INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Industrial Avenue Bridge Replacement Project

May 2014

Lead Agency:

311 Vernon Street
Roseville, CA 95678
Contact: Mark Morse
(916) 774-5334

Prepared by:

Kimley-Horn and Associates, Inc.
2720 Gateway Oaks Drive, Suite 310
Sacramento, CA 95833

NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE
PROPOSED INDUSTRIAL AVENUE BRIDGE REPLACEMENT PROJECT

Public Notice is hereby given that an Initial Study/Mitigated Negative Declaration (IS/MND) (environmental report) is available for public review for the Industrial Avenue Bridge Replacement Project.

Project Description and Location: The City of Roseville (City) is proposing to replace the Industrial Avenue Bridge over Pleasant Grove Creek and reconstruct Industrial Avenue to conform to the new bridge. The project proposes to replace the narrow bridge to accommodate a standard width involving two travel lanes with shoulders (for bicycle lanes) and a sidewalk on the east side. The new bridge and roadway profile would be elevated to provide the necessary freeboard over the 50-year flood event water surface elevation for Pleasant Grove Creek. The dimensions of the new bridge would be up to 126 feet long and up to 60 feet wide (one 1.5-foot rail, one 1-foot rail, one 5-foot sidewalk, two 8-foot shoulders/bike lanes, two 12-foot travel lanes, and one 12-foot center median/divide).

The proposed project is located in the City of Roseville, within the North Industrial Planning Area. It is located north of Blue Oaks Boulevard, south of West Sunset Boulevard, and west of State Route (SR) 65.

Document Review and Availability: The public comment period will extend from May 29, 2014 to June 27, 2014. Copies of the IS/MND are available for public review at the City of Roseville Permit Center, 311 Vernon Street, Roseville, CA 95678 (8:00 A.M. to 5:00 P.M., Monday through Friday).

The IS/MND can also be reviewed and/or downloaded from the City of Roseville website at the following link: http://www.roseville.ca.us/gov/community_development/edpn.asp.

During the public review period written comments on the IS/MND may be provided to:

Mark Morse
Environmental Coordinator
Community Development
City of Roseville
311 Vernon Street
Roseville, CA 95678
(916) 774-5334

mmorse@roseville.ca.us

MITIGATED NEGATIVE DECLARATION

PROJECT TITLE: Industrial Avenue Bridge Replacement Project

PROJECT LOCATION: The proposed project is located within the North Industrial Planning Area, north of Blue Oaks Boulevard, south of West Sunset Boulevard, and west of State Route (SR) 65, within the City of Roseville, Placer County.

DATE: May 29, 2014

PROJECT APPLICANT: City of Roseville, Public Works

LEAD AGENCY: City of Roseville

CONTACT PERSON: Mark Morse, Community Development Department (916) 774-5334

PROJECT DESCRIPTION: The City of Roseville (City) is proposing to replace the Industrial Avenue Bridge over Pleasant Grove Creek and reconstruct Industrial Avenue to conform to the new bridge. The project proposes to replace the narrow bridge to accommodate a standard width involving two travel lanes with shoulders (for bicycle lanes) and a sidewalk on the east side. The new bridge and roadway profile would be elevated to provide the necessary freeboard over the 50-year flood event water surface elevation for Pleasant Grove Creek. The dimensions of the new bridge would be up to 126 feet long and up to 60 feet wide (one 1.5-foot rail, one 1-foot rail, one 5-foot sidewalk, two 8-foot shoulders/bike lanes, two 12-foot travel lanes, and one 12-foot center median/divide).

DECLARATION

The City of Roseville has determined that there is no substantial evidence that the above project, as mitigated, may have a significant effect on the environment and proposes that a Mitigated Negative Declaration be adopted. The determination is based on the attached Initial Study and the following findings:

a) The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.
b) The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.
c) The project will not have impacts that are individually limited, but cumulatively considerable.
d) The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.
e) No substantial evidence exists that the project will have a negative or adverse effect on the environment.
f) The project incorporates all applicable mitigation measures identified in the Initial Study.
g) This Mitigated Negative Declaration reflects the independent judgment of the lead agency.

Written comments on the Initial Study and proposed Mitigated Negative Declaration shall be submitted no later than 5 PM June 27, 2014.

Submit comments to:
Mark Morse, Environmental Coordinator
Community Development
City of Roseville
311 Vernon Street
Roseville, CA 95678

Posting Period: May 29, 2014 to June 27, 2014

Initial Study approved by:

Mark Morse, Environmental Coordinator

Initial Study/Mitigated Negative Declaration
Industrial Avenue Bridge Replacement Project

Lead Agency: City of Roseville

City of Roseville
311 Vernon Street
Roseville, CA 95678

Prepared by:

Kimley-Horn and Associates, Inc.
2720 Gateway Oaks Drive, Suite 310
Sacramento, CA 95833

