005820772
2020	San Bernardino (SC)	T	RUNEX	5	CH4	0.17178046
2020	San Bernardino (SC)	T	RUNEX	10	CH4	0.133764569
2020	San Bernardino (SC)	T	RUNEX	15	CH4	0.089419915
2020	San Bernardino (SC)	T	RUNEX	20	CH4	0.061679077
2020	San Bernardino (SC)	T	RUNEX	25	CH4	0.04552998
2020	San Bernardino (SC)	T	RUNEX	30	CH4	0.034375062
2020	San Bernardino (SC)	T	RUNEX	35	CH4	0.026222023
2020	San Bernardino (SC)	T	RUNEX	40	CH4	0.020277764
2020	San Bernardino (SC)	T	RUNEX	45	CH4	0.015983974
2020	San Bernardino (SC)	T	RUNEX	50	CH4	0.012947802
2020	San Bernardino (SC)	T	RUNEX	55	CH4	0.010897475
2020	San Bernardino (SC)	T	RUNEX	60	CH4	0.010344121
2020	San Bernardino (SC)	T	RUNEX	65	CH4	0.010834289
2020	San Bernardino (SC)	T	RUNEX	5	CO	3.797904838
2020	San Bernardino (SC)	T	RUNEX	10	CO	3.050068406
2020	San Bernardino (SC)	T	RUNEX	15	CO	2.18107768
2020	San Bernardino (SC)	T	RUNEX	20	CO	1.616240846
2020	San Bernardino (SC)	T	RUNEX	25	CO	1.259083328
2020	San Bernardino (SC)	T	RUNEX	30	CO	1.008733314
2020	San Bernardino (SC)	T	RUNEX	35	CO	0.825426459
2020	San Bernardino (SC)	T	RUNEX	40	CO	0.692343382

### EMFAC2014 Emissions Factors Data

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2020	San Bernardino (SC)	T	RUNEX	45	CO	0.597977733
2020	San Bernardino (SC)	T	RUNEX	50	CO	0.534777417
2020	San Bernardino (SC)	T	RUNEX	55	CO	0.498455221
2020	San Bernardino (SC)	T	RUNEX	60	CO	0.501444371
2020	San Bernardino (SC)	T	RUNEX	65	CO	0.539362448
2020	San Bernardino (SC)	T	RUNEX	5	CO2	2521.67471
2020	San Bernardino (SC)	T	RUNEX	10	CO2	2250.854099
2020	San Bernardino (SC)	T	RUNEX	15	CO2	1829.47566
2020	San Bernardino (SC)	T	RUNEX	20	CO2	1584.516525
2020	San Bernardino (SC)	T	RUNEX	25	CO2	1450.993545
2020	San Bernardino (SC)	T	RUNEX	30	CO2	1357.730133
2020	San Bernardino (SC)	T	RUNEX	35	CO2	1295.365396
2020	San Bernardino (SC)	T	RUNEX	40	CO2	1241.515088
2020	San Bernardino (SC)	T	RUNEX	45	CO2	1195.900289
2020	San Bernardino (SC)	T	RUNEX	50	CO2	1166.223804
2020	San Bernardino (SC)	T	RUNEX	55	CO2	1145.385384
2020	San Bernardino (SC)	T	RUNEX	60	CO2	1135.019232
2020	San Bernardino (SC)	T	RUNEX	65	CO2	1137.148436
2020	San Bernardino (SC)	T	RUNEX	5	NOx	11.82309722
2020	San Bernardino (SC)	T	RUNEX	10	NOx	9.596744627
2020	San Bernardino (SC)	T	RUNEX	15	NOx	6.740748221
2020	San Bernardino (SC)	T	RUNEX	20	NOx	4.885342784
2020	San Bernardino (SC)	T	RUNEX	25	NOx	3.811974922
2020	San Bernardino (SC)	T	RUNEX	30	NOx	3.249294126
2020	San Bernardino (SC)	T	RUNEX	35	NOx	2.898597833
2020	San Bernardino (SC)	T	RUNEX	40	NOx	2.663186935
2020	San Bernardino (SC)	T	RUNEX	45	NOx	2.498711823
2020	San Bernardino (SC)	T	RUNEX	50	NOx	2.382228019
2020	San Bernardino (SC)	T	RUNEX	55	NOx	2.300780674
2020	San Bernardino (SC)	T	RUNEX	60	NOx	2.27899414
2020	San Bernardino (SC)	T	RUNEX	65	NOx	2.296915729
2020	San Bernardino (SC)	T	RUNEX	5	PM10	0.047326858
2020	San Bernardino (SC)	T	RUNEX	10	PM10	0.040479786
2020	San Bernardino (SC)	T	RUNEX	15	PM10	0.033522445
2020	San Bernardino (SC)	T	RUNEX	20	PM10	0.028614622
2020	San Bernardino (SC)	T	RUNEX	25	PM10	0.025561493
2020	San Bernardino (SC)	T	RUNEX	30	PM10	0.023682471
2020	San Bernardino (SC)	T	RUNEX	35	PM10	0.022589612
2020	San Bernardino (SC)	T	RUNEX	40	PM10	0.022167277
2020	San Bernardino (SC)	T	RUNEX	45	PM10	0.022348727
2020	San Bernardino (SC)	T	RUNEX	50	PM10	0.023097738
2020	San Bernardino (SC)	T	RUNEX	55	PM10	0.024400148
2020	San Bernardino (SC)	T	RUNEX	60	PM10	0.025383889
2020	San Bernardino (SC)	T	RUNEX	65	PM10	0.025756072



### EMFAC2014 Emissions Factors Data

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2020	San Bernardino (SC)	T	RUNEX	5	PM2_5	0.045237405
2020	San Bernardino (SC)	T	RUNEX	10	PM2_5	0.038701886
2020	San Bernardino (SC)	T	RUNEX	15	PM2_5	0.032054338
2020	San Bernardino (SC)	T	RUNEX	20	PM2_5	0.027364079
2020	San Bernardino (SC)	T	RUNEX	25	PM2_5	0.024446251
2020	San Bernardino (SC)	T	RUNEX	30	PM2_5	0.022650536
2020	San Bernardino (SC)	T	RUNEX	35	PM2_5	0.021606225
2020	San Bernardino (SC)	T	RUNEX	40	PM2_5	0.021202937
2020	San Bernardino (SC)	T	RUNEX	45	PM2_5	0.021376962
2020	San Bernardino (SC)	T	RUNEX	50	PM2_5	0.022093716
2020	San Bernardino (SC)	T	RUNEX	55	PM2_5	0.023339673
2020	San Bernardino (SC)	T	RUNEX	60	PM2_5	0.024280474
2020	San Bernardino (SC)	T	RUNEX	65	PM2_5	0.024635834
2020	San Bernardino (SC)	T	RUNEX	5	ROG	0.84061205
2020	San Bernardino (SC)	T	RUNEX	10	ROG	0.654641729
2020	San Bernardino (SC)	T	RUNEX	15	ROG	0.429311691
2020	San Bernardino (SC)	T	RUNEX	20	ROG	0.289846784
2020	San Bernardino (SC)	T	RUNEX	25	ROG	0.214219916
2020	San Bernardino (SC)	T	RUNEX	30	ROG	0.163009177
2020	San Bernardino (SC)	T	RUNEX	35	ROG	0.125539426
2020	San Bernardino (SC)	T	RUNEX	40	ROG	0.098165457
2020	San Bernardino (SC)	T	RUNEX	45	ROG	0.078346757
2020	San Bernardino (SC)	T	RUNEX	50	ROG	0.064308049
2020	San Bernardino (SC)	T	RUNEX	55	ROG	0.054831677
2020	San Bernardino (SC)	T	RUNEX	60	ROG	0.052443197
2020	San Bernardino (SC)	T	RUNEX	65	ROG	0.055102607
2020	San Bernardino (SC)	T	RUNEX	5	SOx	0.023813776
2020	San Bernardino (SC)	T	RUNEX	10	SOx	0.021262606
2020	San Bernardino (SC)	T	RUNEX	15	SOx	0.017261822
2020	San Bernardino (SC)	T	RUNEX	20	SOx	0.014945968
2020	San Bernardino (SC)	T	RUNEX	25	SOx	0.013684646
2020	San Bernardino (SC)	T	RUNEX	30	SOx	0.012801631
2020	San Bernardino (SC)	T	RUNEX	35	SOx	0.012214888
2020	San Bernardino (SC)	T	RUNEX	40	SOx	0.011707624
2020	San Bernardino (SC)	T	RUNEX	45	SOx	0.011277807
2020	San Bernardino (SC)	T	RUNEX	50	SOx	0.011001446
2020	San Bernardino (SC)	T	RUNEX	55	SOx	0.01080912
2020	San Bernardino (SC)	T	RUNEX	60	SOx	0.010713051
2020	San Bernardino (SC)	T	RUNEX	65	SOx	0.010734304
2020	San Bernardino (SC)	T	RUNLOSS		ROG	5.409431832
2040	San Bernardino (SC)	NT	PMBW		PM10	0.037939055
2040	San Bernardino (SC)	NT	PMBW		PM2_5	0.016259595
2040	San Bernardino (SC)	NT	PMTW		PM10	0.007999748
2040	San Bernardino (SC)	NT	PMTW		PM2_5	0.001999937

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2040	San Bernardino (SC)	NT	RUNEX	5	CH4	0.027105577
2040	San Bernardino (SC)	NT	RUNEX	10	CH4	0.017903898
2040	San Bernardino (SC)	NT	RUNEX	15	CH4	0.011309775
2040	San Bernardino (SC)	NT	RUNEX	20	CH4	0.007405857
2040	San Bernardino (SC)	NT	RUNEX	25	CH4	0.005442135
2040	San Bernardino (SC)	NT	RUNEX	30	CH4	0.004282864
2040	San Bernardino (SC)	NT	RUNEX	35	CH4	0.003549452
2040	San Bernardino (SC)	NT	RUNEX	40	CH4	0.003095352
2040	San Bernardino (SC)	NT	RUNEX	45	CH4	0.002840222
2040	San Bernardino (SC)	NT	RUNEX	50	CH4	0.00274293
2040	San Bernardino (SC)	NT	RUNEX	55	CH4	0.002789056
2040	San Bernardino (SC)	NT	RUNEX	60	CH4	0.002993364
2040	San Bernardino (SC)	NT	RUNEX	65	CH4	0.003386747
2040	San Bernardino (SC)	NT	RUNEX	5	CO	0.759321423
2040	San Bernardino (SC)	NT	RUNEX	10	CO	0.660683679
2040	San Bernardino (SC)	NT	RUNEX	15	CO	0.573417279
2040	San Bernardino (SC)	NT	RUNEX	20	CO	0.507233382
2040	San Bernardino (SC)	NT	RUNEX	25	CO	0.459032734
2040	San Bernardino (SC)	NT	RUNEX	30	CO	0.419886071
2040	San Bernardino (SC)	NT	RUNEX	35	CO	0.386938668
2040	San Bernardino (SC)	NT	RUNEX	40	CO	0.359122761
2040	San Bernardino (SC)	NT	RUNEX	45	CO	0.335815701
2040	San Bernardino (SC)	NT	RUNEX	50	CO	0.316736342
2040	San Bernardino (SC)	NT	RUNEX	55	CO	0.301943036
2040	San Bernardino (SC)	NT	RUNEX	60	CO	0.292007584
2040	San Bernardino (SC)	NT	RUNEX	65	CO	0.288031999
2040	San Bernardino (SC)	NT	RUNEX	5	CO2	584.2797749
2040	San Bernardino (SC)	NT	RUNEX	10	CO2	435.4952422
2040	San Bernardino (SC)	NT	RUNEX	15	CO2	335.3718119
2040	San Bernardino (SC)	NT	RUNEX	20	CO2	267.8784798
2040	San Bernardino (SC)	NT	RUNEX	25	CO2	222.5804556
2040	San Bernardino (SC)	NT	RUNEX	30	CO2	191.9783029
2040	San Bernardino (SC)	NT	RUNEX	35	CO2	171.7608974
2040	San Bernardino (SC)	NT	RUNEX	40	CO2	159.3662482
2040	San Bernardino (SC)	NT	RUNEX	45	CO2	153.313877
2040	San Bernardino (SC)	NT	RUNEX	50	CO2	152.9640913
2040	San Bernardino (SC)	NT	RUNEX	55	CO2	158.3588135
2040	San Bernardino (SC)	NT	RUNEX	60	CO2	170.1020304
2040	San Bernardino (SC)	NT	RUNEX	65	CO2	189.5643539
2040	San Bernardino (SC)	NT	RUNEX	5	NOx	0.058758736
2040	San Bernardino (SC)	NT	RUNEX	10	NOx	0.049456942
2040	San Bernardino (SC)	NT	RUNEX	15	NOx	0.040149014
2040	San Bernardino (SC)	NT	RUNEX	20	NOx	0.033586364
2040	San Bernardino (SC)	NT	RUNEX	25	NOx	0.02929716

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2040	San Bernardino (SC)	NT	RUNEX	30	NOx	0.026626266
2040	San Bernardino (SC)	NT	RUNEX	35	NOx	0.024833146
2040	San Bernardino (SC)	NT	RUNEX	40	NOx	0.023645513
2040	San Bernardino (SC)	NT	RUNEX	45	NOx	0.022930146
2040	San Bernardino (SC)	NT	RUNEX	50	NOx	0.022617605
2040	San Bernardino (SC)	NT	RUNEX	55	NOx	0.022675271
2040	San Bernardino (SC)	NT	RUNEX	60	NOx	0.02312849
2040	San Bernardino (SC)	NT	RUNEX	65	NOx	0.023981927
2040	San Bernardino (SC)	NT	RUNEX	5	PM10	0.004893279
2040	San Bernardino (SC)	NT	RUNEX	10	PM10	0.00309451
2040	San Bernardino (SC)	NT	RUNEX	15	PM10	0.002061701
2040	San Bernardino (SC)	NT	RUNEX	20	PM10	0.001448443
2040	San Bernardino (SC)	NT	RUNEX	25	PM10	0.001073959
2040	San Bernardino (SC)	NT	RUNEX	30	PM10	0.000840086
2040	San Bernardino (SC)	NT	RUNEX	35	PM10	0.000692839
2040	San Bernardino (SC)	NT	RUNEX	40	PM10	0.000602266
2040	San Bernardino (SC)	NT	RUNEX	45	PM10	0.000551711
2040	San Bernardino (SC)	NT	RUNEX	50	PM10	0.000532558
2040	San Bernardino (SC)	NT	RUNEX	55	PM10	0.000541703
2040	San Bernardino (SC)	NT	RUNEX	60	PM10	0.000581038
2040	San Bernardino (SC)	NT	RUNEX	65	PM10	0.000657107
2040	San Bernardino (SC)	NT	RUNEX	5	PM2_5	0.004501957
2040	San Bernardino (SC)	NT	RUNEX	10	PM2_5	0.002847585
2040	San Bernardino (SC)	NT	RUNEX	15	PM2_5	0.001897449
2040	San Bernardino (SC)	NT	RUNEX	20	PM2_5	0.001333207
2040	San Bernardino (SC)	NT	RUNEX	25	PM2_5	0.00098865
2040	San Bernardino (SC)	NT	RUNEX	30	PM2_5	0.000773461
2040	San Bernardino (SC)	NT	RUNEX	35	PM2_5	0.000637965
2040	San Bernardino (SC)	NT	RUNEX	40	PM2_5	0.00055461
2040	San Bernardino (SC)	NT	RUNEX	45	PM2_5	0.000508076
2040	San Bernardino (SC)	NT	RUNEX	50	PM2_5	0.000490436
2040	San Bernardino (SC)	NT	RUNEX	55	PM2_5	0.000498834
2040	San Bernardino (SC)	NT	RUNEX	60	PM2_5	0.000535023
2040	San Bernardino (SC)	NT	RUNEX	65	PM2_5	0.000605018
2040	San Bernardino (SC)	NT	RUNEX	5	ROG	0.078163326
2040	San Bernardino (SC)	NT	RUNEX	10	ROG	0.050292423
2040	San Bernardino (SC)	NT	RUNEX	15	ROG	0.033814234
2040	San Bernardino (SC)	NT	RUNEX	20	ROG	0.023947601
2040	San Bernardino (SC)	NT	RUNEX	25	ROG	0.017965306
2040	San Bernardino (SC)	NT	RUNEX	30	ROG	0.014217355
2040	San Bernardino (SC)	NT	RUNEX	35	ROG	0.011851304
2040	San Bernardino (SC)	NT	RUNEX	40	ROG	0.010403786
2040	San Bernardino (SC)	NT	RUNEX	45	ROG	0.009617155
2040	San Bernardino (SC)	NT	RUNEX	50	ROG	0.009360579

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2040	San Bernardino (SC)	NT	RUNEX	55	ROG	0.009592555
2040	San Bernardino (SC)	NT	RUNEX	60	ROG	0.010353219
2040	San Bernardino (SC)	NT	RUNEX	65	ROG	0.011764904
2040	San Bernardino (SC)	NT	RUNEX	5	SOx	0.005824467
2040	San Bernardino (SC)	NT	RUNEX	10	SOx	0.0043394
2040	San Bernardino (SC)	NT	RUNEX	15	SOx	0.003341782
2040	San Bernardino (SC)	NT	RUNEX	20	SOx	0.002669651
2040	San Bernardino (SC)	NT	RUNEX	25	SOx	0.002218012
2040	San Bernardino (SC)	NT	RUNEX	30	SOx	0.001912654
2040	San Bernardino (SC)	NT	RUNEX	35	SOx	0.001710899
2040	San Bernardino (SC)	NT	RUNEX	40	SOx	0.001587181
2040	San Bernardino (SC)	NT	RUNEX	45	SOx	0.001526718
2040	San Bernardino (SC)	NT	RUNEX	50	SOx	0.001523114
2040	San Bernardino (SC)	NT	RUNEX	55	SOx	0.001576782
2040	San Bernardino (SC)	NT	RUNEX	60	SOx	0.001693759
2040	San Bernardino (SC)	NT	RUNEX	65	SOx	0.001887735
2040	San Bernardino (SC)	NT	RUNLOSS		ROG	0.726824725
2040	San Bernardino (SC)	T	PMBW		PM10	0.083655032
2040	San Bernardino (SC)	T	PMBW		PM2_5	0.035852156
2040	San Bernardino (SC)	T	PMTW		PM10	0.025642322
2040	San Bernardino (SC)	T	PMTW		PM2_5	0.006410581
2040	San Bernardino (SC)	T	RUNEX	5	CH4	0.154077075
2040	San Bernardino (SC)	T	RUNEX	10	CH4	0.123909324
2040	San Bernardino (SC)	T	RUNEX	15	CH4	0.086296951
2040	San Bernardino (SC)	T	RUNEX	20	CH4	0.061761533
2040	San Bernardino (SC)	T	RUNEX	25	CH4	0.045222042
2040	San Bernardino (SC)	T	RUNEX	30	CH4	0.03339982
2040	San Bernardino (SC)	T	RUNEX	35	CH4	0.024705288
2040	San Bernardino (SC)	T	RUNEX	40	CH4	0.018309123
2040	San Bernardino (SC)	T	RUNEX	45	CH4	0.013606272
2040	San Bernardino (SC)	T	RUNEX	50	CH4	0.010154181
2040	San Bernardino (SC)	T	RUNEX	55	CH4	0.007629193
2040	San Bernardino (SC)	T	RUNEX	60	CH4	0.006653042
2040	San Bernardino (SC)	T	RUNEX	65	CH4	0.006701254
2040	San Bernardino (SC)	T	RUNEX	5	CO	3.121157248
2040	San Bernardino (SC)	T	RUNEX	10	CO	2.521798601
2040	San Bernardino (SC)	T	RUNEX	15	CO	1.752680003
2040	San Bernardino (SC)	T	RUNEX	20	CO	1.252617131
2040	San Bernardino (SC)	T	RUNEX	25	CO	0.932470746
2040	San Bernardino (SC)	T	RUNEX	30	CO	0.706337713
2040	San Bernardino (SC)	T	RUNEX	35	CO	0.539248328
2040	San Bernardino (SC)	T	RUNEX	40	CO	0.415351589
2040	San Bernardino (SC)	T	RUNEX	45	CO	0.323245057
2040	San Bernardino (SC)	T	RUNEX	50	CO	0.254639982

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2040	San Bernardino (SC)	T	RUNEX	55	CO	0.203492081
2040	San Bernardino (SC)	T	RUNEX	60	CO	0.18147271
2040	San Bernardino (SC)	T	RUNEX	65	CO	0.178970702
2040	San Bernardino (SC)	T	RUNEX	5	CO2	2421.912394
2040	San Bernardino (SC)	T	RUNEX	10	CO2	2148.917028
2040	San Bernardino (SC)	T	RUNEX	15	CO2	1768.451259
2040	San Bernardino (SC)	T	RUNEX	20	CO2	1536.126085
2040	San Bernardino (SC)	T	RUNEX	25	CO2	1413.724588
2040	San Bernardino (SC)	T	RUNEX	30	CO2	1333.838452
2040	San Bernardino (SC)	T	RUNEX	35	CO2	1276.031943
2040	San Bernardino (SC)	T	RUNEX	40	CO2	1225.055267
2040	San Bernardino (SC)	T	RUNEX	45	CO2	1183.916517
2040	San Bernardino (SC)	T	RUNEX	50	CO2	1151.396138
2040	San Bernardino (SC)	T	RUNEX	55	CO2	1123.323045
2040	San Bernardino (SC)	T	RUNEX	60	CO2	1108.261099
2040	San Bernardino (SC)	T	RUNEX	65	CO2	1109.366908
2040	San Bernardino (SC)	T	RUNEX	5	NOx	13.13950025
2040	San Bernardino (SC)	T	RUNEX	10	NOx	9.971456771
2040	San Bernardino (SC)	T	RUNEX	15	NOx	5.978947723
2040	San Bernardino (SC)	T	RUNEX	20	NOx	3.349784324
2040	San Bernardino (SC)	T	RUNEX	25	NOx	1.817488696
2040	San Bernardino (SC)	T	RUNEX	30	NOx	1.13294662
2040	San Bernardino (SC)	T	RUNEX	35	NOx	0.76999016
2040	San Bernardino (SC)	T	RUNEX	40	NOx	0.557306022
2040	San Bernardino (SC)	T	RUNEX	45	NOx	0.423394962
2040	San Bernardino (SC)	T	RUNEX	50	NOx	0.334440011
2040	San Bernardino (SC)	T	RUNEX	55	NOx	0.2728886
2040	San Bernardino (SC)	T	RUNEX	60	NOx	0.249623177
2040	San Bernardino (SC)	T	RUNEX	65	NOx	0.250711549
2040	San Bernardino (SC)	T	RUNEX	5	PM10	0.01006747
2040	San Bernardino (SC)	T	RUNEX	10	PM10	0.008863552
2040	San Bernardino (SC)	T	RUNEX	15	PM10	0.007511135
2040	San Bernardino (SC)	T	RUNEX	20	PM10	0.006575946
2040	San Bernardino (SC)	T	RUNEX	25	PM10	0.00588477
2040	San Bernardino (SC)	T	RUNEX	30	PM10	0.005361844
2040	San Bernardino (SC)	T	RUNEX	35	PM10	0.004944971
2040	San Bernardino (SC)	T	RUNEX	40	PM10	0.004602055
2040	San Bernardino (SC)	T	RUNEX	45	PM10	0.004313975
2040	San Bernardino (SC)	T	RUNEX	50	PM10	0.004068842
2040	San Bernardino (SC)	T	RUNEX	55	PM10	0.003859259
2040	San Bernardino (SC)	T	RUNEX	60	PM10	0.003774496
2040	San Bernardino (SC)	T	RUNEX	65	PM10	0.003799091
2040	San Bernardino (SC)	T	RUNEX	5	PM2_5	0.0096132
2040	San Bernardino (SC)	T	RUNEX	10	PM2_5	0.008468317

**EMFAC2014 Emissions Factors Data**

calendar_year	sub_area	vehicle_class	process	speed_time	pollutant	emission_rate
2040	San Bernardino (SC)	T	RUNEX	15	PM2_5	0.007178373
2040	San Bernardino (SC)	T	RUNEX	20	PM2_5	0.006285989
2040	San Bernardino (SC)	T	RUNEX	25	PM2_5	0.005626145
2040	San Bernardino (SC)	T	RUNEX	30	PM2_5	0.005126735
2040	San Bernardino (SC)	T	RUNEX	35	PM2_5	0.004728457
2040	San Bernardino (SC)	T	RUNEX	40	PM2_5	0.00440072
2040	San Bernardino (SC)	T	RUNEX	45	PM2_5	0.004125294
2040	San Bernardino (SC)	T	RUNEX	50	PM2_5	0.003890836
2040	San Bernardino (SC)	T	RUNEX	55	PM2_5	0.003690283
2040	San Bernardino (SC)	T	RUNEX	60	PM2_5	0.003609036
2040	San Bernardino (SC)	T	RUNEX	65	PM2_5	0.003632278
2040	San Bernardino (SC)	T	RUNEX	5	ROG	0.459081455
2040	San Bernardino (SC)	T	RUNEX	10	ROG	0.365991443
2040	San Bernardino (SC)	T	RUNEX	15	ROG	0.24639673
2040	San Bernardino (SC)	T	RUNEX	20	ROG	0.169749034
2040	San Bernardino (SC)	T	RUNEX	25	ROG	0.123182591
2040	San Bernardino (SC)	T	RUNEX	30	ROG	0.091034491
2040	San Bernardino (SC)	T	RUNEX	35	ROG	0.067540676
2040	San Bernardino (SC)	T	RUNEX	40	ROG	0.050314641
2040	San Bernardino (SC)	T	RUNEX	45	ROG	0.037668074
2040	San Bernardino (SC)	T	RUNEX	50	ROG	0.028387158
2040	San Bernardino (SC)	T	RUNEX	55	ROG	0.021594095
2040	San Bernardino (SC)	T	RUNEX	60	ROG	0.018986878
2040	San Bernardino (SC)	T	RUNEX	65	ROG	0.019177727
2040	San Bernardino (SC)	T	RUNEX	5	SOx	0.022680062
2040	San Bernardino (SC)	T	RUNEX	10	SOx	0.020125752
2040	San Bernardino (SC)	T	RUNEX	15	SOx	0.016548822
2040	San Bernardino (SC)	T	RUNEX	20	SOx	0.014370324
2040	San Bernardino (SC)	T	RUNEX	25	SOx	0.013223881
2040	San Bernardino (SC)	T	RUNEX	30	SOx	0.012474881
2040	San Bernardino (SC)	T	RUNEX	35	SOx	0.011934844
2040	San Bernardino (SC)	T	RUNEX	40	SOx	0.011457763
2040	San Bernardino (SC)	T	RUNEX	45	SOx	0.011073006
2040	San Bernardino (SC)	T	RUNEX	50	SOx	0.010770214
2040	San Bernardino (SC)	T	RUNEX	55	SOx	0.010509236
2040	San Bernardino (SC)	T	RUNEX	60	SOx	0.010368614
2040	San Bernardino (SC)	T	RUNEX	65	SOx	0.010379419
2040	San Bernardino (SC)	T	RUNLOSS		ROG	1.441889915

**Bus VMT Emissions Worksheet**

	Annual Bus VMT		
	2016	2020	2040
Existing	9,207,000		
No Build		9,207,000	9,207,000
Alt A - With Haven		9,211,620	9,211,620
Alt B - With Haven		9,211,620	9,211,620

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EF (g/mi)

Year

2016	1.268	20.488	10.265	0.871	0.380	8.028	2142.240
2020	0.817	16.773	6.639	0.865	0.375	5.901	2082.439
2023	0.560	14.642	4.635	0.862	0.371	4.681	2045.287
2040	0.101	10.837	1.105	0.856	0.366	2.502	1963.559

lb/day

	ROG	CO	NOX	PM10	PM2_5	CH4	CO2	
Existing	2016	70.5	1139.4	570.8	48.4	21.2	446.4	119131.9
NB	2020	45.5	932.7	369.2	48.1	20.8	328.1	115806.3
B	2020	45.7	938.5	371.5	48.4	21.0	330.2	116525.5
NB	2040	5.6	602.7	61.4	47.6	20.3	139.1	109195.3
B	2040	5.7	606.4	61.8	47.9	20.5	140.0	109873.4

**EMFAC2014 sbX CNG Bus Emission Rate Calculations**

Emission Rate Summary

Year	ROG	CO	NOX	PM10	PM2_5	CH4	CO2
2016	1.268	20.488	10.265	0.871	0.380	8.028	2142.240
2020	0.817	16.773	6.639	0.865	0.375	5.901	2082.439
2023	0.560	14.642	4.635	0.862	0.371	4.681	2045.287
2040	0.101	10.837	1.105	0.856	0.366	2.502	1963.559

calendar_year	season_month	sub_area	vehicle_class	fuel	process	speed_time	pollutant	emission_rate	Emission Rate (g/mi)
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	CH4	11.11120467	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	CH4	4.944541376	8.027873021
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	CO	25.54115527	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	CO	15.43556016	20.48835771
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	CO2	2353.309279	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	CO2	1931.170141	2142.23971
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	NOx	11.6502687	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	NOx	8.879228866	10.26474878
2016	Annual	San Bernardino (SC)	UBUS	NG	PMBW		PM10	0.84182	
2016	Annual	San Bernardino (SC)	UBUS	NG	PMTW		PM10	0.012	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	PM10	0.021174574	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	PM10	0.013510041	0.871162307
2016	Annual	San Bernardino (SC)	UBUS	NG	PMBW		PM2_5	0.36078	
2016	Annual	San Bernardino (SC)	UBUS	NG	PMTW		PM2_5	0.003	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	PM2_5	0.020258571	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	PM2_5	0.012925602	0.380372087
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	ROG	1.745832511	
2016	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	ROG	0.789624344	1.267728428
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	CH4	8.208466248	
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	CH4	3.592986732	5.90072649
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	CO	21.65787791	
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	CO	11.88729864	16.77258828
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	CO2	2287.616408	
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	CO2	1877.261328	2082.438868
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	NOx	7.548229581	
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	NOx	5.728927745	6.638578663
2020	Annual	San Bernardino (SC)	UBUS	NG	PMBW		PM10	0.84182	
2020	Annual	San Bernardino (SC)	UBUS	NG	PMTW		PM10	0.012	
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15	PM10	0.013691817	
2020	Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20	PM10	0.008891354	0.865111585
2020	Annual	San Bernardino (SC)	UBUS	NG	PMBW		PM2_5	0.36078	
2020	Annual	San Bernardino (SC)	UBUS	NG	PMTW		PM2_5	0.003	



**EMFAC2014 sbX CNG Bus Emission Rate Calculations**

2020 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 PM2_5	0.013099515	
2020 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 PM2_5	0.008506718	0.374583116
2020 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 ROG	1.125838534	
2020 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 ROG	0.509000094	0.817419314
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 CH4	6.545912661	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 CH4	2.815857525	4.680885093
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 CO	19.41055791	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 CO	9.874181331	14.64236962
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 CO2	2246.804415	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 CO2	1843.770233	2045.287324
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 NOx	5.282506207	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 NOx	3.987179542	4.634842875
2023 Annual	San Bernardino (SC)	UBUS	NG	PMBW	PM10	0.84182	
2023 Annual	San Bernardino (SC)	UBUS	NG	PMTW	PM10	0.012	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 PM10	0.009601692	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 PM10	0.006330634	0.861786163
2023 Annual	San Bernardino (SC)	UBUS	NG	PMBW	PM2_5	0.36078	
2023 Annual	San Bernardino (SC)	UBUS	NG	PMTW	PM2_5	0.003	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 PM2_5	0.009186327	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 PM2_5	0.006056773	0.37140155
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 ROG	0.772022525	
2023 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 ROG	0.348235927	0.560129226
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 CH4	3.577293728	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 CH4	1.426240986	2.501767357
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 CO	15.38271819	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 CO	6.292047206	10.8373827
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 CO2	2157.023163	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 CO2	1770.094038	1963.5586
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 NOx	1.291492772	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 NOx	0.917948267	1.104720519
2040 Annual	San Bernardino (SC)	UBUS	NG	PMBW	PM10	0.84182	
2040 Annual	San Bernardino (SC)	UBUS	NG	PMTW	PM10	0.012	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 PM10	0.002426152	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 PM10	0.001813389	0.855939771
2040 Annual	San Bernardino (SC)	UBUS	NG	PMBW	PM2_5	0.36078	
2040 Annual	San Bernardino (SC)	UBUS	NG	PMTW	PM2_5	0.003	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 PM2_5	0.002321198	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 PM2_5	0.001734943	0.36580807
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	15 ROG	0.141095604	
2040 Annual	San Bernardino (SC)	UBUS	NG	RUNEX	20 ROG	0.061151704	0.101123654

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> WVC Project - Alternative A														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.84	8.01	6.91	1.41	0.41	1.00	0.60	0.39	0.21	0.01	1,262.33	0.19	0.01	1,270.63
Grading/Excavation	0.70	7.72	6.15	1.35	0.35	1.00	0.52	0.31	0.21	0.01	1,244.13	0.33	0.01	1,256.39
Drainage/Utilities/Sub-Grade	0.86	7.04	7.52	1.50	0.50	1.00	0.67	0.46	0.21	0.01	1,009.16	0.27	0.01	1,018.93
Paving	1.11	10.62	9.55	0.53	0.53	0.00	0.50	0.50	0.00	0.02	1,666.28	0.37	0.02	1,680.27
Maximum (pounds/day)	1.11	10.62	9.55	1.50	0.53	1.00	0.67	0.50	0.21	0.02	1,666.28	0.37	0.02	1,680.27
Total (tons/construction project)	0.11	1.05	0.95	0.17	0.06	0.11	0.08	0.05	0.02	0.00	161.97	0.04	0.00	163.45

Notes: Project Start Year -> 2021  
 Project Length (months) -> 12  
 Total Project Area (acres) -> 5  
 Maximum Area Disturbed/Day (acres) -> 0  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	20	0	1	0	100	10
Grading/Excavation	60	0	18	0	100	10
Drainage/Utilities/Sub-Grade	20	0	1	0	100	10
Paving	20	20	1	6	100	10

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> WVC Project - Alternative A														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.01	0.11	0.09	0.02	0.01	0.01	0.01	0.01	0.00	0.00	16.66	0.00	0.00	15.22
Grading/Excavation	0.04	0.41	0.32	0.07	0.02	0.05	0.03	0.02	0.01	0.00	65.69	0.02	0.00	60.18
Drainage/Utilities/Sub-Grade	0.04	0.33	0.35	0.07	0.02	0.05	0.03	0.02	0.01	0.00	46.62	0.01	0.00	42.71
Paving	0.02	0.21	0.19	0.01	0.01	0.00	0.01	0.01	0.00	0.00	32.99	0.01	0.00	30.18
Maximum (tons/phase)	0.04	0.41	0.35	0.07	0.02	0.05	0.03	0.02	0.01	0.00	65.69	0.02	0.00	60.18
Total (tons/construction project)	0.11	1.05	0.95	0.17	0.06	0.11	0.08	0.05	0.02	0.00	161.97	0.04	0.00	148.28


PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	WVC Project - Alternative A	
Construction Start Year	2021	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	33.50	miles
Total Project Area	4.90	acres
Maximum Area Disturbed/Day	0.10	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

[http://www.conservation.ca.gov/cgs/information/geologic\\_mapping/Pages/googlemaps.aspx#regionalseries](http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries)

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (ydf) (assume 20 if unknown)	Import Volume (ydf/day)	Export Volume (ydf/day)
Soil	Grubbing/Land Clearing	20.00		20.00
	Grading/Excavation	20.00		60.00
	Drainage/Utilities/Sub-Grade	20.00		20.00
	Paving	20.00		20.00
	Asphalt	Grubbing/Land Clearing		
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving	20.00	20.00	

#### Mitigation Options

On-road Fleet Emissions Mitigation: Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer

Off-road Equipment Emissions Mitigation: Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (<http://www.airquality.org/ceqa/mitigation.shtml>). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

	Months
Grubbing/Lan	1.20
Grading/Exca	4.80
Drainage/Utili	4.20
Paving	1.80

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.20		1/1/2021
Grading/Excavation		4.80		2/7/2021
Drainage/Utilities/Sub-Grade		4.20		7/3/2021
Paving		1.80		11/8/2021
<b>Totals (Months)</b>		12		

Program Calculated Activity	Frac start date	end date
Grubbing/Land Clearing	1/1/2021	2/8/2021
Grading/Excavation	2/7/2021	7/2/2021
Drainage/Utilities/Sub-Grade	7/3/2021	11/7/2021
Paving	11/8/2021	1/1/2022

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	1.00			1	1.00
Miles/round trip: Grading/Excavation	6.00			3	18.00
Miles/round trip: Drainage/Utilities/Sub-Grade	1.00			1	1.00
Miles/round trip: Paving	1.00			1	1.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Grading/Excavation (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Drainage/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.56
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>

Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	3.44	0.00	0.00	3.47
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.05
Pounds per day - Grading/Excavation	0.00	0.01	0.06	0.00	0.00	0.00	61.89	0.00	0.00	62.50
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	3.27	0.00	0.00	3.30
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	3.44	0.00	0.00	3.47
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.16
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	3.44	0.00	0.00	3.47
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.07
<b>Total tons per construction project</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.54</b>	<b>0.00</b>	<b>0.00</b>	<b>3.57</b>

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving		6.00			1	6.00					
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Grading/Excavation (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.58	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pounds per day - Paving	0.00	0.00	0.02	0.00	0.00	0.00	20.62	0.00	0.00	20.83	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.41	
<b>Total tons per construction project</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.41</b>	<b>0.00</b>	<b>0.00</b>	<b>0.41</b>	

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/ one-way trip	10										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	5			10	100.00						
No. of employees: Grading/Excavation	5			10	100.00						
No. of employees: Drainage/Utilities/Sub-Grade	5			10	100.00						
No. of employees: Paving	5			10	100.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Grading/Excavation (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Paving (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	359.66	0.01	0.00	361.10	
Grubbing/Land Clearing (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Grading/Excavation (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Draining/Utilities/Sub-Grade (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Paving (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.81	0.01	0.01	84.27	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.02	0.27	0.03	0.01	0.00	0.00	81.18	0.00	0.00	81.55	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.07	0.00	0.00	1.08	
Pounds per day - Grading/Excavation	0.02	0.27	0.03	0.01	0.00	0.00	81.18	0.00	0.00	81.55	
Tons per const. Period - Grading/Excavation	0.00	0.01	0.00	0.00	0.00	0.00	4.29	0.00	0.00	4.31	
Pounds per day - Drainage/Utilities/Sub-Grade	0.02	0.27	0.03	0.01	0.00	0.00	81.18	0.00	0.00	81.55	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	3.75	0.00	0.00	3.77	
Pounds per day - Paving	0.02	0.27	0.03	0.01	0.00	0.00	81.09	0.00	0.00	81.47	
Tons per const. Period - Paving	0.00	0.01	0.00	0.00	0.00	0.00	1.61	0.00	0.00	1.61	
Total tons per construction project	0.00	0.04	0.00	0.00	0.00	0.00	10.71	0.00	0.00	10.76	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
User Input											
Grubbing/Land Clearing - Exhaust	1			10.00						10.00	
Grading/Excavation - Exhaust	1			10.00						10.00	
Drainage/Utilities/Subgrade	1			10.00						10.00	
Paving	1			10.00						10.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Grading/Excavation (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.58	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.01	0.03	0.00	0.00	0.00	34.38	0.00	0.00	34.72	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.46	
Pounds per day - Grading/Excavation	0.00	0.01	0.03	0.00	0.00	0.00	34.38	0.00	0.00	34.72	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	1.82	0.00	0.00	1.83	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.01	0.03	0.00	0.00	0.00	34.38	0.00	0.00	34.72	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	1.59	0.00	0.00	1.60	
Pounds per day - Paving	0.00	0.01	0.03	0.00	0.00	0.00	34.37	0.00	0.00	34.71	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.68	0.00	0.00	0.69	
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	4.54	0.00	0.00	4.58	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10	PM10	PM2.5	PM2.5
					pounds/day	tons/period	pounds/day	tons/period
Fugitive Dust - Grubbing/Land Clearing	0.10				1.00	0.01	0.21	0.00
Fugitive Dust - Grading/Excavation	0.10				1.00	0.05	0.21	0.01
Fugitive Dust - Drainage/Utilities/Subgrade	0.10				1.00	0.05	0.21	0.01

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.38	3.67	3.04	0.17	0.17	0.01	592.67	0.03	0.00	594.85
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.13	1.17	1.18	0.08	0.08	0.00	148.03	0.05	0.00	149.63
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.19	2.28	1.52	0.11	0.10	0.00	304.00	0.10	0.00	307.27
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Weiders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing		pounds per day	0.82	7.73	6.85	0.40	0.38	0.01	1,143.33	0.19	0.01	1,150.88	
	Grubbing/Land Clearing		tons per phase	0.01	0.10	0.09	0.01	0.01	0.00	15.09	0.00	0.00	15.19	

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
				Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Excavators	0.24	3.38	2.22	0.11	0.10	0.01	516.02	0.17	0.00	521.59
1.00			Model Default Tier	Forklifts	0.13	1.17	1.18	0.08	0.08	0.00	148.03	0.05	0.00	149.63
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.19	2.28	1.92	0.11	0.10	0.00	304.00	0.10	0.00	307.27
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	0.67	7.43	6.03	0.33	0.31	0.01	1,066.68	0.32	0.01	1,077.62
	Grading/Excavation			tons per phase	0.04	0.39	0.32	0.02	0.02	0.00	56.32	0.02	0.00	56.90

Drainage/Utilities/Subgrade	Default	Mitigation Option	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)												Equipment Tier
Override of Default Number of Vehicles	Program-estimate		Equipment Tier	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Forklifts	0.13	1.17	1.18	0.08	0.08	0.00	148.03	0.05	0.00	149.63
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2.00			Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1.00			Model Default Tier	Tractors/Loaders/Backhoes	0.19	2.28	1.92	0.11	0.10	0.00	304.00	0.10	0.00	307.27
1.00			Model Default Tier	Trenchers	0.40	2.71	3.65	0.26	0.24	0.00	339.50	0.11	0.00	343.15
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade			pounds per day	0.83	6.76	7.46	0.49	0.45	0.01	890.16	0.27	0.01	899.18
	Drainage/Utilities/Sub-Grade			tons per phase	0.04	0.31	0.34	0.02	0.02	0.00	41.13	0.01	0.00	41.54



Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00		Model Default Tier	Air Compressors	0.29	2.42	2.03	0.12	0.12	0.00	375.26	0.03	0.00	376.75
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00		Model Default Tier	Cement and Mortar Mixers	0.06	0.31	0.37	0.01	0.01	0.00	50.52	0.01	0.00	50.77
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00		Model Default Tier	Pavers	0.24	2.81	2.50	0.12	0.11	0.00	441.07	0.14	0.00	445.82
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00		Model Default Tier	Rollers	0.19	1.90	1.94	0.12	0.11	0.00	257.27	0.08	0.00	260.04
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00		Model Default Tier	Signal Boards	0.11	0.60	0.72	0.03	0.03	0.00	98.63	0.01	0.00	99.13
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1.00		Model Default Tier	Tractors/Loaders/Backhoes	0.19	2.28	1.91	0.11	0.10	0.00	304.01	0.10	0.00	307.29
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab														
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	1.08	10.33	9.47	0.52	0.49	0.02	1,526.75	0.37	0.01	1,539.79
		Paving		tons per phase	0.02	0.20	0.19	0.01	0.01	0.00	30.23	0.01	0.00	30.49
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					0.11	1.01	0.94	0.06	0.05	0.00	142.77	0.04	0.00	144.12

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day	Horsepower	Load Factor	adju
Aerial Lifts		63		8	63.00		0.31
Air Compressors		78		8	78.00		0.48
Bore/Drill Rigs		206		8	206.00		0.50
Cement and Mortar Mixers		9		8	9.00		0.56
Concrete/Industrial Saws		81		8	81.00		0.73
Cranes		226		8	226.00		0.29
Crawler Tractors		208		8	208.00		0.43
Crushing/Proc. Equipment		85		8	85.00		0.78
Excavators		163		8	163.00		0.38
Forklifts		89		8	89.00		0.20
Generator Sets		84		8	84.00		0.74
Graders		175		8	175.00		0.41
Off-Highway Tractors		123		8	123.00		0.44
Off-Highway Trucks		400		8	400.00		0.38
Other Construction Equipment		172		8	172.00		0.42
Other General Industrial Equipment		88		8	88.00		0.34
Other Material Handling Equipment		167		8	167.00		0.40
Pavers		126		8	126.00		0.42

Paving Equipment		131		8	131.00	0.36
Plate Compactors		8		8	8.00	0.43
Pressure Washers		13		8	13.00	0.30
Pumps		84		8	84.00	0.74
Rollers		81		8	81.00	0.38
Rough Terrain Forklifts		100		8	100.00	0.40
Rubber Tired Dozers		255		8	255.00	0.40
Rubber Tired Loaders		200		8	200.00	0.36
Scrapers		362		8	362.00	0.48
Signal Boards		6		8	6.00	0.82
Skid Steer Loaders		65		8	65.00	0.37
Surfacing Equipment		254		8	254.00	0.30
Sweepers/Scrubbers		64		8	64.00	0.46
Tractors/Loaders/Backhoes		98		8	98.00	0.37
Trenchers		81		8	81.00	0.50
Welders		46		8	46.00	0.45

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> WVC Project - Alternative A														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.53	24.02	20.74	4.23	1.23	3.00	1.79	1.16	0.62	0.04	3,786.98	0.58	0.04	3,811.89
Grading/Excavation	2.10	23.16	18.45	4.05	1.05	3.00	1.57	0.94	0.62	0.04	3,732.40	0.98	0.04	3,769.17
Drainage/Utilities/Sub-Grade	2.57	21.11	22.56	4.51	1.51	3.00	2.00	1.37	0.62	0.03	3,027.47	0.80	0.03	3,056.78
Paving	3.33	31.85	28.64	1.60	1.60	0.00	1.49	1.49	0.00	0.05	4,998.85	1.10	0.05	5,040.82
Maximum (pounds/day)	3.33	31.85	28.64	4.51	1.60	3.00	2.00	1.49	0.62	0.05	4,998.85	1.10	0.05	5,040.82
Total (tons/construction project)	0.33	3.15	2.86	0.51	0.17	0.34	0.23	0.16	0.07	0.01	485.90	0.12	0.01	490.36

Notes: Project Start Year -> 2021  
 Project Length (months) -> 12  
 Total Project Area (acres) -> 5  
 Maximum Area Disturbed/Day (acres) -> 0  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	60	0	3	0	300	30
Grading/Excavation	180	0	54	0	300	30
Drainage/Utilities/Sub-Grade	60	0	3	0	300	30
Paving	60	60	3	18	300	30

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> WVC Project - Alternative A														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.32	0.27	0.06	0.02	0.04	0.02	0.02	0.01	0.00	49.99	0.01	0.00	45.65
Grading/Excavation	0.11	1.22	0.97	0.21	0.06	0.16	0.08	0.05	0.03	0.00	197.07	0.05	0.00	180.54
Drainage/Utilities/Sub-Grade	0.12	0.98	1.04	0.21	0.07	0.14	0.09	0.06	0.03	0.00	139.87	0.04	0.00	128.12
Paving	0.07	0.63	0.57	0.03	0.03	0.00	0.03	0.03	0.00	0.00	98.98	0.02	0.00	90.55
Maximum (tons/phase)	0.12	1.22	1.04	0.21	0.07	0.16	0.09	0.06	0.03	0.00	197.07	0.05	0.00	180.54
Total (tons/construction project)	0.33	3.15	2.86	0.51	0.17	0.34	0.23	0.16	0.07	0.01	485.90	0.12	0.01	444.85

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.


**Road Construction Emissions Model**  
**Data Entry Worksheet**

**Version 8.1.0**

Note: Required data input sections have a yellow background. Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background. The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types. Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	WVC Project - Alternative A	
Construction Start Year	2021	Enter a Year between 2014 and 2025 (inclusive)
Project Type	4	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	33.50	miles
Total Project Area	4.90	acres
Maximum Area Disturbed/Day	0.30	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

**Material Hauling Quantity Input**

Material Type	Phase	Haul Truck Capacity (ydf) (assume 20 if unknown)	Import Volume (ydf/day)	Export Volume (ydf/day)
Soil	Grubbing/Land Clearing	20.00		60.00
	Grading/Excavation	20.00		180.00
	Drainage/Utilities/Sub-Grade	20.00		60.00
	Paving	20.00		60.00
	Asphalt	Grubbing/Land Clearing		
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving	20.00	60.00	

**Mitigation Options**

On-road Fleet Emissions Mitigation	
Off-road Equipment Emissions Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that require modification when 'Other Project Type' is selected.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

	Months
Grubbing/Lan	1.20
Grading/Exca	4.80
Drainage/Utili	4.20
Paving	1.80

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblin below) can be used to determine soil type outside Sacramento County.

<http://www.conservation.ca.gov/cgs/information/geologic/mapping/Pages/googlemaps.aspx#regionalseries>

Program Calculated Activity	
start date	end date
1/1/2021	2/8/2021
2/7/2021	7/2/2021
7/3/2021	11/7/2021
11/8/2021	1/1/2022

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.20		1/1/2021
Grading/Excavation		4.80		2/7/2021
Drainage/Utilities/Sub-Grade		4.20		7/3/2021
Paving		1.80		11/8/2021
<b>Totals (Months)</b>		12		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
<b>User Input</b>						
Miles/round trip: Grubbing/Land Clearing		1.00			3	3.00
Miles/round trip: Grading/Excavation		6.00			9	54.00
Miles/round trip: Drainage/Utilities/Sub-Grade		1.00			3	3.00
Miles/round trip: Paving		1.00			3	3.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Grading/Excavation (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Drainage/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.56
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>

Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	10.31	0.00	0.00	10.42
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.14
Pounds per day - Grading/Excavation	0.01	0.04	0.17	0.01	0.00	0.00	185.67	0.00	0.01	187.50
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	9.80	0.00	0.00	9.90
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	10.31	0.00	0.00	10.42
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.00	0.00	0.48
Pounds per day - Paving	0.00	0.00	0.01	0.00	0.00	0.00	10.31	0.00	0.00	10.41
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.21
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	10.62	0.00	0.00	10.72

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing					0	0.00					
Miles/round trip: Grading/Excavation					0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade					0	0.00					
Miles/round trip: Paving		6.00			3	18.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Grading/Excavation (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Draining/Utilities/Sub-Grade (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Paving (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.58
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.00	0.01	0.06	0.00	0.00	0.00	61.87	0.00	0.00	62.48
Tons per const. Period - Paving		0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.00	0.00	1.24
Total tons per construction project		0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.00	0.00	1.24

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker Commute Default Values		Default Values							
User Input				Calculated Daily Trips	Calculated Daily VMT						
Miles/ one-way trip	10										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	15			30	300.00						
No. of employees: Grading/Excavation	15			30	300.00						
No. of employees: Drainage/Utilities/Sub-Grade	15			30	300.00						
No. of employees: Paving	15			30	300.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Grading/Excavation (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Paving (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	359.66	0.01	0.00	361.10	
Grubbing/Land Clearing (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Grading/Excavation (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Draining/Utilities/Sub-Grade (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Paving (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.81	0.01	0.01	84.27	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.07	0.81	0.08	0.03	0.01	0.00	243.54	0.01	0.00	244.66	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.01	0.00	0.00	0.00	0.00	3.21	0.00	0.00	3.23	
Pounds per day - Grading/Excavation	0.07	0.81	0.08	0.03	0.01	0.00	243.54	0.01	0.00	244.66	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	12.86	0.00	0.00	12.92	
Pounds per day - Drainage/Utilities/Sub-Grade	0.07	0.81	0.08	0.03	0.01	0.00	243.54	0.01	0.00	244.66	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.04	0.00	0.00	0.00	0.00	11.25	0.00	0.00	11.30	
Pounds per day - Paving	0.07	0.80	0.08	0.03	0.01	0.00	243.28	0.01	0.00	244.40	
Tons per const. Period - Paving	0.00	0.02	0.00	0.00	0.00	0.00	4.82	0.00	0.00	4.84	
Total tons per construction project	0.01	0.11	0.01	0.00	0.00	0.00	32.14	0.00	0.00	32.29	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of Default # Water Trucks		Program Estimate of Number of Water Trucks		User Override of Truck Miles Traveled/Vehicle/Day		Default Values Miles Traveled/Vehicle/Day		Calculated Daily VMT	
User Input											
Grubbing/Land Clearing - Exhaust	3			10.00						30.00	
Grading/Excavation - Exhaust	3			10.00						30.00	
Drainage/Utilities/Subgrade	3			10.00						30.00	
Paving	3			10.00						30.00	
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Grading/Excavation (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.22	0.00	0.05	1,574.58	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.00	0.02	0.09	0.01	0.00	0.00	103.15	0.00	0.00	104.16	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	1.37	
Pounds per day - Grading/Excavation	0.00	0.02	0.09	0.01	0.00	0.00	103.15	0.00	0.00	104.16	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	5.45	0.00	0.00	5.50	
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.02	0.09	0.01	0.00	0.00	103.15	0.00	0.00	104.16	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	4.77	0.00	0.00	4.81	
Pounds per day - Paving	0.00	0.02	0.09	0.01	0.00	0.00	103.12	0.00	0.00	104.14	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	2.04	0.00	0.00	2.06	
Total tons per construction project	0.00	0.00	0.01	0.00	0.00	0.00	13.62	0.00	0.00	13.75	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max Acreage Disturbed/Day		Default Maximum Acreage/Day		PM10	PM10	PM2.5	PM2.5
					pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing	0.30				3.00	0.04	0.62	0.01
Fugitive Dust - Grading/Excavation	0.30				3.00	0.16	0.62	0.03
Fugitive Dust - Drainage/Utilities/Subgrade	0.30				3.00	0.14	0.62	0.03

Values in cells D183 through D216, D234 through D267, D285 through D318, and D336 through D369 are required when 'Other Project Type' is selected.

Off-Road Equipment Emissions																
Grubbing/Land Clearing			Default Number of Vehicles	Mitigation Option	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
Override of Default Number of Vehicles			Program-estimate	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
					Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.00					Model Default Tier	Concrete/Industrial Saws	1.15	11.02	9.11	0.52	0.52	0.02	1,778.00	0.10	0.01	1,784.56
					Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.00					Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Forklifts	0.39	3.50	3.54	0.25	0.23	0.00	444.09	0.14	0.00	448.88
					Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.00					Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
					Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.00					Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Tractors/Loaders/Backhoes	0.57	6.85	5.75	0.34	0.31	0.01	912.01	0.29	0.01	921.82
					Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
					Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
User-Defined Off-road Equipment						If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab										
Number of Vehicles			Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e		
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
0.00			N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
				Grubbing/Land Clearing		2.45	23.18	20.55	1.19	1.15	0.04	3,429.98	0.57	0.03	3,452.65	
				Grubbing/Land Clearing	tons per phase	0.03	0.31	0.27	0.02	0.02	0.00	45.28	0.01	0.00	45.58	

Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
		Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00		Model Default Tier	Excavators	0.71	10.13	6.66	0.32	0.30	0.02	1,548.06	0.50	0.01	1,564.76
	3.00		Model Default Tier	Forklifts	0.39	3.50	3.54	0.25	0.23	0.00	444.09	0.14	0.00	448.88
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6.00		Model Default Tier	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00		Model Default Tier	Tractors/Loaders/Backhoes	0.57	6.85	5.75	0.34	0.31	0.01	912.01	0.29	0.01	921.82
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grading/Excavation			pounds per day	2.01	22.29	18.10	1.00	0.92	0.03	3,200.05	0.97	0.03	3,232.85
	Grading/Excavation			tons per phase	0.11	1.18	0.96	0.05	0.05	0.00	168.96	0.05	0.00	170.69



Drainage/Utilities/Subgrade	Default	Mitigation Option	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)												Equipment Tier
Override of Default Number of Vehicles	Program-estimate			pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.00			Model Default Tier	Forklifts	0.39	3.50	3.54	0.25	0.23	0.00	444.09	0.14	0.00	448.88
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.00			Model Default Tier	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3.00			Model Default Tier	Tractors/Loaders/Backhoes	0.57	6.85	5.75	0.34	0.31	0.01	912.01	0.29	0.01	921.82
3.00			Model Default Tier	Trenchers	1.19	8.12	10.94	0.79	0.73	0.01	1,018.49	0.33	0.01	1,029.45
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Drainage/Utilities/Sub-Grade			pounds per day	2.49	20.28	22.38	1.47	1.36	0.03	2,670.47	0.80	0.02	2,697.55
	Drainage/Utilities/Sub-Grade			tons per phase	0.12	0.94	1.03	0.07	0.06	0.00	123.38	0.04	0.00	124.63

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type										
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00		Model Default Tier	Air Compressors	0.87	7.27	6.09	0.37	0.37	0.01	1,125.79	0.08	0.01	1,130.24
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00		Model Default Tier	Cement and Mortar Mixers	0.18	0.93	1.10	0.04	0.04	0.00	151.55	0.02	0.00	152.32
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00		Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.71	8.44	7.50	0.36	0.33	0.01	1,323.20	0.43	0.01	1,337.46
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00		Model Default Tier	Rollers	0.57	5.71	5.83	0.36	0.33	0.01	771.80	0.25	0.01	780.11
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6.00		Model Default Tier	Signal Boards	0.34	1.81	2.16	0.08	0.08	0.00	295.88	0.03	0.00	297.39
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3.00		Model Default Tier	Tractors/Loaders/Backhoes	0.57	6.85	5.72	0.34	0.31	0.01	912.04	0.29	0.01	921.86
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab													
	Number of Vehicles		Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	3.25	31.00	28.40	1.56	1.47	0.05	4,580.26	1.10	0.04	4,619.38
		Paving		tons per phase	0.06	0.61	0.56	0.03	0.03	0.00	90.69	0.02	0.00	91.46
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					0.32	3.03	2.82	0.17	0.16	0.00	428.30	0.12	0.00	432.36

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day	Horsepower Load Factor adju	
					Horsepower	Load Factor adju
Aerial Lifts		63		8	63.00	0.31
Air Compressors		78		8	78.00	0.48
Bore/Drill Rigs		206		8	206.00	0.50
Cement and Mortar Mixers		9		8	9.00	0.56
Concrete/Industrial Saws		81		8	81.00	0.73
Cranes		226		8	226.00	0.29
Crawler Tractors		208		8	208.00	0.43
Crushing/Proc. Equipment		85		8	85.00	0.78
Excavators		163		8	163.00	0.38
Forklifts		89		8	89.00	0.20
Generator Sets		84		8	84.00	0.74
Graders		175		8	175.00	0.41
Off-Highway Tractors		123		8	123.00	0.44
Off-Highway Trucks		400		8	400.00	0.38
Other Construction Equipment		172		8	172.00	0.42
Other General Industrial Equipment		88		8	88.00	0.34
Other Material Handling Equipment		167		8	167.00	0.40
Pavers		126		8	126.00	0.42

Paving Equipment		131		8	131.00	0.36
Plate Compactors		8		8	8.00	0.43
Pressure Washers		13		8	13.00	0.30
Pumps		84		8	84.00	0.74
Rollers		81		8	81.00	0.38
Rough Terrain Forklifts		100		8	100.00	0.40
Rubber Tired Dozers		255		8	255.00	0.40
Rubber Tired Loaders		200		8	200.00	0.36
Scrapers		362		8	362.00	0.48
Signal Boards		6		8	6.00	0.82
Skid Steer Loaders		65		8	65.00	0.37
Surfacing Equipment		254		8	254.00	0.30
Sweepers/Scrubbers		64		8	64.00	0.46
Tractors/Loaders/Backhoes		98		8	98.00	0.37
Trenchers		81		8	81.00	0.50
Welders		46		8	46.00	0.45

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> WVC Project - Alternative B														
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	5.20	46.65	49.55	28.48	2.48	26.00	7.51	2.10	5.41	0.09	8,835.90	1.83	0.10	8,910.34
Grading/Excavation	6.71	57.29	64.46	29.48	3.48	26.00	8.39	2.98	5.41	0.12	12,021.39	2.61	0.14	12,127.36
Drainage/Utilities/Sub-Grade	6.60	65.34	55.65	29.43	3.43	26.00	8.44	3.03	5.41	0.12	11,505.08	1.75	0.11	11,582.46
Paving	5.17	54.92	41.85	2.63	2.63	0.00	2.27	2.27	0.00	0.11	10,084.00	1.75	0.11	10,159.49
<b>Maximum (pounds/day)</b>	<b>6.71</b>	<b>65.34</b>	<b>64.46</b>	<b>29.48</b>	<b>3.48</b>	<b>26.00</b>	<b>8.44</b>	<b>3.03</b>	<b>5.41</b>	<b>0.12</b>	<b>12,021.39</b>	<b>2.61</b>	<b>0.14</b>	<b>12,127.36</b>
<b>Total (tons/construction project)</b>	<b>1.66</b>	<b>15.49</b>	<b>14.92</b>	<b>6.69</b>	<b>0.85</b>	<b>5.83</b>	<b>1.95</b>	<b>0.74</b>	<b>1.21</b>	<b>0.03</b>	<b>2,965.12</b>	<b>0.55</b>	<b>0.03</b>	<b>2,988.42</b>

Notes: Project Start Year -> 2020  
 Project Length (months) -> 24  
 Total Project Area (acres) -> 58  
 Maximum Area Disturbed/Day (acres) -> 3  
 Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd <sup>3</sup> /day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	20	0	2	0	3,520	40
Grading/Excavation	320	0	112	0	4,120	40
Drainage/Utilities/Sub-Grade	20	0	2	0	3,880	40
Paving	0	100	0	50	3,720	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> WVC Project - Alternative B														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.14	1.23	1.31	0.75	0.07	0.69	0.20	0.06	0.14	0.00	233.27	0.05	0.00	213.40
Grading/Excavation	0.71	6.05	6.81	3.11	0.37	2.75	0.89	0.31	0.57	0.01	1,269.46	0.28	0.01	1,161.80
Drainage/Utilities/Sub-Grade	0.61	6.04	5.14	2.72	0.32	2.40	0.78	0.28	0.50	0.01	1,063.07	0.16	0.01	970.90
Paving	0.20	2.17	1.66	0.10	0.10	0.00	0.09	0.09	0.00	0.00	399.33	0.07	0.00	364.98
<b>Maximum (tons/phase)</b>	<b>0.71</b>	<b>6.05</b>	<b>6.81</b>	<b>3.11</b>	<b>0.37</b>	<b>2.75</b>	<b>0.89</b>	<b>0.31</b>	<b>0.57</b>	<b>0.01</b>	<b>1,269.46</b>	<b>0.28</b>	<b>0.01</b>	<b>1,161.80</b>
<b>Total (tons/construction project)</b>	<b>1.66</b>	<b>15.49</b>	<b>14.92</b>	<b>6.69</b>	<b>0.85</b>	<b>5.83</b>	<b>1.95</b>	<b>0.74</b>	<b>1.21</b>	<b>0.03</b>	<b>2,965.12</b>	<b>0.55</b>	<b>0.03</b>	<b>2,711.07</b>


PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.  
 Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.  
 CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1, 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.  
 The CO2e emissions are reported as metric tons per phase.

### Road Construction Emissions Model Data Entry Worksheet

**Note:** Required data input sections have a yellow background.  
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.  
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.  
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

**Input Type**

Project Name	WVC Project - Alternative B	
Construction Start Year	2020	Enter a Year between 2014 and 2025 (inclusive)
Project Type	2	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	24.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	33.50	miles
Total Project Area	58.22	acres
Maximum Area Disturbed/Day	2.60	acres
Water Trucks Used?	1	1. Yes 2. No



To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

<http://www.conservation.ca.gov/cgs/information/geologic/mapping/Pages/googlemaps.aspx#regionalseries>

#### Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (ydf) (assume 20 if unknown)	Import Volume (ydf/day)	Export Volume (ydf/day)
Soil	Grubbing/Land Clearing	20.00		20.00
	Grading/Excavation	20.00		320.00
	Drainage/Utilities/Sub-Grade	20.00		20.00
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving	20.00	100.00	

#### Mitigation Options

On-road Fleet Emissions Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure ( <a href="http://www.airquality.org/ceqa/mitigation.shtml">http://www.airquality.org/ceqa/mitigation.shtml</a> ). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

	Months
Grubbing/Land	2.40
Grading/Exca	9.60
Drainage/Utili	8.40
Paving	3.60

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		2.40		1/1/2020
Grading/Excavation		9.60		3/14/2020
Drainage/Utilities/Sub-Grade		8.40		12/31/2020
Paving		3.60		9/13/2021
<b>Totals (Months)</b>		24		

Program Calculated Activity	Frac start date	end date
1/1/2020	3/13/2020	
3/14/2020	12/30/2020	
12/31/2020	9/12/2021	
9/13/2021	12/31/2021	

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing	2.00	30.00		1	2.00
Miles/round trip: Grading/Excavation	7.00	30.00		16	112.00
Miles/round trip: Drainage/Utilities/Sub-Grade	2.00	30.00		1	2.00
Miles/round trip: Paving	2.00	30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.46	0.10	0.04	0.01	1,571.31	0.00	0.05	1,586.79
Grading/Excavation (grams/mile)	0.07	0.37	1.46	0.10	0.04	0.01	1,571.31	0.00	0.05	1,586.79
Drainage/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
<b>Hauling Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>

Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	6.93	0.00	0.00	7.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.18
Pounds per day - Grading/Excavation	0.02	0.09	0.36	0.03	0.01	0.00	387.98	0.00	0.01	391.81
Tons per const. Period - Grading/Excavation	0.00	0.01	0.04	0.00	0.00	0.00	40.97	0.00	0.00	41.37
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	6.88	0.00	0.00	6.94
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.64
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.04	0.00	0.00	0.00	41.79	0.00	0.00	42.20

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions		User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT					
<b>User Input</b>											
Miles/round trip: Grubbing/Land Clearing		30.00			0	0.00					
Miles/round trip: Grading/Excavation		30.00			0	0.00					
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00			0	0.00					
Miles/round trip: Paving		10.00	30.00		5	50.00					
<b>Emission Rates</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Grubbing/Land Clearing (grams/mile)		0.07	0.37	1.46	0.10	0.04	0.01	1,571.31	0.00	0.05	1,586.79
Grading/Excavation (grams/mile)		0.07	0.37	1.46	0.10	0.04	0.01	1,571.31	0.00	0.05	1,586.79
Draining/Utilities/Sub-Grade (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
Paving (grams/mile)		0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93
<b>Emissions</b>		<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>
Pounds per day - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving		0.01	0.04	0.16	0.01	0.00	0.00	171.91	0.00	0.01	173.61
Tons per const. Period - Paving		0.00	0.00	0.01	0.00	0.00	0.00	6.81	0.00	0.00	6.87
Total tons per construction project		0.00	0.00	0.01	0.00	0.00	0.00	6.81	0.00	0.00	6.87

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions		User Override of Worker		Default Values							
User Input	Commuter Default Values	Commuter Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT						
Miles/ one-way trip	20										
One-way trips/day	2										
No. of employees: Grubbing/Land Clearing	88			176	3,520.00						
No. of employees: Grading/Excavation	103			206	4,120.00						
No. of employees: Drainage/Utilities/Sub-Grade	97			194	3,880.00						
No. of employees: Paving	93			186	3,720.00						
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.02	1.08	0.11	0.05	0.02	0.00	371.46	0.01	0.00	373.08	
Grading/Excavation (grams/mile)	0.02	1.08	0.11	0.05	0.02	0.00	371.46	0.01	0.00	373.08	
Draining/Utilities/Sub-Grade (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Paving (grams/mile)	0.02	0.99	0.10	0.05	0.02	0.00	360.03	0.01	0.00	361.48	
Grubbing/Land Clearing (grams/trip)	1.00	2.55	0.20	0.00	0.00	0.00	84.03	0.01	0.01	86.84	
Grading/Excavation (grams/trip)	1.00	2.55	0.20	0.00	0.00	0.00	84.03	0.01	0.01	86.84	
Draining/Utilities/Sub-Grade (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
Paving (grams/trip)	0.93	2.28	0.18	0.00	0.00	0.00	81.88	0.01	0.01	84.35	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.55	9.34	0.96	0.36	0.15	0.03	2,915.27	0.07	0.04	2,928.89	
Tons per const. Period - Grubbing/Land Clearing	0.01	0.25	0.03	0.01	0.00	0.00	76.96	0.00	0.00	77.32	
Pounds per day - Grading/Excavation	0.64	10.93	1.12	0.43	0.18	0.03	3,412.19	0.08	0.05	3,428.13	
Tons per const. Period - Grading/Excavation	0.07	1.15	0.12	0.04	0.02	0.00	360.33	0.01	0.00	362.01	
Pounds per day - Drainage/Utilities/Sub-Grade	0.56	9.45	0.94	0.40	0.17	0.03	3,114.71	0.07	0.04	3,128.17	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.05	0.87	0.09	0.04	0.02	0.00	287.80	0.01	0.00	289.04	
Pounds per day - Paving	0.54	9.06	0.91	0.38	0.16	0.03	2,986.27	0.07	0.04	2,999.17	
Tons per const. Period - Paving	0.02	0.36	0.04	0.02	0.01	0.00	118.26	0.00	0.00	118.77	
Total tons per construction project	0.16	2.63	0.27	0.11	0.04	0.01	843.35	0.02	0.01	847.14	

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions		User Override of		Program Estimate of		User Override of Truck		Default Values		Calculated	
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT			
Grubbing/Land Clearing - Exhaust	2	1	20.00	40.00	40.00	40.00	40.00				
Grading/Excavation - Exhaust	2	1	20.00	40.00	40.00	40.00	40.00				
Drainage/Utilities/Subgrade	2	1	20.00	40.00	40.00	40.00	40.00				
Paving	2	1	20.00	40.00	40.00	40.00	40.00				
<b>Emission Rates</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Grubbing/Land Clearing (grams/mile)	0.07	0.37	1.46	0.10	0.04	0.01	1,571.31	0.00	0.05	1,586.79	
Grading/Excavation (grams/mile)	0.07	0.37	1.46	0.10	0.04	0.01	1,571.31	0.00	0.05	1,586.79	
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
Paving (grams/mile)	0.07	0.37	1.43	0.10	0.04	0.01	1,559.57	0.00	0.05	1,574.93	
<b>Emissions</b>	<b>ROG</b>	<b>CO</b>	<b>NOx</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SOx</b>	<b>CO2</b>	<b>CH4</b>	<b>N2O</b>	<b>CO2e</b>	
Pounds per day - Grubbing/Land Clearing	0.01	0.03	0.13	0.01	0.00	0.00	138.57	0.00	0.00	139.93	
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	3.66	0.00	0.00	3.69	
Pounds per day - Grading/Excavation	0.01	0.03	0.13	0.01	0.00	0.00	138.57	0.00	0.00	139.93	
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	14.63	0.00	0.00	14.78	
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.03	0.13	0.01	0.00	0.00	137.53	0.00	0.00	138.89	
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	12.71	0.00	0.00	12.83	
Pounds per day - Paving	0.01	0.03	0.13	0.01	0.00	0.00	137.53	0.00	0.00	138.89	
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	5.45	0.00	0.00	5.50	
Total tons per construction project	0.00	0.01	0.03	0.00	0.00	0.00	36.44	0.00	0.00	36.80	

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max		Default	PM10		PM2.5	
	Acreage Disturbed/Day	Maximum Acreage/Day		pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		2.60		26.00	0.69	5.41	0.14
Fugitive Dust - Grading/Excavation		2.60		26.00	2.75	5.41	0.57
Fugitive Dust - Drainage/Utilities/Subgrade		2.60		26.00	2.40	5.41	0.50

Off-Road Equipment Emissions														
Grubbing/Land Clearing	Default	Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of	Default											
	Override of Default Number of Vehicles	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Crawler Tractors	1.14	4.91	14.61	0.55	0.51	0.02	1,492.08	0.48	0.01	1,508.17
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	2		Model Default Tier	Excavators	1.01	13.48	9.96	0.48	0.44	0.02	2,063.78	0.67	0.02	2,086.03
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00			Model Default Tier	Rubber Tired Dozers	1.92	15.87	20.30	0.93	0.86	0.02	1,726.14	0.56	0.02	1,744.68
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	67		Model Default Tier	Signal Boards	0.57	3.01	3.59	0.14	0.14	0.01	493.14	0.05	0.00	495.64
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Weiders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>														
If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab					ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing		pounds per day	4.65	37.27	48.46	2.11	1.95	0.06	5,775.14	1.76	0.05	5,834.53	
	Grubbing/Land Clearing		tons per phase	0.12	0.98	1.28	0.06	0.05	0.00	152.46	0.05	0.00	154.03	



Grading/Excavation	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles		Override of	Default											
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier											
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		0	Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00	1	Model Default Tier	Crawler Tractors	1.14	4.91	14.61	0.55	0.51	0.02	1,492.08	0.48	0.01	1,508.17	
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4.00	3	Model Default Tier	Excavators	1.01	13.48	9.96	0.48	0.44	0.02	2,063.78	0.67	0.02	2,086.03	
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		2	Model Default Tier	Graders	1.43	9.16	14.00	0.78	0.72	0.01	1,209.88	0.39	0.01	1,222.88	
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		2	Model Default Tier	Rollers	0.42	3.83	4.21	0.27	0.25	0.01	514.48	0.17	0.00	520.03	
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00	1	Model Default Tier	Rubber Tired Loaders	0.74	3.22	8.69	0.29	0.27	0.01	1,192.43	0.39	0.01	1,205.31	
	0.00	2	Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	8.00	67	Model Default Tier	Signal Boards	0.46	2.41	2.88	0.11	0.11	0.01	394.51	0.04	0.00	396.52	
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
		4	Model Default Tier	Tractors/Loaders/Backhoes	0.85	9.21	8.51	0.54	0.49	0.01	1,215.48	0.39	0.01	1,228.57	
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
				Grading/Excavation	pounds per day	6.05	46.23	62.85	3.02	2.79	0.08	8,082.65	2.53	0.07	8,167.50
				Grading/Excavation	tons per phase	0.64	4.88	6.64	0.32	0.29	0.01	853.53	0.27	0.01	862.49

Drainage/Utilities/Subgrade	Default	Mitigation Option	Default	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)												Equipment Tier
	Override of Default Number of Vehicles	Program-estimate												
	2.00	1	Model Default Tier	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Air Compressors	0.58	4.85	4.07	0.25	0.25	0.01	750.53	0.05	0.01	753.50	
			Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00	1	Generator Sets	0.71	7.37	6.33	0.34	0.34	0.01	1,246.07	0.06	0.01	1,250.45	
	2.00	1	Graders	1.28	9.01	12.25	0.68	0.63	0.01	1,211.11	0.39	0.01	1,224.13	
			Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00	1	Plate Compactors	0.08	0.42	0.50	0.02	0.02	0.00	68.96	0.01	0.00	69.31	
			Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2.00	1	Pumps	0.76	7.48	6.42	0.36	0.36	0.01	1,246.07	0.07	0.01	1,250.56	
			Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4.00	1	Rough Terrain Forklifts	0.49	9.18	6.45	0.25	0.23	0.01	1,335.08	0.43	0.01	1,349.47	
			Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00	1	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	10.00	67	Signal Boards	0.57	3.01	3.59	0.14	0.14	0.01	493.14	0.05	0.00	495.64	
			Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
			Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	4.00	3	Tractors/Loaders/Backhoes	0.76	9.13	7.66	0.45	0.42	0.01	1,216.01	0.39	0.01	1,229.10	
	2.00		Trenchers	0.79	5.41	7.29	0.53	0.49	0.01	678.99	0.22	0.01	686.30	
			Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e	
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Drainage/Utilities/Sub-Grade			pounds per day	6.04	55.86	54.57	3.02	2.86	0.09	8,245.96	1.68	0.07	8,308.47
	Drainage/Utilities/Sub-Grade			tons per phase	0.56	5.16	5.04	0.28	0.26	0.01	761.93	0.16	0.01	767.70

Paving	Default		Mitigation Option		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Override of	Default										
	Override of Default Number of Vehicles	Program-estimate	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier										
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4.00		Model Default Tier	Air Compressors	1.17	9.69	8.14	0.50	0.50	0.02	1,501.06	0.10	0.01	1,507.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00		Model Default Tier	Cement and Mortar Mixers	0.12	0.62	0.74	0.03	0.03	0.00	101.03	0.01	0.00	101.55
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2.00	1	Model Default Tier	Pavers	0.48	5.63	5.03	0.24	0.22	0.01	882.12	0.29	0.01	891.63
	4.00	1	Model Default Tier	Paving Equipment	0.76	10.09	7.70	0.38	0.35	0.02	1,565.87	0.51	0.01	1,582.77
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4.00	2	Model Default Tier	Rollers	0.77	7.62	7.79	0.48	0.44	0.01	1,029.06	0.33	0.01	1,040.15
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10.00	67	Model Default Tier	Signal Boards	0.57	3.01	3.59	0.14	0.14	0.01	493.14	0.05	0.00	495.64
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	4.00	3	Model Default Tier	Tractors/Loaders/Backhoes	0.76	9.13	7.66	0.45	0.42	0.01	1,216.01	0.39	0.01	1,229.10
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>User-Defined Off-road Equipment</b>	<b>If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab</b>				ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
	Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00		N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Paving		pounds per day	4.62	45.79	40.66	2.22	2.10	0.07	6,788.29	1.68	0.06	6,847.83
		Paving		tons per phase	0.18	1.81	1.61	0.09	0.08	0.00	268.82	0.07	0.00	271.17
<b>Total Emissions all Phases (tons per construction period) =&gt;</b>					<b>1.50</b>	<b>12.84</b>	<b>14.57</b>	<b>0.74</b>	<b>0.69</b>	<b>0.02</b>	<b>2,036.73</b>	<b>0.53</b>	<b>0.02</b>	<b>2,055.40</b>

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day	Horsepower	Load Factor	adju
Aerial Lifts		63		8	63.00		0.31
Air Compressors		78		8	78.00		0.48
Bore/Drill Rigs		206		8	206.00		0.50
Cement and Mortar Mixers		9		8	9.00		0.56
Concrete/Industrial Saws		81		8	81.00		0.73
Cranes		226		8	226.00		0.29
Crawler Tractors		208		8	208.00		0.43
Crushing/Proc. Equipment		85		8	85.00		0.78
Excavators		163		8	163.00		0.38
Forklifts		89		8	89.00		0.20
Generator Sets		84		8	84.00		0.74
Graders		175		8	175.00		0.41
Off-Highway Tractors		123		8	123.00		0.44
Off-Highway Trucks		400		8	400.00		0.38
Other Construction Equipment		172		8	172.00		0.42
Other General Industrial Equipment		88		8	88.00		0.34
Other Material Handling Equipment		167		8	167.00		0.40
Pavers		126		8	126.00		0.42

Paving Equipment		131		8	131.00	0.36
Plate Compactors		8		8	8.00	0.43
Pressure Washers		13		8	13.00	0.30
Pumps		84		8	84.00	0.74
Rollers		81		8	81.00	0.38
Rough Terrain Forklifts		100		8	100.00	0.40
Rubber Tired Dozers		255		8	255.00	0.40
Rubber Tired Loaders		200		8	200.00	0.36
Scrapers		362		8	362.00	0.48
Signal Boards		6		8	6.00	0.82
Skid Steer Loaders		65		8	65.00	0.37
Surfacing Equipment		254		8	254.00	0.30
Sweepers/Scrubbers		64		8	64.00	0.46
Tractors/Loaders/Backhoes		98		8	98.00	0.37
Trenchers		81		8	81.00	0.50
Welders		46		8	46.00	0.45

END OF DATA ENTRY SHEET

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**West Valley Connector O&M Facility**  
**San Bernardino-South Coast County, Winter**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	12.84	1000sqft	0.00	12,836.00	0
Parking Lot	155.00	Space	0.00	93,821.00	0
Automobile Care Center	33.89	1000sqft	5.16	33,889.00	0
Gasoline/Service Station	5.00	Pump	0.00	18,707.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	32
<b>Climate Zone</b>	10			<b>Operational Year</b>	2023
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MWhr)</b>	702.44	<b>CH4 Intensity (lb/MWhr)</b>	0.029	<b>N2O Intensity (lb/MWhr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

## West Valley Connector O&amp;M Facility - San Bernardino-South Coast County, Winter

## Project Characteristics -

Land Use - Total building area = 65,432 square feet. Total required lot acreage = 5.16 acres. (O&M Facility Needs Assessment Report)

Construction Phase - Construction duration is approximately 12 months.

Trips and VMT - Even number trips reflect round trips.

Demolition - Conservatively assume maximum possible demolition.

Grading - Excavation will generate maximum of 800 CY material export. (DSA+ISA Quantities Sheet).

Vehicle Trips - All operational trips are associated with employees.

Construction Off-road Equipment Mitigation - Compliance with SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	230.00	210.00
tblGrading	MaterialExported	0.00	800.00
tblLandUse	LandUseSquareFeet	12,840.00	12,836.00
tblLandUse	LandUseSquareFeet	62,000.00	93,821.00
tblLandUse	LandUseSquareFeet	33,890.00	33,889.00
tblLandUse	LandUseSquareFeet	705.87	18,707.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	1.39	0.00
tblLandUse	LotAcreage	0.78	5.16
tblLandUse	LotAcreage	0.02	0.00
tblTripsAndVMT	HaulingTripNumber	971.00	972.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleTrips	CC_TTP	48.00	0.00

## West Valley Connector O&amp;M Facility - San Bernardino-South Coast County, Winter

tblVehicleTrips	CC_TTP	79.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	CW_TTP	2.00	100.00
tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	DV_TP	51.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	PB_TP	28.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PR_TP	21.00	100.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	23.72	5.91
tblVehicleTrips	WD_TR	168.56	0.00
tblVehicleTrips	WD_TR	11.03	0.00

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**2.0 Emissions Summary**

**2.1 Overall Construction (Maximum Daily Emission)**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	35.1320	32.5566	36.0103	0.0677	7.7479	1.4685	9.0092	3.4396	1.3745	4.3088	0.0000	6,581.3167	6,581.3167	1.4160	0.0000	6,616.7157
<b>Maximum</b>	<b>35.1320</b>	<b>32.5566</b>	<b>36.0103</b>	<b>0.0677</b>	<b>7.7479</b>	<b>1.4685</b>	<b>9.0092</b>	<b>3.4396</b>	<b>1.3745</b>	<b>4.3088</b>	<b>0.0000</b>	<b>6,581.3167</b>	<b>6,581.3167</b>	<b>1.4160</b>	<b>0.0000</b>	<b>6,616.7157</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	35.1320	32.5566	36.0103	0.0677	3.4766	1.4685	4.7380	1.3850	1.3745	2.2542	0.0000	6,581.3167	6,581.3167	1.4160	0.0000	6,616.7157
<b>Maximum</b>	<b>35.1320</b>	<b>32.5566</b>	<b>36.0103</b>	<b>0.0677</b>	<b>3.4766</b>	<b>1.4685</b>	<b>4.7380</b>	<b>1.3850</b>	<b>1.3745</b>	<b>2.2542</b>	<b>0.0000</b>	<b>6,581.3167</b>	<b>6,581.3167</b>	<b>1.4160</b>	<b>0.0000</b>	<b>6,616.7157</b>



## West Valley Connector O&amp;M Facility - San Bernardino-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	55.13	0.00	47.41	59.73	0.00	47.68	0.00	0.00	0.00	0.00	0.00	0.00

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**2.2 Overall Operational**

**Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5041	1.9000e-004	0.0211	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0452	0.0452	1.2000e-004		0.0482
Energy	0.0518	0.4710	0.3956	2.8300e-003		0.0358	0.0358		0.0358	0.0358		565.1523	565.1523	0.0108	0.0104	568.5107
Mobile	0.4297	2.7769	6.4855	0.0297	2.5803	0.0184	2.5987	0.6904	0.0171	0.7076		3,029.1731	3,029.1731	0.1256		3,032.3139
<b>Total</b>	<b>1.9856</b>	<b>3.2480</b>	<b>6.9023</b>	<b>0.0325</b>	<b>2.5803</b>	<b>0.0542</b>	<b>2.6346</b>	<b>0.6904</b>	<b>0.0530</b>	<b>0.7434</b>		<b>3,594.3707</b>	<b>3,594.3707</b>	<b>0.1366</b>	<b>0.0104</b>	<b>3,600.8728</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.5041	1.9000e-004	0.0211	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0452	0.0452	1.2000e-004		0.0482
Energy	0.0518	0.4710	0.3956	2.8300e-003		0.0358	0.0358		0.0358	0.0358		565.1523	565.1523	0.0108	0.0104	568.5107
Mobile	0.4297	2.7769	6.4855	0.0297	2.5803	0.0184	2.5987	0.6904	0.0171	0.7076		3,029.1731	3,029.1731	0.1256		3,032.3139
<b>Total</b>	<b>1.9856</b>	<b>3.2480</b>	<b>6.9023</b>	<b>0.0325</b>	<b>2.5803</b>	<b>0.0542</b>	<b>2.6346</b>	<b>0.6904</b>	<b>0.0530</b>	<b>0.7434</b>		<b>3,594.3707</b>	<b>3,594.3707</b>	<b>0.1366</b>	<b>0.0104</b>	<b>3,600.8728</b>

## West Valley Connector O&amp;M Facility - San Bernardino-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2022	2/11/2022	5	30	
2	Grading	Grading	2/12/2022	3/11/2022	5	20	
3	Building Construction	Building Construction	3/12/2022	12/30/2022	5	210	
4	Paving	Paving	12/5/2022	12/30/2022	5	20	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 98,148; Non-Residential Outdoor: 32,716; Striped Parking Area: 5,629 (Architectural Coating – sqft)

#### OffRoad Equipment

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	16.00	0.00	972.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	16.00	0.00	100.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	60.00	26.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.1 Mitigation Measures Construction**

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

**3.2 Demolition - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0020	0.0000	7.0020	1.0602	0.0000	1.0602			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.781 2	3,746.781 2	1.0524		3,773.092 0
<b>Total</b>	<b>2.6392</b>	<b>25.7194</b>	<b>20.5941</b>	<b>0.0388</b>	<b>7.0020</b>	<b>1.2427</b>	<b>8.2447</b>	<b>1.0602</b>	<b>1.1553</b>	<b>2.2154</b>		<b>3,746.781 2</b>	<b>3,746.781 2</b>	<b>1.0524</b>		<b>3,773.092 0</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.2 Demolition - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1903	6.7897	1.2650	0.0242	0.5670	0.0176	0.5846	0.1555	0.0168	0.1723		2,573.8770	2,573.8770	0.1520		2,577.6767
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0475	0.4983	1.5200e-003	0.1788	1.1100e-003	0.1800	0.0474	1.0200e-003	0.0485		151.3834	151.3834	3.9200e-003		151.4814
<b>Total</b>	<b>0.2666</b>	<b>6.8372</b>	<b>1.7632</b>	<b>0.0257</b>	<b>0.7458</b>	<b>0.0187</b>	<b>0.7645</b>	<b>0.2029</b>	<b>0.0178</b>	<b>0.2207</b>		<b>2,725.2604</b>	<b>2,725.2604</b>	<b>0.1559</b>		<b>2,729.1582</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7308	0.0000	2.7308	0.4135	0.0000	0.4135			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
<b>Total</b>	<b>2.6392</b>	<b>25.7194</b>	<b>20.5941</b>	<b>0.0388</b>	<b>2.7308</b>	<b>1.2427</b>	<b>3.9734</b>	<b>0.4135</b>	<b>1.1553</b>	<b>1.5687</b>	<b>0.0000</b>	<b>3,746.7812</b>	<b>3,746.7812</b>	<b>1.0524</b>		<b>3,773.0920</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.2 Demolition - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1903	6.7897	1.2650	0.0242	0.5670	0.0176	0.5846	0.1555	0.0168	0.1723		2,573.8770	2,573.8770	0.1520		2,577.6767
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0475	0.4983	1.5200e-003	0.1788	1.1100e-003	0.1800	0.0474	1.0200e-003	0.0485		151.3834	151.3834	3.9200e-003		151.4814
<b>Total</b>	<b>0.2666</b>	<b>6.8372</b>	<b>1.7632</b>	<b>0.0257</b>	<b>0.7458</b>	<b>0.0187</b>	<b>0.7645</b>	<b>0.2029</b>	<b>0.0178</b>	<b>0.2207</b>		<b>2,725.2604</b>	<b>2,725.2604</b>	<b>0.1559</b>		<b>2,729.1582</b>

**3.3 Grading - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5569	0.0000	6.5569	3.3682	0.0000	3.3682			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
<b>Total</b>	<b>1.9486</b>	<b>20.8551</b>	<b>15.2727</b>	<b>0.0297</b>	<b>6.5569</b>	<b>0.9409</b>	<b>7.4977</b>	<b>3.3682</b>	<b>0.8656</b>	<b>4.2338</b>		<b>2,872.0464</b>	<b>2,872.0464</b>	<b>0.9289</b>		<b>2,895.2684</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.3 Grading - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0294	1.0478	0.1952	3.7400e-003	0.0875	2.7100e-003	0.0902	0.0240	2.6000e-003	0.0266		397.2032	397.2032	0.0235		397.7896
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0475	0.4983	1.5200e-003	0.1788	1.1100e-003	0.1800	0.0474	1.0200e-003	0.0485		151.3834	151.3834	3.9200e-003		151.4814
<b>Total</b>	<b>0.1057</b>	<b>1.0953</b>	<b>0.6935</b>	<b>5.2600e-003</b>	<b>0.2663</b>	<b>3.8200e-003</b>	<b>0.2702</b>	<b>0.0714</b>	<b>3.6200e-003</b>	<b>0.0750</b>		<b>548.5866</b>	<b>548.5866</b>	<b>0.0274</b>		<b>549.2711</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5572	0.0000	2.5572	1.3136	0.0000	1.3136			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
<b>Total</b>	<b>1.9486</b>	<b>20.8551</b>	<b>15.2727</b>	<b>0.0297</b>	<b>2.5572</b>	<b>0.9409</b>	<b>3.4980</b>	<b>1.3136</b>	<b>0.8656</b>	<b>2.1792</b>	<b>0.0000</b>	<b>2,872.0464</b>	<b>2,872.0464</b>	<b>0.9289</b>		<b>2,895.2684</b>



West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.3 Grading - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0294	1.0478	0.1952	3.7400e-003	0.0875	2.7100e-003	0.0902	0.0240	2.6000e-003	0.0266		397.2032	397.2032	0.0235		397.7896
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0475	0.4983	1.5200e-003	0.1788	1.1100e-003	0.1800	0.0474	1.0200e-003	0.0485		151.3834	151.3834	3.9200e-003		151.4814
<b>Total</b>	<b>0.1057</b>	<b>1.0953</b>	<b>0.6935</b>	<b>5.2600e-003</b>	<b>0.2663</b>	<b>3.8200e-003</b>	<b>0.2702</b>	<b>0.0714</b>	<b>3.6200e-003</b>	<b>0.0750</b>		<b>548.5866</b>	<b>548.5866</b>	<b>0.0274</b>		<b>549.2711</b>

**3.4 Building Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>		<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.4 Building Construction - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0666	2.3501	0.5123	6.6800e-003	0.1665	3.7200e-003	0.1702	0.0480	3.5600e-003	0.0515		705.2663	705.2663	0.0501		706.5190
Worker	0.2861	0.1781	1.8685	5.7000e-003	0.6707	4.1600e-003	0.6748	0.1779	3.8300e-003	0.1817		567.6876	567.6876	0.0147		568.0554
<b>Total</b>	<b>0.3526</b>	<b>2.5282</b>	<b>2.3809</b>	<b>0.0124</b>	<b>0.8372</b>	<b>7.8800e-003</b>	<b>0.8451</b>	<b>0.2258</b>	<b>7.3900e-003</b>	<b>0.2332</b>		<b>1,272.9539</b>	<b>1,272.9539</b>	<b>0.0648</b>		<b>1,274.5744</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>	<b>0.0000</b>	<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.4 Building Construction - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0666	2.3501	0.5123	6.6800e-003	0.1665	3.7200e-003	0.1702	0.0480	3.5600e-003	0.0515		705.2663	705.2663	0.0501		706.5190
Worker	0.2861	0.1781	1.8685	5.7000e-003	0.6707	4.1600e-003	0.6748	0.1779	3.8300e-003	0.1817		567.6876	567.6876	0.0147		568.0554
<b>Total</b>	<b>0.3526</b>	<b>2.5282</b>	<b>2.3809</b>	<b>0.0124</b>	<b>0.8372</b>	<b>7.8800e-003</b>	<b>0.8451</b>	<b>0.2258</b>	<b>7.3900e-003</b>	<b>0.2332</b>		<b>1,272.9539</b>	<b>1,272.9539</b>	<b>0.0648</b>		<b>1,274.5744</b>

**3.5 Paving - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.1028</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>		<b>2,207.6603</b>	<b>2,207.6603</b>	<b>0.7140</b>		<b>2,225.5104</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.5 Paving - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0475	0.4983	1.5200e-003	0.1788	1.1100e-003	0.1800	0.0474	1.0200e-003	0.0485		151.3834	151.3834	3.9200e-003		151.4814
<b>Total</b>	<b>0.0763</b>	<b>0.0475</b>	<b>0.4983</b>	<b>1.5200e-003</b>	<b>0.1788</b>	<b>1.1100e-003</b>	<b>0.1800</b>	<b>0.0474</b>	<b>1.0200e-003</b>	<b>0.0485</b>		<b>151.3834</b>	<b>151.3834</b>	<b>3.9200e-003</b>		<b>151.4814</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.1028</b>	<b>11.1249</b>	<b>14.5805</b>	<b>0.0228</b>		<b>0.5679</b>	<b>0.5679</b>		<b>0.5225</b>	<b>0.5225</b>	<b>0.0000</b>	<b>2,207.6603</b>	<b>2,207.6603</b>	<b>0.7140</b>		<b>2,225.5104</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.5 Paving - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0763	0.0475	0.4983	1.5200e-003	0.1788	1.1100e-003	0.1800	0.0474	1.0200e-003	0.0485		151.3834	151.3834	3.9200e-003		151.4814
<b>Total</b>	<b>0.0763</b>	<b>0.0475</b>	<b>0.4983</b>	<b>1.5200e-003</b>	<b>0.1788</b>	<b>1.1100e-003</b>	<b>0.1800</b>	<b>0.0474</b>	<b>1.0200e-003</b>	<b>0.0485</b>		<b>151.3834</b>	<b>151.3834</b>	<b>3.9200e-003</b>		<b>151.4814</b>

**3.6 Architectural Coating - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	31.6323					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>31.8368</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.6 Architectural Coating - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0356	0.3737	1.1400e-003	0.1341	8.3000e-004	0.1350	0.0356	7.7000e-004	0.0363		113.5375	113.5375	2.9400e-003		113.6111
<b>Total</b>	<b>0.0572</b>	<b>0.0356</b>	<b>0.3737</b>	<b>1.1400e-003</b>	<b>0.1341</b>	<b>8.3000e-004</b>	<b>0.1350</b>	<b>0.0356</b>	<b>7.7000e-004</b>	<b>0.0363</b>		<b>113.5375</b>	<b>113.5375</b>	<b>2.9400e-003</b>		<b>113.6111</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	31.6323					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
<b>Total</b>	<b>31.8368</b>	<b>1.4085</b>	<b>1.8136</b>	<b>2.9700e-003</b>		<b>0.0817</b>	<b>0.0817</b>		<b>0.0817</b>	<b>0.0817</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0183</b>		<b>281.9062</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**3.6 Architectural Coating - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0572	0.0356	0.3737	1.1400e-003	0.1341	8.3000e-004	0.1350	0.0356	7.7000e-004	0.0363		113.5375	113.5375	2.9400e-003		113.6111
<b>Total</b>	<b>0.0572</b>	<b>0.0356</b>	<b>0.3737</b>	<b>1.1400e-003</b>	<b>0.1341</b>	<b>8.3000e-004</b>	<b>0.1350</b>	<b>0.0356</b>	<b>7.7000e-004</b>	<b>0.0363</b>		<b>113.5375</b>	<b>113.5375</b>	<b>2.9400e-003</b>		<b>113.6111</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4297	2.7769	6.4855	0.0297	2.5803	0.0184	2.5987	0.6904	0.0171	0.7076		3,029.173 1	3,029.173 1	0.1256		3,032.313 9
Unmitigated	0.4297	2.7769	6.4855	0.0297	2.5803	0.0184	2.5987	0.6904	0.0171	0.7076		3,029.173 1	3,029.173 1	0.1256		3,032.313 9

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	200.29	0.00	0.00	864,451	864,451
Gasoline/Service Station	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	200.29	0.00	0.00	864,451	864,451

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0
Gasoline/Service Station	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0
General Office Building	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix



West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884
Gasoline/Service Station	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884
General Office Building	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884
Parking Lot	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
NaturalGas Mitigated	0.0518	0.4710	0.3956	2.8300e-003		0.0358	0.0358		0.0358	0.0358		565.1523	565.1523	0.0108	0.0104	568.5107
NaturalGas Unmitigated	0.0518	0.4710	0.3956	2.8300e-003		0.0358	0.0358		0.0358	0.0358		565.1523	565.1523	0.0108	0.0104	568.5107

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	3016.59	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8924	354.8924	6.8000e-003	6.5100e-003	357.0013
Gasoline/Service Station	1665.18	0.0180	0.1633	0.1371	9.8000e-004		0.0124	0.0124		0.0124	0.0124		195.9034	195.9034	3.7500e-003	3.5900e-003	197.0676
General Office Building	122.03	1.3200e-003	0.0120	0.0101	7.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004		14.3565	14.3565	2.8000e-004	2.6000e-004	14.4418
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0518</b>	<b>0.4710</b>	<b>0.3956</b>	<b>2.8200e-003</b>		<b>0.0358</b>	<b>0.0358</b>		<b>0.0358</b>	<b>0.0358</b>		<b>565.1523</b>	<b>565.1523</b>	<b>0.0108</b>	<b>0.0104</b>	<b>568.5107</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Automobile Care Center	3.01659	0.0325	0.2957	0.2484	1.7700e-003		0.0225	0.0225		0.0225	0.0225		354.8924	354.8924	6.8000e-003	6.5100e-003	357.0013
Gasoline/Service Station	1.66518	0.0180	0.1633	0.1371	9.8000e-004		0.0124	0.0124		0.0124	0.0124		195.9034	195.9034	3.7500e-003	3.5900e-003	197.0676
General Office Building	0.12203	1.3200e-003	0.0120	0.0101	7.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004		14.3565	14.3565	2.8000e-004	2.6000e-004	14.4418
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>0.0518</b>	<b>0.4710</b>	<b>0.3956</b>	<b>2.8200e-003</b>		<b>0.0358</b>	<b>0.0358</b>		<b>0.0358</b>	<b>0.0358</b>		<b>565.1523</b>	<b>565.1523</b>	<b>0.0108</b>	<b>0.0104</b>	<b>568.5107</b>

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5041	1.9000e-004	0.0211	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0452	0.0452	1.2000e-004		0.0482
Unmitigated	1.5041	1.9000e-004	0.0211	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0452	0.0452	1.2000e-004		0.0482

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1733					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9500e-003	1.9000e-004	0.0211	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0452	0.0452	1.2000e-004		0.0482
<b>Total</b>	<b>1.5041</b>	<b>1.9000e-004</b>	<b>0.0211</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>0.0452</b>	<b>0.0452</b>	<b>1.2000e-004</b>		<b>0.0482</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

**6.2 Area by SubCategory**

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1733					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.3288					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9500e-003	1.9000e-004	0.0211	0.0000		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005		0.0452	0.0452	1.2000e-004		0.0482
<b>Total</b>	<b>1.5041</b>	<b>1.9000e-004</b>	<b>0.0211</b>	<b>0.0000</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>		<b>0.0452</b>	<b>0.0452</b>	<b>1.2000e-004</b>		<b>0.0482</b>

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

**8.0 Waste Detail**

**8.1 Mitigation Measures Waste**

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Winter

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

**West Valley Connector O&M Facility**  
**San Bernardino-South Coast County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	12.84	1000sqft	0.00	12,836.00	0
Parking Lot	155.00	Space	0.00	93,821.00	0
Automobile Care Center	33.89	1000sqft	5.16	33,889.00	0
Gasoline/Service Station	5.00	Pump	0.00	18,707.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	32
<b>Climate Zone</b>	10			<b>Operational Year</b>	2023
<b>Utility Company</b>	Southern California Edison				
<b>CO2 Intensity (lb/MW hr)</b>	702.44	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

**1.3 User Entered Comments & Non-Default Data**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

Project Characteristics -

Land Use - Total building area = 65,432 square feet. Total required lot acreage = 5.16 acres. (O&M Facility Needs Assessment Report)

Construction Phase - Construction duration is approximately 12 months.

Trips and VMT - Even number trips reflect round trips.

Demolition - Conservatively assume maximum possible demolition.

Grading - Excavation will generate maximum of 800 CY material export. (DSA+ISA Quantities Sheet).

Vehicle Trips - All operational trips are associated with employees.

Construction Off-road Equipment Mitigation - Compliance with SCAQMD Rule 403.

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	NumDays	230.00	210.00
tblGrading	MaterialExported	0.00	800.00
tblLandUse	LandUseSquareFeet	12,840.00	12,836.00
tblLandUse	LandUseSquareFeet	62,000.00	93,821.00
tblLandUse	LandUseSquareFeet	33,890.00	33,889.00
tblLandUse	LandUseSquareFeet	705.87	18,707.00
tblLandUse	LotAcreage	0.29	0.00
tblLandUse	LotAcreage	1.39	0.00
tblLandUse	LotAcreage	0.78	5.16
tblLandUse	LotAcreage	0.02	0.00
tblTripsAndVMT	HaulingTripNumber	971.00	972.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblTripsAndVMT	WorkerTripNumber	15.00	16.00
tblVehicleTrips	CC_TTP	48.00	0.00



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tblVehicleTrips	CC_TTP	79.00	0.00
tblVehicleTrips	CC_TTP	48.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CNW_TTP	19.00	0.00
tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	CW_TTP	2.00	100.00
tblVehicleTrips	CW_TTP	33.00	100.00
tblVehicleTrips	DV_TP	51.00	0.00
tblVehicleTrips	DV_TP	27.00	0.00
tblVehicleTrips	DV_TP	19.00	0.00
tblVehicleTrips	PB_TP	28.00	0.00
tblVehicleTrips	PB_TP	59.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PR_TP	21.00	100.00
tblVehicleTrips	PR_TP	14.00	100.00
tblVehicleTrips	PR_TP	77.00	100.00
tblVehicleTrips	ST_TR	23.72	0.00
tblVehicleTrips	ST_TR	168.56	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	11.88	0.00
tblVehicleTrips	SU_TR	168.56	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	23.72	5.91
tblVehicleTrips	WD_TR	168.56	0.00
tblVehicleTrips	WD_TR	11.03	0.00

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**2.0 Emissions Summary**

**2.1 Overall Construction**

**Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6075	2.7473	2.6413	5.7700e-003	0.2736	0.1207	0.3942	0.0774	0.1130	0.1905	0.0000	512.1599	512.1599	0.0960	0.0000	514.5590
<b>Maximum</b>	<b>0.6075</b>	<b>2.7473</b>	<b>2.6413</b>	<b>5.7700e-003</b>	<b>0.2736</b>	<b>0.1207</b>	<b>0.3942</b>	<b>0.0774</b>	<b>0.1130</b>	<b>0.1905</b>	<b>0.0000</b>	<b>512.1599</b>	<b>512.1599</b>	<b>0.0960</b>	<b>0.0000</b>	<b>514.5590</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6075	2.7473	2.6413	5.7700e-003	0.1695	0.1207	0.2902	0.0472	0.1130	0.1602	0.0000	512.1594	512.1594	0.0960	0.0000	514.5586
<b>Maximum</b>	<b>0.6075</b>	<b>2.7473</b>	<b>2.6413</b>	<b>5.7700e-003</b>	<b>0.1695</b>	<b>0.1207</b>	<b>0.2902</b>	<b>0.0472</b>	<b>0.1130</b>	<b>0.1602</b>	<b>0.0000</b>	<b>512.1594</b>	<b>512.1594</b>	<b>0.0960</b>	<b>0.0000</b>	<b>514.5586</b>

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	38.04	0.00	26.40	39.06	0.00	15.88	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-3-2022	4-2-2022	0.9054	0.9054
2	4-3-2022	7-2-2022	0.6570	0.6570
3	7-3-2022	9-30-2022	0.6498	0.6498
		Highest	0.9054	0.9054

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2744	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1300e-003	5.1300e-003	1.0000e-005	0.0000	5.4700e-003
Energy	9.4500e-003	0.0860	0.0722	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003	0.0000	313.0610	313.0610	0.0109	3.5900e-003	314.4022
Mobile	0.0551	0.3695	0.8765	3.9200e-003	0.3292	2.3800e-003	0.3316	0.0882	2.2200e-003	0.0904	0.0000	363.5220	363.5220	0.0147	0.0000	363.8896
Waste						0.0000	0.0000		0.0000	0.0000	29.2490	0.0000	29.2490	1.7286	0.0000	72.4631
Water						0.0000	0.0000		0.0000	0.0000	1.7566	34.9843	36.7410	0.1819	4.5600e-003	42.6461
<b>Total</b>	<b>0.3390</b>	<b>0.4555</b>	<b>0.9513</b>	<b>4.4400e-003</b>	<b>0.3292</b>	<b>8.9200e-003</b>	<b>0.3381</b>	<b>0.0882</b>	<b>8.7600e-003</b>	<b>0.0970</b>	<b>31.0056</b>	<b>711.5724</b>	<b>742.5780</b>	<b>1.9360</b>	<b>8.1500e-003</b>	<b>793.4065</b>

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**2.2 Overall Operational**

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2744	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1300e-003	5.1300e-003	1.0000e-005	0.0000	5.4700e-003
Energy	9.4500e-003	0.0860	0.0722	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003	0.0000	313.0610	313.0610	0.0109	3.5900e-003	314.4022
Mobile	0.0551	0.3695	0.8765	3.9200e-003	0.3292	2.3800e-003	0.3316	0.0882	2.2200e-003	0.0904	0.0000	363.5220	363.5220	0.0147	0.0000	363.8896
Waste						0.0000	0.0000		0.0000	0.0000	29.2490	0.0000	29.2490	1.7286	0.0000	72.4631
Water						0.0000	0.0000		0.0000	0.0000	1.7566	34.9843	36.7410	0.1819	4.5600e-003	42.6461
<b>Total</b>	<b>0.3390</b>	<b>0.4555</b>	<b>0.9513</b>	<b>4.4400e-003</b>	<b>0.3292</b>	<b>8.9200e-003</b>	<b>0.3381</b>	<b>0.0882</b>	<b>8.7600e-003</b>	<b>0.0970</b>	<b>31.0056</b>	<b>711.5724</b>	<b>742.5780</b>	<b>1.9360</b>	<b>8.1500e-003</b>	<b>793.4065</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail**

**Construction Phase**

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/3/2022	2/11/2022	5	30	
2	Grading	Grading	2/12/2022	3/11/2022	5	20	
3	Building Construction	Building Construction	3/12/2022	12/30/2022	5	210	
4	Paving	Paving	12/5/2022	12/30/2022	5	20	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 10**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 98,148; Non-Residential Outdoor: 32,716; Striped Parking Area: 5,629 (Architectural Coating – sqft)**

**OffRoad Equipment**

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	16.00	0.00	972.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	16.00	0.00	100.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	60.00	26.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	16.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

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**3.1 Mitigation Measures Construction**

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

**3.2 Demolition - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1050	0.0000	0.1050	0.0159	0.0000	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0396	0.3858	0.3089	5.8000e-004		0.0186	0.0186		0.0173	0.0173	0.0000	50.9853	50.9853	0.0143	0.0000	51.3434
<b>Total</b>	<b>0.0396</b>	<b>0.3858</b>	<b>0.3089</b>	<b>5.8000e-004</b>	<b>0.1050</b>	<b>0.0186</b>	<b>0.1237</b>	<b>0.0159</b>	<b>0.0173</b>	<b>0.0332</b>	<b>0.0000</b>	<b>50.9853</b>	<b>50.9853</b>	<b>0.0143</b>	<b>0.0000</b>	<b>51.3434</b>

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**3.2 Demolition - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7800e-003	0.1039	0.0177	3.7000e-004	8.3600e-003	2.6000e-004	8.6300e-003	2.3000e-003	2.5000e-004	2.5500e-003	0.0000	35.5775	35.5775	1.9800e-003	0.0000	35.6269
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	7.5000e-004	7.8400e-003	2.0000e-005	2.6300e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.1000e-004	0.0000	2.1051	2.1051	5.0000e-005	0.0000	2.1064
<b>Total</b>	<b>3.8100e-003</b>	<b>0.1047</b>	<b>0.0255</b>	<b>3.9000e-004</b>	<b>0.0110</b>	<b>2.8000e-004</b>	<b>0.0113</b>	<b>3.0000e-003</b>	<b>2.7000e-004</b>	<b>3.2600e-003</b>	<b>0.0000</b>	<b>37.6825</b>	<b>37.6825</b>	<b>2.0300e-003</b>	<b>0.0000</b>	<b>37.7333</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0410	0.0000	0.0410	6.2000e-003	0.0000	6.2000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0396	0.3858	0.3089	5.8000e-004		0.0186	0.0186		0.0173	0.0173	0.0000	50.9853	50.9853	0.0143	0.0000	51.3433
<b>Total</b>	<b>0.0396</b>	<b>0.3858</b>	<b>0.3089</b>	<b>5.8000e-004</b>	<b>0.0410</b>	<b>0.0186</b>	<b>0.0596</b>	<b>6.2000e-003</b>	<b>0.0173</b>	<b>0.0235</b>	<b>0.0000</b>	<b>50.9853</b>	<b>50.9853</b>	<b>0.0143</b>	<b>0.0000</b>	<b>51.3433</b>



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**3.2 Demolition - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.7800e-003	0.1039	0.0177	3.7000e-004	8.3600e-003	2.6000e-004	8.6300e-003	2.3000e-003	2.5000e-004	2.5500e-003	0.0000	35.5775	35.5775	1.9800e-003	0.0000	35.6269
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	7.5000e-004	7.8400e-003	2.0000e-005	2.6300e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.1000e-004	0.0000	2.1051	2.1051	5.0000e-005	0.0000	2.1064
<b>Total</b>	<b>3.8100e-003</b>	<b>0.1047</b>	<b>0.0255</b>	<b>3.9000e-004</b>	<b>0.0110</b>	<b>2.8000e-004</b>	<b>0.0113</b>	<b>3.0000e-003</b>	<b>2.7000e-004</b>	<b>3.2600e-003</b>	<b>0.0000</b>	<b>37.6825</b>	<b>37.6825</b>	<b>2.0300e-003</b>	<b>0.0000</b>	<b>37.7333</b>

**3.3 Grading - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0656	0.0000	0.0656	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.2086	0.1527	3.0000e-004		9.4100e-003	9.4100e-003		8.6600e-003	8.6600e-003	0.0000	26.0548	26.0548	8.4300e-003	0.0000	26.2654
<b>Total</b>	<b>0.0195</b>	<b>0.2086</b>	<b>0.1527</b>	<b>3.0000e-004</b>	<b>0.0656</b>	<b>9.4100e-003</b>	<b>0.0750</b>	<b>0.0337</b>	<b>8.6600e-003</b>	<b>0.0423</b>	<b>0.0000</b>	<b>26.0548</b>	<b>26.0548</b>	<b>8.4300e-003</b>	<b>0.0000</b>	<b>26.2654</b>

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**3.3 Grading - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0107	1.8200e-003	4.0000e-005	8.6000e-004	3.0000e-005	8.9000e-004	2.4000e-004	3.0000e-005	2.6000e-004	0.0000	3.6602	3.6602	2.0000e-004	0.0000	3.6653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.0000e-004	5.2300e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4034	1.4034	4.0000e-005	0.0000	1.4043
<b>Total</b>	<b>9.8000e-004</b>	<b>0.0112</b>	<b>7.0500e-003</b>	<b>6.0000e-005</b>	<b>2.6100e-003</b>	<b>4.0000e-005</b>	<b>2.6600e-003</b>	<b>7.1000e-004</b>	<b>4.0000e-005</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>5.0636</b>	<b>5.0636</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>5.0696</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0256	0.0000	0.0256	0.0131	0.0000	0.0131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0195	0.2086	0.1527	3.0000e-004		9.4100e-003	9.4100e-003		8.6600e-003	8.6600e-003	0.0000	26.0547	26.0547	8.4300e-003	0.0000	26.2654
<b>Total</b>	<b>0.0195</b>	<b>0.2086</b>	<b>0.1527</b>	<b>3.0000e-004</b>	<b>0.0256</b>	<b>9.4100e-003</b>	<b>0.0350</b>	<b>0.0131</b>	<b>8.6600e-003</b>	<b>0.0218</b>	<b>0.0000</b>	<b>26.0547</b>	<b>26.0547</b>	<b>8.4300e-003</b>	<b>0.0000</b>	<b>26.2654</b>

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**3.3 Grading - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.9000e-004	0.0107	1.8200e-003	4.0000e-005	8.6000e-004	3.0000e-005	8.9000e-004	2.4000e-004	3.0000e-005	2.6000e-004	0.0000	3.6602	3.6602	2.0000e-004	0.0000	3.6653
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.0000e-004	5.2300e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4034	1.4034	4.0000e-005	0.0000	1.4043
<b>Total</b>	<b>9.8000e-004</b>	<b>0.0112</b>	<b>7.0500e-003</b>	<b>6.0000e-005</b>	<b>2.6100e-003</b>	<b>4.0000e-005</b>	<b>2.6600e-003</b>	<b>7.1000e-004</b>	<b>4.0000e-005</b>	<b>7.4000e-004</b>	<b>0.0000</b>	<b>5.0636</b>	<b>5.0636</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>5.0696</b>

**3.4 Building Construction - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1792	1.6396	1.7182	2.8300e-003		0.0850	0.0850		0.0799	0.0799	0.0000	243.3115	243.3115	0.0583	0.0000	244.7688
<b>Total</b>	<b>0.1792</b>	<b>1.6396</b>	<b>1.7182</b>	<b>2.8300e-003</b>		<b>0.0850</b>	<b>0.0850</b>		<b>0.0799</b>	<b>0.0799</b>	<b>0.0000</b>	<b>243.3115</b>	<b>243.3115</b>	<b>0.0583</b>	<b>0.0000</b>	<b>244.7688</b>

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**3.4 Building Construction - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7500e-003	0.2515	0.0500	7.2000e-004	0.0172	3.8000e-004	0.0176	4.9700e-003	3.7000e-004	5.3300e-003	0.0000	68.7672	68.7672	4.5100e-003	0.0000	68.8800
Worker	0.0271	0.0197	0.2059	6.1000e-004	0.0691	4.4000e-004	0.0695	0.0184	4.0000e-004	0.0188	0.0000	55.2582	55.2582	1.4400e-003	0.0000	55.2942
<b>Total</b>	<b>0.0339</b>	<b>0.2712</b>	<b>0.2559</b>	<b>1.3300e-003</b>	<b>0.0863</b>	<b>8.2000e-004</b>	<b>0.0871</b>	<b>0.0233</b>	<b>7.7000e-004</b>	<b>0.0241</b>	<b>0.0000</b>	<b>124.0254</b>	<b>124.0254</b>	<b>5.9500e-003</b>	<b>0.0000</b>	<b>124.1741</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1792	1.6396	1.7182	2.8300e-003		0.0850	0.0850		0.0799	0.0799	0.0000	243.3112	243.3112	0.0583	0.0000	244.7685
<b>Total</b>	<b>0.1792</b>	<b>1.6396</b>	<b>1.7182</b>	<b>2.8300e-003</b>		<b>0.0850</b>	<b>0.0850</b>		<b>0.0799</b>	<b>0.0799</b>	<b>0.0000</b>	<b>243.3112</b>	<b>243.3112</b>	<b>0.0583</b>	<b>0.0000</b>	<b>244.7685</b>

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**3.4 Building Construction - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.7500e-003	0.2515	0.0500	7.2000e-004	0.0172	3.8000e-004	0.0176	4.9700e-003	3.7000e-004	5.3300e-003	0.0000	68.7672	68.7672	4.5100e-003	0.0000	68.8800
Worker	0.0271	0.0197	0.2059	6.1000e-004	0.0691	4.4000e-004	0.0695	0.0184	4.0000e-004	0.0188	0.0000	55.2582	55.2582	1.4400e-003	0.0000	55.2942
<b>Total</b>	<b>0.0339</b>	<b>0.2712</b>	<b>0.2559</b>	<b>1.3300e-003</b>	<b>0.0863</b>	<b>8.2000e-004</b>	<b>0.0871</b>	<b>0.0233</b>	<b>7.7000e-004</b>	<b>0.0241</b>	<b>0.0000</b>	<b>124.0254</b>	<b>124.0254</b>	<b>5.9500e-003</b>	<b>0.0000</b>	<b>124.1741</b>

**3.5 Paving - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0110</b>	<b>0.1113</b>	<b>0.1458</b>	<b>2.3000e-004</b>		<b>5.6800e-003</b>	<b>5.6800e-003</b>		<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>0.0000</b>	<b>20.0276</b>	<b>20.0276</b>	<b>6.4800e-003</b>	<b>0.0000</b>	<b>20.1895</b>

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**3.5 Paving - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.0000e-004	5.2300e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4034	1.4034	4.0000e-005	0.0000	1.4043
<b>Total</b>	<b>6.9000e-004</b>	<b>5.0000e-004</b>	<b>5.2300e-003</b>	<b>2.0000e-005</b>	<b>1.7500e-003</b>	<b>1.0000e-005</b>	<b>1.7700e-003</b>	<b>4.7000e-004</b>	<b>1.0000e-005</b>	<b>4.8000e-004</b>	<b>0.0000</b>	<b>1.4034</b>	<b>1.4034</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4043</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0110</b>	<b>0.1113</b>	<b>0.1458</b>	<b>2.3000e-004</b>		<b>5.6800e-003</b>	<b>5.6800e-003</b>		<b>5.2200e-003</b>	<b>5.2200e-003</b>	<b>0.0000</b>	<b>20.0275</b>	<b>20.0275</b>	<b>6.4800e-003</b>	<b>0.0000</b>	<b>20.1895</b>

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**3.5 Paving - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.0000e-004	5.2300e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4034	1.4034	4.0000e-005	0.0000	1.4043
<b>Total</b>	<b>6.9000e-004</b>	<b>5.0000e-004</b>	<b>5.2300e-003</b>	<b>2.0000e-005</b>	<b>1.7500e-003</b>	<b>1.0000e-005</b>	<b>1.7700e-003</b>	<b>4.7000e-004</b>	<b>1.0000e-005</b>	<b>4.8000e-004</b>	<b>0.0000</b>	<b>1.4034</b>	<b>1.4034</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>1.4043</b>

**3.6 Architectural Coating - 2022**

**Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3163					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
<b>Total</b>	<b>0.3184</b>	<b>0.0141</b>	<b>0.0181</b>	<b>3.0000e-005</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.5533</b>	<b>2.5533</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>2.5574</b>

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**3.6 Architectural Coating - 2022**

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.8000e-004	3.9200e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3200e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0525	1.0525	3.0000e-005	0.0000	1.0532
<b>Total</b>	<b>5.2000e-004</b>	<b>3.8000e-004</b>	<b>3.9200e-003</b>	<b>1.0000e-005</b>	<b>1.3200e-003</b>	<b>1.0000e-005</b>	<b>1.3200e-003</b>	<b>3.5000e-004</b>	<b>1.0000e-005</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>1.0525</b>	<b>1.0525</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.0532</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3163					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
<b>Total</b>	<b>0.3184</b>	<b>0.0141</b>	<b>0.0181</b>	<b>3.0000e-005</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>		<b>8.2000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.5533</b>	<b>2.5533</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>2.5574</b>



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**3.6 Architectural Coating - 2022**

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.8000e-004	3.9200e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3200e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0525	1.0525	3.0000e-005	0.0000	1.0532
<b>Total</b>	<b>5.2000e-004</b>	<b>3.8000e-004</b>	<b>3.9200e-003</b>	<b>1.0000e-005</b>	<b>1.3200e-003</b>	<b>1.0000e-005</b>	<b>1.3200e-003</b>	<b>3.5000e-004</b>	<b>1.0000e-005</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>1.0525</b>	<b>1.0525</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>1.0532</b>

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0551	0.3695	0.8765	3.9200e-003	0.3292	2.3800e-003	0.3316	0.0882	2.2200e-003	0.0904	0.0000	363.5220	363.5220	0.0147	0.0000	363.8896
Unmitigated	0.0551	0.3695	0.8765	3.9200e-003	0.3292	2.3800e-003	0.3316	0.0882	2.2200e-003	0.0904	0.0000	363.5220	363.5220	0.0147	0.0000	363.8896

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Automobile Care Center	200.29	0.00	0.00	864,451	864,451
Gasoline/Service Station	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	200.29	0.00	0.00	864,451	864,451

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Automobile Care Center	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0
Gasoline/Service Station	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0
General Office Building	16.60	8.40	6.90	100.00	0.00	0.00	100	0	0
Parking Lot	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

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Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Automobile Care Center	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884
Gasoline/Service Station	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884
General Office Building	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884
Parking Lot	0.555935	0.035798	0.180985	0.113549	0.015175	0.004939	0.018497	0.064736	0.001364	0.001528	0.005807	0.000803	0.000884

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	219.4937	219.4937	9.0600e-003	1.8700e-003	220.2789
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	219.4937	219.4937	9.0600e-003	1.8700e-003	220.2789
NaturalGas Mitigated	9.4500e-003	0.0860	0.0722	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003	0.0000	93.5673	93.5673	1.7900e-003	1.7200e-003	94.1233
NaturalGas Unmitigated	9.4500e-003	0.0860	0.0722	5.2000e-004		6.5300e-003	6.5300e-003		6.5300e-003	6.5300e-003	0.0000	93.5673	93.5673	1.7900e-003	1.7200e-003	94.1233

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**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	1.10105e+006	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	58.7564	58.7564	1.1300e-003	1.0800e-003	59.1056
Gasoline/Service Station	607790	3.2800e-003	0.0298	0.0250	1.8000e-004		2.2600e-003	2.2600e-003		2.2600e-003	2.2600e-003	0.0000	32.4340	32.4340	6.2000e-004	5.9000e-004	32.6268
General Office Building	44540.9	2.4000e-004	2.1800e-003	1.8300e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.3769	2.3769	5.0000e-005	4.0000e-005	2.3910
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>9.4600e-003</b>	<b>0.0859</b>	<b>0.0722</b>	<b>5.1000e-004</b>		<b>6.5300e-003</b>	<b>6.5300e-003</b>		<b>6.5300e-003</b>	<b>6.5300e-003</b>	<b>0.0000</b>	<b>93.5673</b>	<b>93.5673</b>	<b>1.8000e-003</b>	<b>1.7100e-003</b>	<b>94.1233</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Automobile Care Center	1.10105e+006	5.9400e-003	0.0540	0.0453	3.2000e-004		4.1000e-003	4.1000e-003		4.1000e-003	4.1000e-003	0.0000	58.7564	58.7564	1.1300e-003	1.0800e-003	59.1056
Gasoline/Service Station	607790	3.2800e-003	0.0298	0.0250	1.8000e-004		2.2600e-003	2.2600e-003		2.2600e-003	2.2600e-003	0.0000	32.4340	32.4340	6.2000e-004	5.9000e-004	32.6268
General Office Building	44540.9	2.4000e-004	2.1800e-003	1.8300e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.3769	2.3769	5.0000e-005	4.0000e-005	2.3910
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>9.4600e-003</b>	<b>0.0859</b>	<b>0.0722</b>	<b>5.1000e-004</b>		<b>6.5300e-003</b>	<b>6.5300e-003</b>		<b>6.5300e-003</b>	<b>6.5300e-003</b>	<b>0.0000</b>	<b>93.5673</b>	<b>93.5673</b>	<b>1.8000e-003</b>	<b>1.7100e-003</b>	<b>94.1233</b>

## West Valley Connector O&amp;M Facility - San Bernardino-South Coast County, Annual

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	343973	109.5973	4.5200e-003	9.4000e-004	109.9894
Gasoline/Service Station	189876	60.4986	2.5000e-003	5.2000e-004	60.7150
General Office Building	122199	38.9351	1.6100e-003	3.3000e-004	39.0744
Parking Lot	32837.3	10.4627	4.3000e-004	9.0000e-005	10.5001
<b>Total</b>		<b>219.4937</b>	<b>9.0600e-003</b>	<b>1.8800e-003</b>	<b>220.2789</b>

## West Valley Connector O&amp;M Facility - San Bernardino-South Coast County, Annual

**5.3 Energy by Land Use - Electricity****Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Automobile Care Center	343973	109.5973	4.5200e-003	9.4000e-004	109.9894
Gasoline/Service Station	189876	60.4986	2.5000e-003	5.2000e-004	60.7150
General Office Building	122199	38.9351	1.6100e-003	3.3000e-004	39.0744
Parking Lot	32837.3	10.4627	4.3000e-004	9.0000e-005	10.5001
<b>Total</b>		<b>219.4937</b>	<b>9.0600e-003</b>	<b>1.8800e-003</b>	<b>220.2789</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2744	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1300e-003	5.1300e-003	1.0000e-005	0.0000	5.4700e-003
Unmitigated	0.2744	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1300e-003	5.1300e-003	1.0000e-005	0.0000	5.4700e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0316					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2425					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1300e-003	5.1300e-003	1.0000e-005	0.0000	5.4700e-003
<b>Total</b>	<b>0.2744</b>	<b>2.0000e-005</b>	<b>2.6400e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.1300e-003</b>	<b>5.1300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.4700e-003</b>



West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

**6.2 Area by SubCategory**

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0316					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2425					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1300e-003	5.1300e-003	1.0000e-005	0.0000	5.4700e-003
<b>Total</b>	<b>0.2744</b>	<b>2.0000e-005</b>	<b>2.6400e-003</b>	<b>0.0000</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>		<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.1300e-003</b>	<b>5.1300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>5.4700e-003</b>

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	36.7410	0.1819	4.5600e-003	42.6461
Unmitigated	36.7410	0.1819	4.5600e-003	42.6461

**7.2 Water by Land Use**

**Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	3.18841 / 1.95419	21.1571	0.1047	2.6300e-003	24.5576
Gasoline/Service Station	0.0664094 / 0.0407026	0.4407	2.1800e-003	5.0000e-005	0.5115
General Office Building	2.2821 / 1.39871	15.1432	0.0750	1.8800e-003	17.5771
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>36.7410</b>	<b>0.1819</b>	<b>4.5600e-003</b>	<b>42.6461</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

**7.2 Water by Land Use**

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Automobile Care Center	3.18841 / 1.95419	21.1571	0.1047	2.6300e-003	24.5576
Gasoline/Service Station	0.0664094 / 0.0407026	0.4407	2.1800e-003	5.0000e-005	0.5115
General Office Building	2.2821 / 1.39871	15.1432	0.0750	1.8800e-003	17.5771
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>36.7410</b>	<b>0.1819</b>	<b>4.5600e-003</b>	<b>42.6461</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

**Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	29.2490	1.7286	0.0000	72.4631
Unmitigated	29.2490	1.7286	0.0000	72.4631

**8.2 Waste by Land Use**

**Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	129.46	26.2792	1.5531	0.0000	65.1056
Gasoline/Service Station	2.69	0.5461	0.0323	0.0000	1.3528
General Office Building	11.94	2.4237	0.1432	0.0000	6.0046
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>29.2490</b>	<b>1.7286</b>	<b>0.0000</b>	<b>72.4631</b>

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

**8.2 Waste by Land Use**

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Automobile Care Center	129.46	26.2792	1.5531	0.0000	65.1056
Gasoline/Service Station	2.69	0.5461	0.0323	0.0000	1.3528
General Office Building	11.94	2.4237	0.1432	0.0000	6.0046
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>29.2490</b>	<b>1.7286</b>	<b>0.0000</b>	<b>72.4631</b>

**9.0 Operational Offroad**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

West Valley Connector O&M Facility - San Bernardino-South Coast County, Annual

Equipment Type	Number
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## 11.0 Vegetation

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## Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Pomona

iADAM

	2012		2013		2014	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 30	0.117	Jun 29	0.125	Sep 13	0.123
Second High:	Sep 3	0.116	May 12	0.119	Aug 30	0.122
Third High:	Aug 8	0.115	Jun 1	0.117	Sep 14	0.118
Fourth High:	Aug 11	0.110	Jul 8	0.111	Oct 5	0.114
California:						
# Days Above the Standard:		21		12		22
California Designation Value:		0.12		0.12		0.12
Expected Peak Day Concentration:		0.116		0.117		0.120
National:						
# Days Above the Standard:		0		1		0
3-Year Estimated Expected Number of Exceedance Days:		0.0		0.4		0.4
1-Year Estimated Expected Number of Exceedance Days:		0.0		1.1		0.0
Nat'l Standard Design Value:		0.115		0.117		0.119
Year Coverage:		97		92		96

### Notes:

Hourly ozone measurements and related statistics are available at Pomona between 1978 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Pomona

iADAM

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Sep 13	0.123	Aug 16	0.136	Jul 22	0.127
Second High:	Aug 30	0.122	Sep 19	0.126	Aug 30	0.120
Third High:	Sep 14	0.118	May 30	0.122	Jul 23	0.119
Fourth High:	Oct 5	0.114	Aug 15	0.119	Jun 17	0.115
California:						
# Days Above the Standard:		22		30		20
California Designation Value:		0.12		0.13		0.13
Expected Peak Day Concentration:		0.120		0.126		0.126
National:						
# Days Above the Standard:		0		2		1
3-Year Estimated Expected Number of Exceedance Days:		0.4		1.1		1.1
1-Year Estimated Expected Number of Exceedance Days:		0.0		2.2		1.0
Nat'l Standard Design Value:		0.119		0.123		0.123
Year Coverage:		96		89		97

### Notes:

Hourly ozone measurements and related statistics are available at Pomona between 1978 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.





## Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Pomona

iADAM

	2012		2013		2014	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Aug 11	0.092	Jun 29	0.099	Aug 30	0.099
Second High:	Sep 30	0.087	May 12	0.092	Oct 5	0.097
Third High:	Sep 3	0.086	Jun 1	0.092	Sep 13	0.093
Fourth High:	Aug 12	0.085	Sep 15	0.085	Jul 3	0.090
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		28		22		53
Nat'l Standard Design Value:		0.082		0.085		0.086
National Year Coverage:		96		92		96

### Notes:

Eight-hour ozone averages and related statistics are available at Pomona between 1978 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Pomona

iADAM

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Aug 30	0.099	Jun 17	0.098	Jun 4	0.092
Second High:	Oct 5	0.097	Aug 16	0.096	Jul 22	0.091
Third High:	Sep 13	0.093	Jun 18	0.095	Jun 2	0.088
Fourth High:	Jul 3	0.090	Jun 19	0.094	Aug 30	0.087
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		53		53		26
Nat'l Standard Design Value:		0.086		0.089		0.090
National Year Coverage:		96		89		99

### Notes:

Eight-hour ozone averages and related statistics are available at Pomona between 1978 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

at Pomona

iADAM

	2012		2013		2014	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Jan 15	1.47		*		*
Second High:	Jan 12	1.35		*		*
Third High:	Jan 15	1.30		*		*
Fourth High:	Jan 11	1.25		*		*
California:						
First High:	Jan 14	1.47		*		*
Second High:	Jan 11	1.35		*		*
Third High:	Jan 15	1.27		*		*
Fourth High:	Jan 19	1.19		*		*
National:						
# Days Above the Standard:		0		0		0
California:						
# Days Above the Standard:		0		0		0
Expected Peak Day Concentration:		1.63				
Year Coverage:		51		*		*

### Notes:

Eight-hour carbon monoxide averages and related statistics are available at Pomona between 1965 and 2012.

Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Pomona

iADAM

	2012		2013		2014	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Oct 17	81.6	Nov 12	78.8	Feb 14	88.9
Second High:	Oct 1	74.2	Mar 12	73.1	Oct 23	71.1
Third High:	Oct 30	62.7	Nov 11	72.7	Feb 15	67.2
Fourth High:	Oct 27	62.4	Oct 25	69.2	Oct 24	65.5
California:						
First High:	Oct 17	81	Nov 12	78	Feb 14	88
Second High:	Oct 1	74	Mar 12	73	Oct 23	71
Third High:	Apr 17	62	Nov 11	72	Feb 15	67
Fourth High:	Oct 27	62	Oct 25	69	Oct 24	65
National:						
1-Hour Standard Design Value:		67		64		63
1-Hour Standard 98th Percentile:		60.6		64.7		63.8
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		21		23		22
California:						
1-Hour Std Designation Value:		80		80		70
Expected Peak Day Concentration:		81		76		72
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		26		24		22
Annual Average:		21		22		22
Year Coverage:		97		98		97

### Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Pomona between 1965 and 2016.

Some years in this range may not be represented.

All concentrations expressed in parts per billion.



## Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Pomona

iADAM

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Feb 14	88.9	Dec 9	72.3	Feb 12	69.3
Second High:	Oct 23	71.1	Feb 5	68.9	Oct 27	68.3
Third High:	Feb 15	67.2	Mar 10	67.6	Feb 13	66.8
Fourth High:	Oct 24	65.5	Feb 4	67.5	Nov 7	66.1
California:						
First High:	Feb 14	88	Dec 9	72	Feb 12	69
Second High:	Oct 23	71	Feb 5	68	Oct 27	68
Third High:	Feb 15	67	Feb 4	67	Feb 13	66
Fourth High:	Oct 24	65	Mar 10	67	Nov 7	66
National:						
1-Hour Standard Design Value:		63		63		62
1-Hour Standard 98th Percentile:		63.8		60.3		62.5
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		22		21		20
California:						
1-Hour Std Designation Value:		70		70		70
Expected Peak Day Concentration:		72		73		71
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		22		22		22
Annual Average:		22		21		20
Year Coverage:		97		96		92

### Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Pomona between 1965 and 2016.

Some years in this range may not be represented.

All concentrations expressed in parts per billion.



## Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Ontario-1408 Francis Street

iADAM

	2012		2013		2014	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Oct 30	59.0	Nov 12	117.0	Jan 29	67.0
Second High:	May 21	56.0	Oct 25	73.0	Jan 23	66.0
Third High:	Aug 7	56.0	Jul 9	57.0	Jan 11	56.0
Fourth High:	May 9	54.0	Oct 7	52.0	Mar 24	52.0
California:						
First High:	Oct 30	57.0	Nov 12	113.0	Jan 29	65.0
Second High:	May 21	54.0	Oct 25	71.0	Jan 23	63.0
Third High:	Aug 7	54.0	Jul 9	55.0	Jan 11	53.0
Fourth High:	May 9	53.0	Oct 7	50.0	Mar 24	49.0
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		*
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		*
Annual Average:		31.9		35.0		34.2
3-Year Average:		32		33		34
California:						
Estimated # Days > 24-Hour Std:		24.0		18.8		*
Measured # Days > 24-Hour Std:		4		3		3
Annual Average:		30.9		33.9		*
3-Year Maximum Annual Average:		32		34		34
Year Coverage:		100		96		31

### Notes:

Daily PM10 averages and related statistics are available at Ontario-1408 Francis Street between 1998 and 2014. Some years in this range may not be represented.

All averages expressed in micrograms per cubic meter.



## Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Ontario-1408 Francis Street

iADAM

	2012		2013		2014	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Nov 26	35.2	Oct 25	49.3	Jan 11	34.6
Second High:	Jan 7	29.2	Mar 20	29.8	Feb 19	29.6
Third High:	Nov 2	28.6	Feb 6	26.8	Jan 8	25.6
Fourth High:	Dec 8	28.5	Mar 17	26.6	Mar 24	23.2
California:						
First High:	Nov 26	35.2	Oct 25	49.3	Jan 29	38.4
Second High:	Jan 7	29.2	Mar 20	29.8	Jan 11	34.6
Third High:	Nov 2	28.6	Feb 6	26.8	Jan 23	29.6
Fourth High:	Dec 8	28.5	Mar 17	26.6	Feb 19	29.6
National:						
Estimated # Days > 24-Hour Std:		0.0		*		*
Measured # Days > 24-Hour Std:		0		1		0
24-Hour Standard Design Value:		32		*		*
24-Hour Standard 98th Percentile:		28.6		*		*
2006 Annual Std Design Value:		12.9		*		*
2013 Annual Std Design Value:		12.9		12.6		*
Annual Average:		12.4		*		*
California:						
Annual Std Designation Value:		12		12		12
Annual Average:		12.4		*		*
Year Coverage:		97		87		29

### Notes:

Daily PM2.5 averages and related statistics are available at Ontario-1408 Francis Street between 1999 and 2014. Some years in this range may not be represented.



## Top 4 Summary: Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages

### at Fontana-Arrow Highway

	2012		2013		2014	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National:						
First High:	Feb 9	1.76		*		*
Second High:	Feb 8	1.40		*		*
Third High:	Jan 11	1.04		*		*
Fourth High:	Jan 14	0.90		*		*
California:						
First High:	Feb 9	1.76		*		*
Second High:	Feb 8	1.40		*		*
Third High:	Jan 11	1.04		*		*
Fourth High:	Jan 14	0.90		*		*
National:						
# Days Above the Standard:		0		0		0
California:						
# Days Above the Standard:		0		0		0
Expected Peak Day Concentration:		1.28				
Year Coverage:		46		*		*

#### Notes:

Eight-hour carbon monoxide averages and related statistics are available at Fontana-Arrow Highway between 1981 and 2012. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.





## Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

### at Fontana-Arrow Highway

	2012		2013		2014	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Oct 29	69.1	Nov 11	81.7	Oct 23	70.4
Second High:	Jul 10	68.9	Nov 12	79.4	Feb 14	70.2
Third High:	Oct 3	65.8	Oct 18	69.5	Oct 3	68.4
Fourth High:	Oct 31	64.6	Oct 25	67.1	Jan 11	66.5
California:						
First High:	Oct 29	69	Nov 11	81	Feb 14	70
Second High:	Jul 10	68	Nov 12	79	Oct 23	70
Third High:	Oct 3	65	Oct 18	69	Oct 3	68
Fourth High:	Oct 31	64	Oct 25	67	Jan 11	66
National:						
1-Hour Standard Design Value:		64		62		62
1-Hour Standard 98th Percentile:		61.1		60.5		63.6
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		22		21		20
California:						
1-Hour Std Designation Value:		70		80		70
Expected Peak Day Concentration:		74		75		74
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		23		21		21
Annual Average:		21		20		*
Year Coverage:		94		92		89

#### Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Fontana-Arrow Highway between 1982 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per billion.



## Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

### at Fontana-Arrow Highway

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Oct 23	70.4	Feb 4	89.1	Feb 12	71.7
Second High:	Feb 14	70.2	Feb 5	80.3	Feb 25	67.5
Third High:	Oct 3	68.4	Jan 19	75.4	Oct 27	63.7
Fourth High:	Jan 11	66.5	Mar 9	73.6	Nov 14	60.0
California:						
First High:	Feb 14	70	Feb 4	89	Feb 12	71
Second High:	Oct 23	70	Feb 5	80	Feb 25	67
Third High:	Oct 3	68	Jan 19	75	Oct 27	63
Fourth High:	Jan 11	66	Mar 9	73	Nov 14	60
National:						
1-Hour Standard Design Value:		62		64		63
1-Hour Standard 98th Percentile:		63.6		68.5		56.9
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		20		19		18
California:						
1-Hour Std Designation Value:		70		80		80
Expected Peak Day Concentration:		74		78		76
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		21		20		18
Annual Average:		*		18		18
Year Coverage:		89		91		93

#### Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Fontana-Arrow Highway between 1982 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per billion.



## Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

### at Fontana-Arrow Highway

	2012		2013		2014	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Aug 11	0.142	Jun 29	0.151	Oct 5	0.127
Second High:	Aug 13	0.133	Jun 1	0.146	Aug 30	0.123
Third High:	Aug 7	0.128	Sep 14	0.124	Jul 3	0.116
Fourth High:	Sep 3	0.126	Jun 30	0.120	Jul 24	0.116
California:						
# Days Above the Standard:		60		34		31
California Designation Value:		0.14		0.14		0.13
Expected Peak Day Concentration:		0.138		0.139		0.134
National:						
# Days Above the Standard:		5		2		1
3-Year Estimated Expected Number of Exceedance Days:		3.9		3.9		2.8
1-Year Estimated Expected Number of Exceedance Days:		5.2		2.1		1.2
Nat'l Standard Design Value:		0.140		0.142		0.133
Year Coverage:		97		92		91

#### Notes:

Hourly ozone measurements and related statistics are available at Fontana-Arrow Highway between 1981 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

### at Fontana-Arrow Highway

	2014		2015		2016	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Oct 5	0.127	Jun 20	0.133	Jul 22	0.139
Second High:	Aug 30	0.123	May 30	0.127	Aug 30	0.129
Third High:	Jul 3	0.116	Sep 26	0.125	Jun 2	0.127
Fourth High:	Jul 24	0.116	Jun 18	0.123	Jun 29	0.121
California:						
# Days Above the Standard:		31		36		34
California Designation Value:		0.13		0.13		0.13
Expected Peak Day Concentration:		0.134		0.129		0.128
National:						
# Days Above the Standard:		1		3		3
3-Year Estimated Expected Number of Exceedance Days:		2.8		2.2		2.6
1-Year Estimated Expected Number of Exceedance Days:		1.2		3.3		3.2
Nat'l Standard Design Value:		0.133		0.127		0.127
Year Coverage:		91		87		92

#### Notes:

Hourly ozone measurements and related statistics are available at Fontana-Arrow Highway between 1981 and 2016. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

### at Fontana-Arrow Highway

	2012		2013		2014	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Aug 11	0.110	Jun 29	0.122	Aug 30	0.105
Second High:	Aug 12	0.108	Jun 1	0.111	Oct 5	0.096
Third High:	Aug 5	0.106	Sep 14	0.105	Jul 3	0.095
Fourth High:	Aug 9	0.106	Jul 14	0.100	Jul 13	0.093
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		85		66		52
Nat'l Standard Design Value:		0.101		0.103		0.099
National Year Coverage:		97		92		90

#### Notes:

Eight-hour ozone averages and related statistics are available at Fontana-Arrow Highway between 1981 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

### at Fontana-Arrow Highway

	2014		2015		2016	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Aug 30	0.105	Jun 20	0.111	Jun 29	0.105
Second High:	Oct 5	0.096	Jun 19	0.105	Jun 2	0.103
Third High:	Jul 3	0.095	May 30	0.103	Jul 22	0.101
Fourth High:	Jul 13	0.093	Jun 17	0.100	Jun 4	0.098
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		52		57		49
Nat'l Standard Design Value:		0.099		0.097		0.097
National Year Coverage:		90		89		93

#### Notes:

Eight-hour ozone averages and related statistics are available at Fontana-Arrow Highway between 1981 and 2016. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.



## Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

### at Fontana-Arrow Highway

	2012		2013		2014	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
<b>National:</b>						
First High:	May 21	67.0	Nov 12	90.0	Mar 24	68.0
Second High:	May 9	65.0	Oct 25	83.0	Jan 29	64.0
Third High:	Aug 7	63.0	Jul 9	77.0	Apr 17	63.0
Fourth High:	Oct 30	55.0	Jul 15	70.0	Jul 4	59.0
<b>California:</b>						
First High:	May 21	65.0	Nov 12	86.0	Mar 24	65.0
Second High:	May 9	62.0	Oct 25	79.0	Jan 29	61.0
Third High:	Aug 7	60.0	Jul 9	74.0	Apr 17	60.0
Fourth High:	Oct 30	53.0	Jul 15	67.0	Jul 4	57.0
<b>National:</b>						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		0.0		0.0
<i>Annual Average:</i>		34.3		40.7		39.7
<i>3-Year Average:</i>		33		36		38
<b>California:</b>						
Estimated # Days > 24-Hour Std:		29.7		90.2		*
Measured # Days > 24-Hour Std:		5		15		10
<i>Annual Average:</i>		32.9		38.8		*
<i>3-Year Maximum Annual Average:</i>		33		39		39
<i>Year Coverage:</i>		100		100		93

#### Notes:

Daily PM10 averages and related statistics are available at Fontana-Arrow Highway between 1988 and 2016.  
 Some years in this range may not be represented.  
 All averages expressed in micrograms per cubic meter.



## Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

### at Fontana-Arrow Highway

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Mar 24	68.0	Jun 29	96.0	Jul 5	94.0
Second High:	Jan 29	64.0	Jul 5	75.0	Jul 23	71.0
Third High:	Apr 17	63.0	Jul 17	70.0	Dec 2	71.0
Fourth High:	Jul 4	59.0	Aug 28	66.0	Apr 6	62.0
California:						
First High:	Mar 24	65.0	Jun 29	92.0		*
Second High:	Jan 29	61.0	Jul 5	72.0		*
Third High:	Apr 17	60.0	Jul 17	67.0		*
Fourth High:	Jul 4	57.0	Aug 28	63.0		*
National:						
Estimated # Days > 24-Hour Std:		0.0		*		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		0.0		*		*
Annual Average:		39.7		34.4		38.4
3-Year Average:		38		38		38
California:						
Estimated # Days > 24-Hour Std:		*		*		*
Measured # Days > 24-Hour Std:		10		13		*
Annual Average:		*		*		*
3-Year Maximum Annual Average:		39		39		*
Year Coverage:		93		88		100

#### Notes:

Daily PM10 averages and related statistics are available at Fontana-Arrow Highway between 1988 and 2016.  
 Some years in this range may not be represented.  
 All averages expressed in micrograms per cubic meter.





## Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

### at Fontana-Arrow Highway

	2012		2013		2014	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Jul 5	39.9	Oct 25	43.6	Nov 10	34.5
Second High:	Nov 2	36.0	Mar 20	34.3	Feb 19	33.6
Third High:	Nov 26	35.6	Feb 6	33.1	Jan 29	31.1
Fourth High:	Jan 19	28.6	Mar 17	32.2	Jan 11	31.0
California:						
First High:	Jul 5	39.9	Oct 25	43.6	Jul 25	34.9
Second High:	Nov 2	36.0	Mar 20	34.3	Nov 10	34.5
Third High:	Nov 26	35.6	Feb 6	33.1	Feb 19	33.6
Fourth High:	Jan 19	28.6	Mar 17	32.2	Jan 29	31.1
National:						
Estimated # Days > 24-Hour Std:		10.6		3.0		*
Measured # Days > 24-Hour Std:		3		1		0
24-Hour Standard Design Value:		32		32		*
24-Hour Standard 98th Percentile:		35.6		33.1		*
2006 Annual Std Design Value:		12.4		12.6		*
2013 Annual Std Design Value:		12.4		12.6		*
Annual Average:		12.8		12.2		*
California:						
Annual Std Designation Value:		*		12		12
Annual Average:		*		12.3		*
Year Coverage:		88		99		30

#### Notes:

Daily PM2.5 averages and related statistics are available at Fontana-Arrow Highway between 1999 and 2016. Some years in this range may not be represented.



## Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

### at Fontana-Arrow Highway

	2014		2015		2016	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Nov 10	34.5	Jul 5	50.5	Jul 5	58.8
Second High:	Feb 19	33.6	Feb 20	47.3	Dec 11	30.4
Third High:	Jan 29	31.1	Jan 9	37.7	Oct 27	28.9
Fourth High:	Jan 11	31.0	Jan 3	34.3	Jan 16	26.2
California:						
First High:	Jul 25	34.9	Jul 5	50.5	Jul 5	58.8
Second High:	Nov 10	34.5	Feb 20	47.3	Dec 11	30.4
Third High:	Feb 19	33.6	Jan 9	37.7	Oct 27	28.9
Fourth High:	Jan 29	31.1	Jan 3	34.3	Jan 16	26.2
National:						
Estimated # Days > 24-Hour Std:		*		10.4		3.2
Measured # Days > 24-Hour Std:		0		3		1
24-Hour Standard Design Value:		*		*		*
24-Hour Standard 98th Percentile:		*		37.7		28.9
2006 Annual Std Design Value:		*		*		*
2013 Annual Std Design Value:		*		*		*
Annual Average:		*		11.0		12.3
California:						
Annual Std Designation Value:		12		12		11
Annual Average:		*		11.0		*
Year Coverage:		30		93		95

#### Notes:

Daily PM2.5 averages and related statistics are available at Fontana-Arrow Highway between 1999 and 2016. Some years in this range may not be represented.



## Top 4 Summary: Highest 4 Daily Maximum State 24-Hour Sulfur Dioxide Averages

### at Fontana-Arrow Highway

	2012		2013		2014	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
First High:	Feb 7	0.004	Jan 4	0.001		*
Second High:	Jan 10	0.003	Jan 9	0.001		*
Third High:	Jan 12	0.003	Feb 13	0.001		*
Fourth High:	Jan 14	0.003	Feb 1	0.001		*
Annual Average:		*		*		*
Year Coverage:		33		*		*

#### Notes:

Hourly sulfur dioxide measurements and related statistics are available at Fontana-Arrow Highway between 1981 and 2012. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

\* means there was insufficient data available to determine the value.

# **APPENDIX B – PM CONFORMITY HOT SPOT ANALYSIS AND TCWG MINUTES**



<b>RTIP ID#</b> SBD4 120213			
<b>TCWG Consideration Date</b> December 5, 2017			
<b>Project Description</b>			
<p>The San Bernardino County Transportation Authority—in cooperation with the cities of Pomona, Montclair, Ontario, Rancho Cucamonga, and Fontana—proposes implementation of the West Valley Connector Project, a 35-mile-long bus rapid transit (BRT) project that will provide speed and quality improvements to the public transit system within the corridor and increase ridership. The proposed project is located primarily at the eastern end of Los Angeles County in the City of Pomona and at the southwestern end of San Bernardino County in the cities of Montclair, Ontario, Rancho Cucamonga, and Fontana. The proposed project alignment is generally running along Holt Boulevard/Avenue and Foothill Boulevard. The project limits are bounded on the north by Church Street, on the west by Main Street, on the east by Sierra Avenue, and on the south by Ontario International Airport (see Figure 1 and Figure 2). The project includes BRT stations at 33 locations/major intersections and associated improvements, premium transit service, Transit Signal Priority and queue jump lanes, dedicated lanes, and integration with other bus routes.</p> <p>The project alignment consists of two phases. Phase I of the project would construct the “Milliken Alignment”, from the Regional Transit Center in Pomona to Victoria Gardens in Rancho Cucamonga. Phase II of the project would construct the “Haven Alignment”, from Ontario International Airport to Kaiser Permanente Medical Center in Fontana. The Phase I Milliken Alignment would be constructed first and is proposed to have 10-minute peak and 15-minute off-peak headways. Phase II is intended to be constructed immediately following the completion of Phase I, depending on the availability of funding, and is proposed to have 20-minute peak and 30-minute off-peak headways.</p> <p>Several alternatives were considered during the project development phase of the project. A No Build Alternative and two build alternatives (Alternatives A and B) are being analyzed in the Environmental Assessment (see Figure 3):</p> <ul style="list-style-type: none"> <li>• No Build Alternative – Involves no improvements to existing bus services, which maintain current service of 15-minute headways (total of four buses per hour in each direction) along Routes 61 and 66.</li> <li>• Build Alternative A – Full BRT corridor with 60 side-running stations at 33 locations/major intersections. No dedicated bus-only lanes.</li> <li>• Build Alternative B – Full BRT with Dedicated Bus-only lanes in Ontario. With exception to the 3.5-mile Dedicated Bus-only lanes in Ontario, the remainder of “Alternative B” is identical to “Alternative A”. Within the 3.5-mile Dedicated Bus-only segment proposed for “Alternative B”, “Alternative A” plans for side running stations instead of center running stations. The dedicated lanes would include two mixed-flow lanes and one transit lane in each direction. To accommodate the dedicated lanes, roadway widening, and additional utilities, this alternative requires permanent and temporary right-of-way acquisitions.</li> </ul>			
<b>Type of Project</b> Bus, rail, or inter-modal facility/terminal/transfer point.			
<b>County</b> San Bernardino	<b>Narrative Location/Route &amp; Postmiles</b> From the Metrolink station on S Garey Ave in Pomona, extending eastward along Holt Ave/Blvd to the Ontario Airport, then along Foothill Blvd through Rancho Cucamonga to Sierra Ave in Fontana, turning south and terminating at Kaiser Permanente Medical Center in Fontana.		
<b>Lead Agency:</b> San Bernardino County Transportation Authority			
<b>Contact Person</b> Andres Ramirez	<b>Phone#</b> (909) 884-	<b>Fax#</b>	<b>Email</b> aramirez@gosbcta.com
<b>Hot Spot Pollutant of Concern</b> (check one or both) <b>PM2.5</b> <input checked="" type="checkbox"/> <b>PM10</b> <input checked="" type="checkbox"/>			

Federal Action for which Project-Level PM Conformity is Needed				
Categorical Exclusion (NEPA)	<input checked="" type="checkbox"/> EA or Draft EIS	FONS I or Final EIS	PS&E or Construction	Other
Scheduled Date of Federal Action: August 2018				
NEPA Assignment – Project Type				
Exempt		Section 326 – Categorical Exemption	<input checked="" type="checkbox"/> Section 327 – Non-Categorical Exemption	
Current Programming Dates (as appropriate)				
	PE/Environmental	ENG	ROW	CON
Start	11/15	7/18	3/19	8/20
End	8/18	4/20	8/20	6/22
<p><b>Project Purpose and Need (Summary):</b>                      The purpose of the proposed project is to improve corridor mobility and transit efficiency in the San Bernardino Valley from the City of Pomona to the City of Fontana with an enhanced, state-of-the-art BRT system. The proposed project would address the growing traffic congestion and travel demands of the one million people that would be added to San Bernardino County by 2030. Improved rapid transit along the project corridor would help SBCTA/Omnitrans achieve its long-range goals to cost effectively enhance lifeline mobility and accessibility, improve transit operations, increase ridership, support economic growth and redevelopment, conserve nonrenewable resources, and improve corridor safety.</p> <p>Recognizing the importance of the West Valley Connector transit corridor, SBCTA proposes a project that is designed to achieve the following objectives:</p> <ul style="list-style-type: none"> <li>• Improve transit service by better accommodating high existing bus ridership.</li> <li>• Improve ridership by providing a viable and competitive transit alternative to the automobile.</li> <li>• Improve efficiency of transit service delivery while lowering Omnitrans' operating costs per rider.</li> <li>• Support local and regional planning goals to organize development along transit corridors and around transit stations.</li> </ul> <p>The project purpose and objectives stated above would respond to the following needs:</p> <ul style="list-style-type: none"> <li>• Current and future population and employment conditions establish a need for higher-quality transit service.</li> <li>• Current and future transportation conditions establish a need for an improved transit system.</li> <li>• Transit-related opportunities exist in the project area.</li> </ul>				
<p><b>Surrounding Land Use/Traffic Generators (especially effect on diesel traffic)</b>                      The 35-mile project corridor transects portions of the cities of Pomona, Montclair, Ontario, Rancho Cucamonga, and Fontana. These municipal areas are characterized by various types of land uses and traffic generators. The corridor includes areas of substantial residential, retail, commercial, medical, and industrial land uses as well as the Ontario International Airport.</p>				

PM Conformity Hot Spot Analysis – Project Summary for Interagency Consultation

Opening Year: AADT, % and # trucks, truck AADT of proposed facility														
Jurisdiction	Route	From	To	Year 2020										
				No Build ADT	No Build Truck %	No Build Truck ADT	Alt A ADT	Alt A Truck %	Alt A Truck ADT	Alt A Truck Volume Change	Alt B ADT	Alt B Truck %	Alt B Truck ADT	Alt B Truck Volume Change
Pomona	Holt Blvd	East End Ave	Via Del Paseo	32,938	4.02%	1326	33,388	3.97%	1,326	0	33,388	3.97%	1,326	0
Pomona	Holt Blvd	Via Del Paseo	Indian Hill Blvd	31,338	4.02%	1261	31,788	3.97%	1,261	0	31,788	3.97%	1,261	0
Montclair	Holt Blvd	Mills Ave	Amherst Ave	23,850	3.24%	772	24,300	3.18%	772	0	24,300	3.18%	772	0
Montclair	Holt Blvd	Amherst Ave	Ramona Ave	23,600	3.24%	764	24,050	3.18%	764	0	24,050	3.18%	764	0
Ontario	Holt Blvd	Euclid Ave	Plum Ave	23,538	2.46%	578	23,988	2.41%	578	0	23,013	2.51%	578	0
Ontario	Holt Blvd	Plum Ave	Sultana Ave	23,288	2.46%	572	23,738	2.41%	572	0	24,175	2.37%	572	0
Ontario	Holt Blvd	Sultana Ave	Campus Ave	23,963	2.46%	589	24,413	2.41%	589	0	24,563	2.40%	589	0
Ontario	Inland Empire Blvd	Center Ave	Haven Ave	16,288	4.80%	782	16,963	4.61%	782	0	16,963	4.61%	782	0
Ontario	Inland Empire Blvd	Haven Ave	Porsche Wy	17,438	4.80%	837	17,888	4.68%	837	0	17,888	4.68%	837	0
Rancho Cucamonga	Milliken Ave	7th St	Jersey Blvd	39,625	4.80%	1902	40,075	4.75%	1,902	0	40,075	4.75%	1,902	0
Rancho Cucamonga	Milliken Ave	Jersey Blvd	Arrow Rte	37,900	4.80%	1820	38,350	4.74%	1,820	0	38,350	4.74%	1,820	0
Rancho Cucamonga	Foothill Blvd	Day Creek Blvd	I-15 SB Ramps	65,463	1.89%	1234	65,688	1.88%	1,234	0	65,688	1.88%	1,234	0
Rancho Cucamonga	Foothill Blvd	I-15 SB Ramps	I-15 NB Ramps	50,113	1.89%	945	50,338	1.88%	945	0	50,338	1.88%	945	0
Fontana	Foothill Blvd	Almeria Ave	Tokay Ave	27,850	1.89%	525	28,075	1.87%	525	0	28,075	1.87%	525	0
Fontana	Foothill Blvd	Tokay Ave	Citrus Ave	29,450	1.89%	555	29,675	1.87%	555	0	29,675	1.87%	555	0
Fontana	Sierra Ave	Merrill Ave	Randall Ave	28,938	2.12%	613	29,163	2.10%	613	0	29,163	2.10%	613	0
Fontana	Sierra Ave	Randall Ave	San Bernardino Ave	31,563	2.12%	668	31,788	2.10%	668	0	31,788	2.10%	668	0



PM Conformity Hot Spot Analysis – Project Summary for Interagency Consultation

**Opening Year: Build and No Build LOS**

Jurisdiction	Route	Intersecting Signal	Year 2020 - AM Peak Hour			Year 2020 - PM Peak Hour		
			No Build	Alt A	Alt B	No Build	Alt A	Alt B
Pomona	Holt Blvd	East End Ave	C	C	C	D	D	D
Pomona	Holt Blvd	Via Del Paseo	A	A	A	A	A	A
Montclair	Holt Blvd	Mills Ave	A	A	A	B	B	B
Montclair	Holt Blvd	Amherst Ave	A	A	A	A	A	A
Ontario	Holt Blvd	Euclid Ave	A	A	B	A	A	A
Ontario	Holt Blvd	Plum Ave	C	D	C	C	C	C
Ontario	Holt Blvd	Sultana Ave	A	A	A	A	A	A
Ontario	Inland Empire Blvd	Center Ave	B	B	B	C	C	C
Ontario	Inland Empire Blvd	Haven Ave	A	A	A	A	A	A
Rancho Cucamonga	Milliken Ave	7th St	B	B	B	B	B	B
Rancho Cucamonga	Milliken Ave	Jersey Blvd	C	C	C	E	E	E
Rancho Cucamonga	Foothill Blvd	Day Creek Blvd	B	B	B	B	B	B
Rancho Cucamonga	Foothill Blvd	I-15 SB Ramps	B	B	B	A	A	A
Fontana	Foothill Blvd	Almeria Ave	B	B	B	A	A	A
Fontana	Foothill Blvd	Tokay Ave	B	B	B	C	C	C
Fontana	Sierra Ave	Merrill Ave	C	B	B	B	B	B
Fontana	Sierra Ave	Randall Ave	C	C	C	D	D	D

PM Conformity Hot Spot Analysis – Project Summary for Interagency Consultation

RTP Horizon Year / Design Year: AADT, % and # trucks, truck AADT of proposed facility														
Jurisdiction	Route	From	To	Year 2040										
				No Build ADT	No Build Truck %	No Build Truck ADT	Alt A ADT	Alt A Truck %	Alt A Truck ADT	Alt A Truck Volume Change	Alt B ADT	Alt B Truck %	Alt B Truck ADT	Alt B Truck Volume Change
Pomona	Holt Blvd	East End Ave	Via Del Paseo	37,963	4.02%	1528	38,413	3.98%	1,528	0	38,413	3.98%	1,528	0
Pomona	Holt Blvd	Via Del Paseo	Indian Hill Blvd	34,925	4.02%	1406	35,375	3.97%	1,406	0	35,375	3.97%	1,406	0
Montclair	Holt Blvd	Mills Ave	Amherst Ave	27,963	3.24%	905	28,413	3.19%	905	0	28,413	3.19%	905	0
Montclair	Holt Blvd	Amherst Ave	Ramona Ave	26,563	3.24%	860	27,013	3.18%	860	0	27,013	3.18%	860	0
Ontario	Holt Blvd	Euclid Ave	Plum Ave	27,113	2.46%	666	27,563	2.42%	666	0	26,450	2.52%	666	0
Ontario	Holt Blvd	Plum Ave	Sultana Ave	26,838	2.46%	659	27,288	2.42%	659	0	27,725	2.38%	659	0
Ontario	Holt Blvd	Sultana Ave	Campus Ave	27,713	2.46%	681	28,163	2.42%	681	0	28,313	2.40%	681	0
Ontario	Inland Empire Blvd	Center Ave	Haven Ave	18,650	4.80%	895	19,325	4.63%	895	0	19,325	4.63%	895	0
Ontario	Inland Empire Blvd	Haven Ave	Porsche Wy	20,088	4.80%	964	20,538	4.70%	964	0	20,538	4.70%	964	0
Rancho Cucamonga	Milliken Ave	7th St	Jersey Blvd	42,238	4.80%	2028	42,688	4.75%	2,028	0	42,688	4.75%	2,028	0
Rancho Cucamonga	Milliken Ave	Jersey Blvd	Arrow Rte	40,975	4.80%	1967	41,425	4.75%	1,967	0	41,425	4.75%	1,967	0
Rancho Cucamonga	Foothill Blvd	Day Creek Blvd	I-15 SB Ramps	71,750	1.89%	1352	71,975	1.88%	1,352	0	71,975	1.88%	1,352	0
Rancho Cucamonga	Foothill Blvd	I-15 SB Ramps	I-15 NB Ramps	57,075	1.89%	1076	57,300	1.88%	1,076	0	57,300	1.88%	1,076	0
Fontana	Foothill Blvd	Almeria Ave	Tokay Ave	31,288	1.89%	590	31,513	1.87%	590	0	31,513	1.87%	590	0
Fontana	Foothill Blvd	Tokay Ave	Citrus Ave	33,275	1.89%	627	33,500	1.87%	627	0	33,500	1.87%	627	0
Fontana	Sierra Ave	Merrill Ave	Randall Ave	31,638	2.12%	670	31,863	2.10%	670	0	31,863	2.10%	670	0
Fontana	Sierra Ave	Randall Ave	San Bernardino Ave	34,125	2.12%	723	34,350	2.10%	723	0	34,350	2.10%	723	0

PM Conformity Hot Spot Analysis – Project Summary for Interagency Consultation

**RTP Horizon Year / Design Year: Build and No Build LOS**

Jurisdiction	Route	Intersecting Signal	Year 2040 - AM Peak Hour			Year 2040 - PM Peak Hour		
			No Build	Alt A	Alt B	No Build	Alt A	Alt B
Pomona	Holt Blvd	East End Ave	C	C	C	E	D	D
Pomona	Holt Blvd	Via Del Paseo	A	A	A	A	A	A
Montclair	Holt Blvd	Mills Ave	B	A	A	B	B	B
Montclair	Holt Blvd	Amherst Ave	A	A	A	A	A	A
Ontario	Holt Blvd	Euclid Ave	A	A	B	B	A	A
Ontario	Holt Blvd	Plum Ave	B	D	C	C	C	C
Ontario	Holt Blvd	Sultana Ave	A	A	A	A	A	A
Ontario	Inland Empire Blvd	Center Ave	B	B	B	D	C	C
Ontario	Inland Empire Blvd	Haven Ave	A	A	A	B	A	A
Rancho Cucamonga	Milliken Ave	7th St	B	B	B	C	B	B
Rancho Cucamonga	Milliken Ave	Jersey Blvd	C	C	C	F	E	E
Rancho Cucamonga	Foothill Blvd	Day Creek Blvd	B	B	B	B	B	B
Rancho Cucamonga	Foothill Blvd	I-15 SB Ramps	B	B	B	B	A	A
Fontana	Foothill Blvd	Almeria Ave	B	B	B	A	A	A
Fontana	Foothill Blvd	Tokay Ave	C	B	B	D	C	C
Fontana	Sierra Ave	Merrill Ave	C	B	B	C	B	B
Fontana	Sierra Ave	Randall Ave	C	C	C	E	D	D

<p><b>Opening Year: If facility is an interchange(s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT</b>                  The proposed project is not an interchange or intersection, and therefore these data are not applicable.</p> <p><b>RTP Horizon Year / Design Year: If facility is an interchange (s) or intersection(s), Build and No Build cross-street AADT, % and # trucks, truck AADT</b>                  The proposed project is not an interchange or intersection, and therefore these data are not applicable.</p>
<p><b>Describe potential traffic redistribution effects of congestion relief (<i>impact on other facilities</i>)</b>                  The proposed project would improve overall performance and reduce congestion within the project limits by providing a transportation mode alternative to passenger vehicles. The project will encourage patrons to use the BRT service instead of operating passenger vehicles, thereby reducing traffic volumes throughout the project corridor. The project will not result in additional diesel vehicle trips or passenger vehicle trips. Improved rapid transit along the project corridor would enhance lifeline mobility and accessibility, improve transit operations, increase ridership, and improve corridor safety.</p>
<p><b>Comments/Explanation/Details (<i>attach additional sheets as necessary</i>)</b>                  Under 40 CFR 93.123(b)—PM<sub>10</sub> and PM<sub>2.5</sub> Hot Spots—the following criteria are utilized to determine the potential for a proposed project to qualify as a Project of Air Quality Concern.</p> <p>(i) <i>New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;</i></p> <p>As shown in the tables above, the proposed project is a BRT project that would not result in a significant increase in the number of diesel vehicles along the 33.5-mile-long project corridor. There is no increase in daily truck traffic associated with implementation of the proposed project. Therefore, the proposed project would not result in a significant increase in the number of diesel vehicles and would not be considered a Project of Air Quality Concern under this criterion.</p> <p>(ii) <i>Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;</i></p> <p>The proposed project will not increase the number of diesel vehicles on the road. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.</p> <p>(iii) <i>New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;</i></p> <p>The proposed project would not implement a new bus or retail terminal or transfer point at which diesel vehicles would be congregating. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.</p> <p>(iv) <i>Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and</i></p> <p>The proposed project does not involve expansion of a bus or rail terminal or transfer point. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.</p> <p>(v) <i>Projects in or affecting locations, areas, or categories of sites which are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.</i></p> <p>The proposed project is not in or affecting a site of PM<sub>10</sub> or PM<sub>2.5</sub> air quality standard violation. Therefore, the proposed project would not be considered a Project of Air Quality Concern under this criterion.</p>

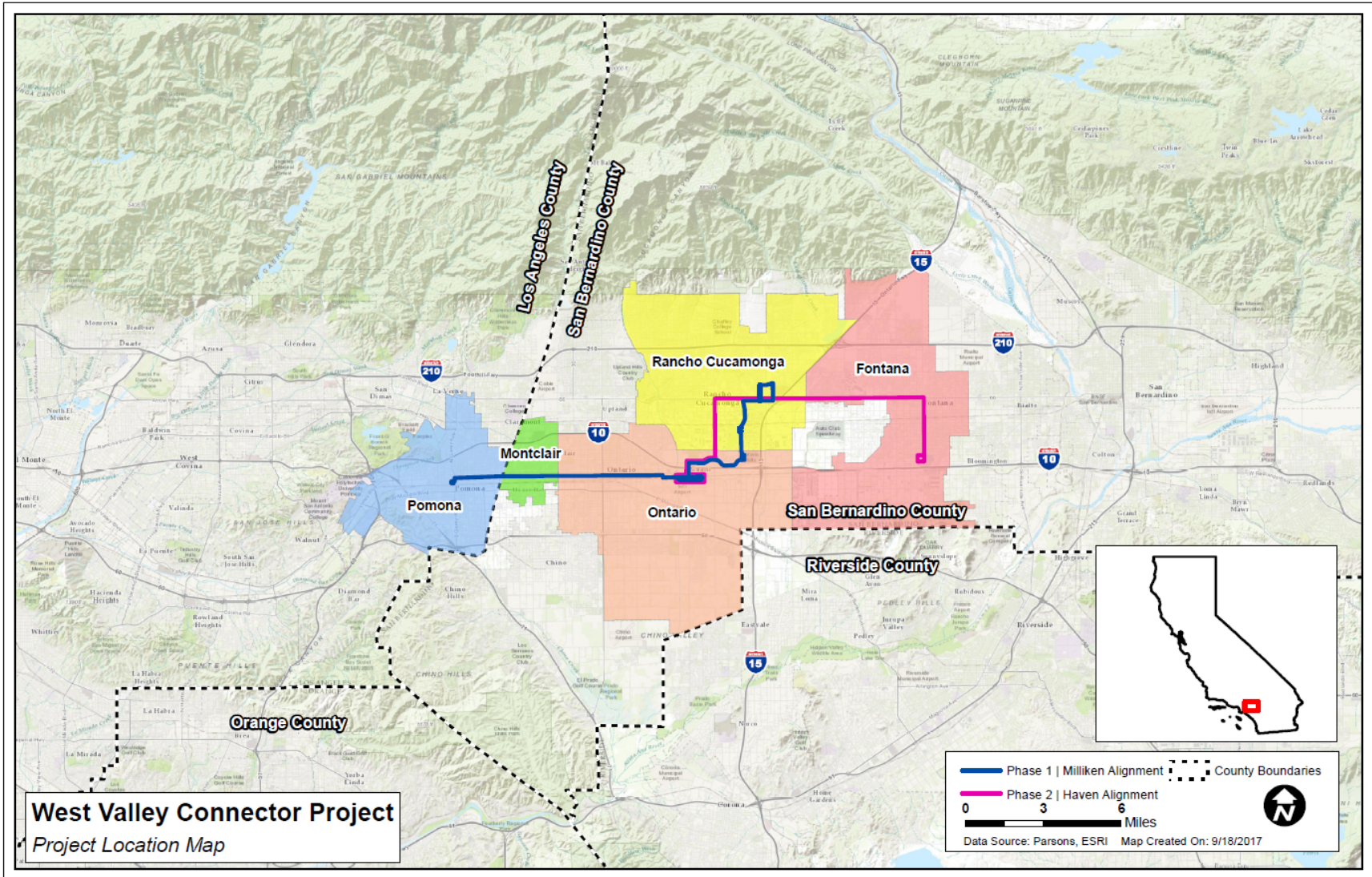


Figure 1 Project Location Map

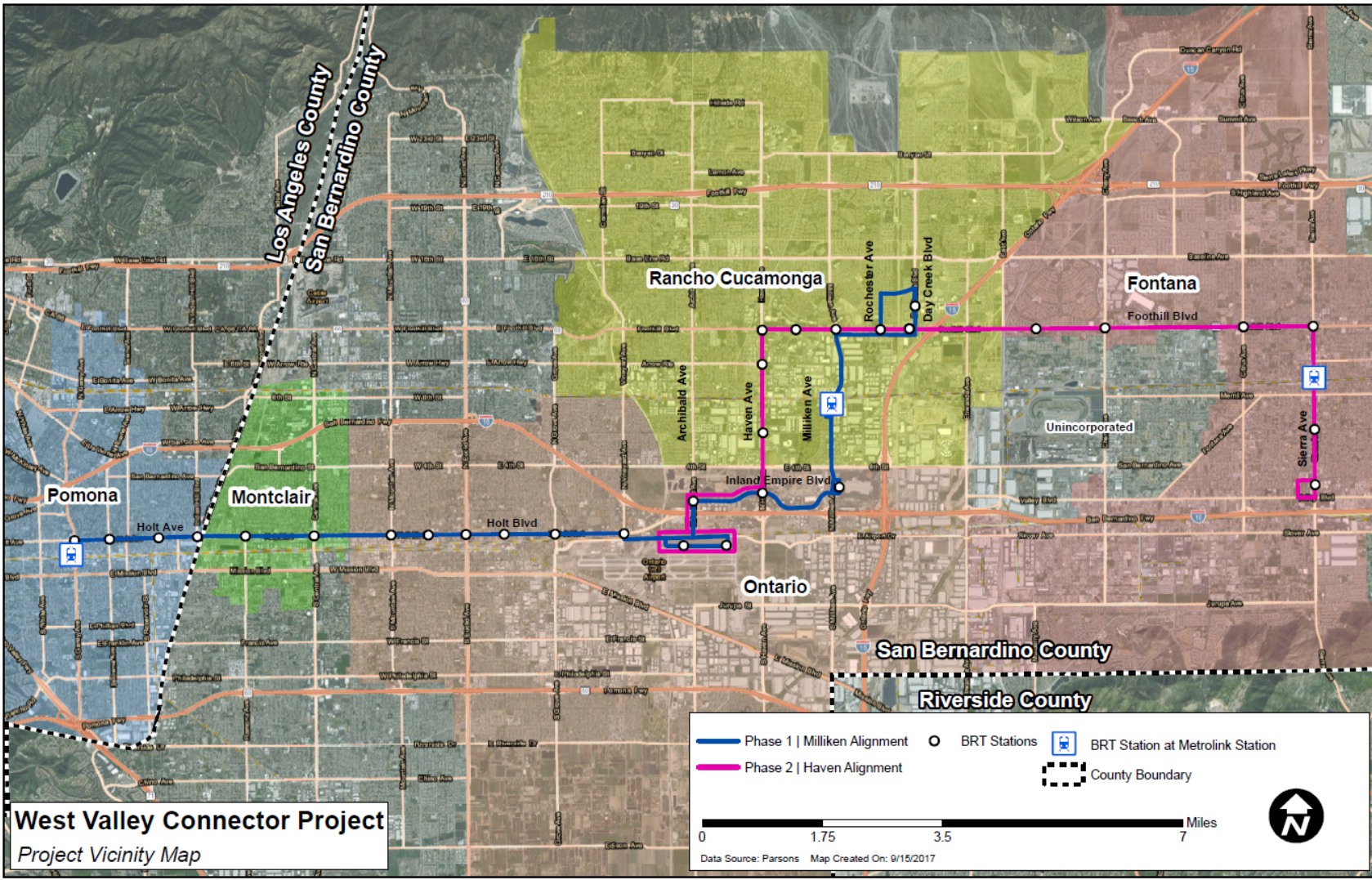


Figure 2 Project Vicinity Map

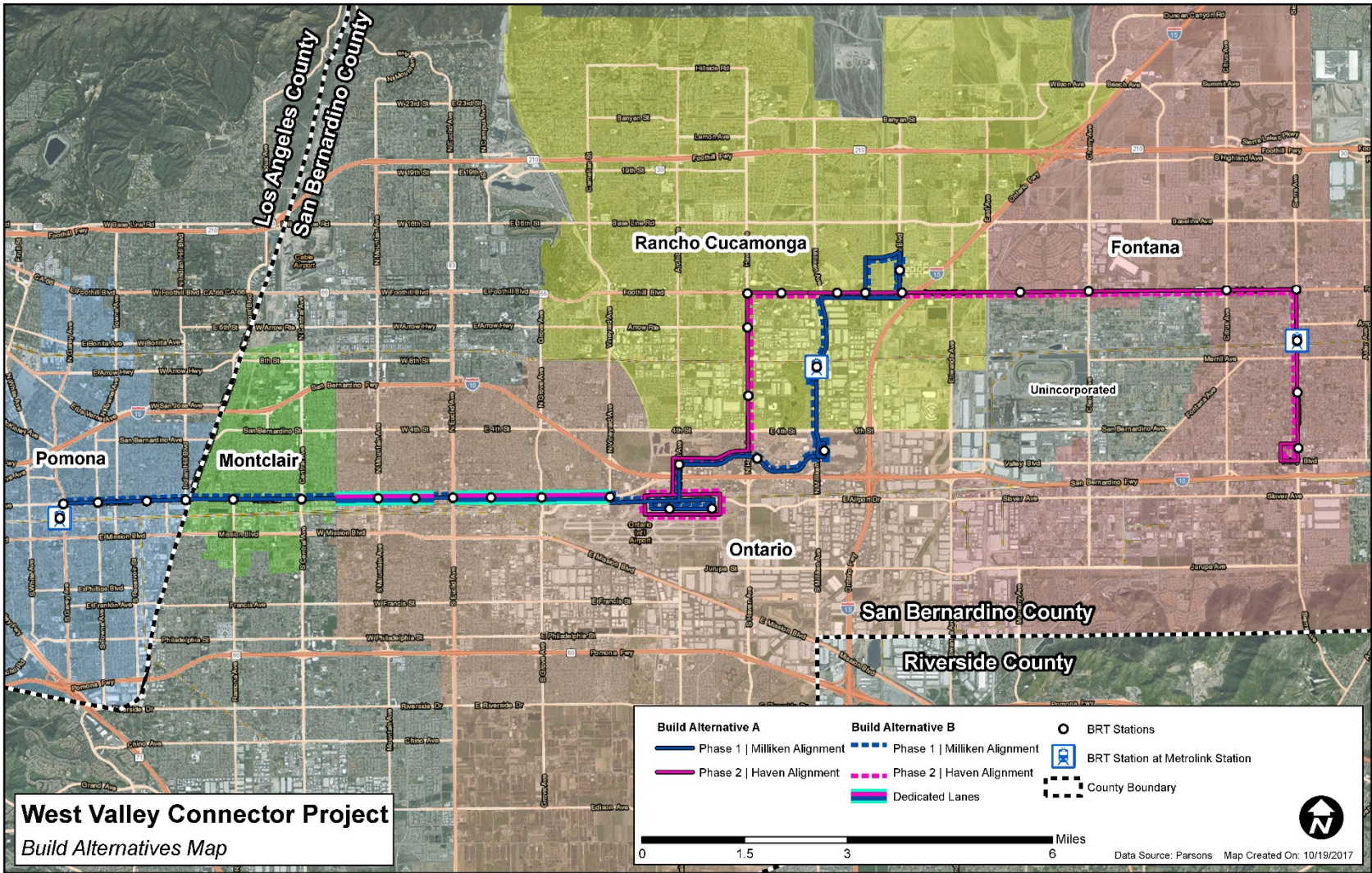


Figure 3 Build Alternatives Map

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**TRANSPORTATION CONFORMITY WORKING GROUP  
of the  
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS**

**December 5, 2017  
Minutes**

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**THE FOLLOWING MINUTES ARE A SUMMARY OF THE MEETING OF THE TRANSPORTATION CONFORMITY WORKING GROUP. A DIGITAL RECORDING OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.**

The Meeting of the Transportation Conformity Working Group was held at the SCAG office in Los Angeles.

**In Attendance:**

Huddleston, Lori	Metro
Morris, Michael	FHWA
Whisman, Rusty	ICF

**SCAG:**

Luo, Rongsheng

**Via Teleconference:**

Anna Jaiswal	Omnitrans
Asuncion, John	SCAG
Cacatian, Ben	VCAPCD
Chu, Philip	SBCTA
Gallo, Ilene	Caltrans, District 11
Hudson, Kerrie	Caltrans District 8
Kochaon, Anne	Parsons
Lopez, Victor	SBCTA
Lugaro, Julie	Caltrans District 12
Lumabas, Gerard	Parsons
Masters, Martha	RCTC
O'Connor, Karina	EPA, Region 9
Pereira, Melina	Caltrans, District 11
Silverman, Sam	Terry A. Hayes Associates
Sutherland, Anders	Terry A. Hayes Associates
Tavitas, Rodney	Caltrans Headquarters
Tax, Wienke	EPA, Region 9
Tisopulos, Tara	OCTA
Vaughn, Joseph	FHWA
Yoon, Andrew	Caltrans District 7



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**TRANSPORTATION CONFORMITY WORKING GROUP  
of the  
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS**

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**1.0 CALL TO ORDER AND SELF-INTRODUCTION**

Lori Huddleston, TCWG Chair, called the meeting to order at 10:05 am.

**2.0 PUBLIC COMMENT PERIOD**

None.

**3.0 CONSENT CALENDAR**

- 3.1. October 24, 2017 TCWG Meeting Minutes  
The meeting minutes were approved.

**4.0 INFORMATION ITEMS**

4.1 Review of PM Hot Spot Interagency Review Forms

1) **LATP16S003 & ATPL6065\_219**

It was determined that this is not a POAQC.

2) **SBD4120213;**

It was determined that this is not a POAQC (FTA concurrence received via email after the meeting).

Karina O'Connor, EPA Region 9, recommended that the project documentation add a clarification that the buses are CNG, not diesel, buses.

3) **RIV121204**

It was determined that this is not a POAQC.

4.2 FTIP Update

John Asuncion, SCAG, reported the following:

- SCAG staff was working on 2017 FTIP Administrative Amendment #17-15 and expected to approve within the next week or two. All previous 2017 FTIP Amendments had received full approval.
- SCAG staff would begin 2019 FTIP project review upon CTC project submittals by early January 2018.

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**TRANSPORTATION CONFORMITY WORKING GROUP  
of the  
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS**

**December 5, 2017  
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4.3 RTP Update

John Asuncion, SCAG, reported the following on behalf of Daniel Tran, SCAG:

- Amendment #3 to 2016 RTP/SCS was being prepared in conjunction with 2019 FTIP.
- Similar to previous 2016 RTP/SCS amendments, this is the opportunity for project sponsors to make project updates including changes to descriptions, costs, completion years, and modeling details to existing RTP/SCS projects.
- In addition, this is also an opportunity to add new projects and/or remove projects from 2016 RTP/SCS that are no longer being pursued.
- Final project input from County Transportation Commissions are due to SCAG by January 9, 2018.
- Once input is received, SCAG will begin updating regional travel demand model, process model results, and release draft Amendment #3 for public comment and review. In addition, a series of public hearings will be held.
- 2016 RTP/SCS Amendment #3 is expected to be federally approved by late 2018.

4.4 EPA Update

Wienke Tax, EPA Region 9, reported the following:

- EPA received and was responding to a comment letter from Earthjustice regarding EPA proposed approval of South Coast 2006 24-hour PM<sub>2.5</sub> SIP. The related stationary off-set and highway sanctions remained deferred in the meantime.
- EPA had shared its completeness letter on 2008 8-hour ozone SIP for both South Coast and Coachella. As reported previously, the letter resolves a previous finding of failure to submit and thus stops related stationary off-set and highway sanctions clocks.

In response to a question, Ms. Wienke, EPA Region 9, stated that EPA hoped to publish a final rule on South Coast 2006 24-hour PM<sub>2.5</sub> SIP in January 2018.

4.5 ARB Update

There was no new ARB update.

4.6 Air Districts Update

There was no new air district update.

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**TRANSPORTATION CONFORMITY WORKING GROUP  
of the  
SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS**

**December 5, 2017  
Minutes**

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**5.0 INFORMATION SHARING**

Rongsheng Luo, SCAG, announced that SCAG office would move to Wilshire Grand Center (900 Wilshire Blvd., Suite 1700, Los Angeles) on December 18, 2017 and the next TCWG meeting will be held in the new office.

**6.0 ADJOURNMENT**

The meeting was adjourned at 10:30 am.

The next Transportation Conformity Working Group meeting will be held on Tuesday, January 23, 2018 at the new SCAG office in downtown Los Angeles.

December 2017

### PM Hot Spot Analysis Project Lists

#### Review of PM Hot Spot Interagency Review Forms

December, 2017	Determination
<a href="#">LATP16S003_ATPL6065_219 December 2017</a>	Not a POAQC - Hot Spot Analysis Not Required
<a href="#">SBD4120213 December 2017</a>	Not a POAQC - Hot Spot Analysis Not Required (FTA concurrence received via email after the meeting)
<a href="#">RIV121204 December 2017</a>	Not a POAQC - Hot Spot Analysis Not Required

#### QUICK

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#### SEARCH

#### PM Hot

- March, 2018
- February, 2018
- December, 2017
- October, 2017
- August, 2017
- July, 2017
- June, 2017
- May, 2017
- March, 2017
- February, 2017
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