May 2014

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ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
AASHTO	American Association of State Highway and Transportation Officials
AB 32	Assembly Bill 32
AC	Asphalt Concrete
ACM	Asbestos Containing Material
ADL	Aerially Deposited Lead
ADT	Average Daily Trips
APE	Area of Potential Effects
BA	Biological Assessment
BMPs	Best Management Practices
B.P.	before present
BSA	Biological Study Area
CAAQS	California Ambient Air Quality Standards
California Register	California Register of Historical Resources
Cal/EPA	California Environmental Protection Agency
CalFire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	Methane
CIDH	cast-in-drilled-hole
CIP	Capital Improvement Program
City	City of Roseville
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society

CO	Carbon Monoxide
CO_2	Carbon Dioxide
CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	Decibel
dBA	A-Weighted Decibel
dbh	diameter at breast height
DOT	U.S. Department of Transportation
DTSC	Department of Toxic Substance Control
EIR	Environmental Impact Report
FCAA	Federal Clean Air Act
FGC	California Fish and Game Code
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Authority
GIS	Global Information System
GHG	Greenhouse Gas
HBP	Highway Bridge Program
HCP	Habitat Conservation Plan
Hz	Hertz
I	Interstate
IS	Initial Study
IS/MND	Initial Study/Mitigated Negative Declaration
IPCC	Intergovernmental Panel on Climate Change
ISA	Phase I Initial Site Assessment
ITS	Intelligent Transportation System
L_{dn}	Day-Night Level
L_{eq}	Equivalent Continuous Sound Level
L_{max}	Maximum Sound Levels
L_{min}	Minimum Sound Level

L_n	Sound Level Percentiles
LOS	Level of Service
MAP-21	Moving Ahead for Progress in the 21st Century Act
MBTA	Migratory Bird Treaty Act
mg/L	milligrams per liter
MLD	Most Likely Descendent
MPO	Metropolitan Planning Organizaion
MSATs	Mobile Source Air Toxics
msl	mean sea level
MTIP	Metropolitan Transportation Improvement Program
N_2O	Nitrous Oxide
National Register	National Register of Historic Places
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NMFS	National Marine Fisheries Service
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
O_3	Ozone
Pb	Lead
PCAPCD	Placer County Air Pollution Control District
PM_{10}	Particulate matter of less than 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
ppv	peak particle velocity
PRC	Public Resources Code
proposed project	Industrial Avenue Bridge Replacement Project
ROG	Reactive Organic Gases
SACOG	Sacramento Area Council of Government
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Act: A Legacy for Users
SCH	State Clearinghouse

SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SPRR	Southern Pacific Railroad
SR	State Route
SVAB	Sacramento Valley Air Basin
SWMP	Storm Water Management Program
SWPPP	Stormwater Pollution Prevention Plan
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Loads
TSP	Total Suspended Particles
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VHT	Vehicle Hours Traveled
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound
WPWMA	Western Placer Waste Management Authority

1.0 INTRODUCTION

This project-level Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared for the Industrial Avenue Bridge Replacement Project (proposed project) to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] 21000 et seq.) and State CEQA Guidelines (14 California Codes of Regulations [CCR] 15000 et seq.). The City of Roseville (City) is the lead agency for this proposed project under CEQA.

The proposed project is funded with Highway Bridge Program (HBP) and local funds. Therefore, a Categorical Exclusion (CE) is being prepared under separated cover to satisfy the requirements of the National Environmental Policy Act (NEPA). The California Department of Transportation, District 3 Local Assistance (Caltrans), is the lead agency for this proposed project under NEPA, as assigned by the Federal Highway Administration (FHWA) through NEPA Delegation.

1.1 INITIAL STUDY PURPOSE

CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. An Initial Study is a public document used by the decision-making lead agency to determine whether a project may have a significant impact on the environment. If the agency finds that the proposed project may have a significant impact on the environment, but that these impacts will be reduced to a less-than-significant level through implementation of specific mitigation measures, a Mitigated Negative Declaration shall be prepared.

This IS/MND is a public information document that describes the proposed project, existing environmental setting at the project site, and potential environmental impacts of construction and operation of the proposed project. It is intended to inform the public and decision-makers of the proposed project's compliance with CEQA and the State CEQA Guidelines.

1.2 REVIEW PROCESS

This IS/MND is being circulated for public and agency review as required by CEQA. Because state agencies will act as responsible or trustee agencies, the City will circulate the IS/MND to the State Clearinghouse of the Governor's Office of Planning and Research for distribution and a 30-day review period. Comments on the IS/MND will be evaluated, and responses will be prepared to address any substantive comments.

During the review period, written comments may be submitted to:

Mark Morse

Environmental Coordinator
Community Development Department
City of Roseville
311 Vernon Street
Roseville, CA 95678
mmorse@roseville.ca.us

2.0 PROJECT DESCRIPTION

2.1 INTRODUCTION

The City of Roseville (City), in cooperation with the California Department of Transportation, District 3 Local Assistance (Caltrans), proposes to replace the Industrial Avenue Bridge over Pleasant Grove Creek and reconstruct Industrial Avenue to conform to the new bridge. The Industrial Avenue Bridge Replacement Project (proposed project) would improve safety by providing a standard two-lane facility with standard shoulders and sidewalks, replace a bridge that is on the Highway Bridge Program (HBP) eligibility list, and reduce the likelihood of hydraulic pressure flow against the bridge. The City is the lead agency under the California Environmental Quality Act (CEQA) while Caltrans is the lead agency for the National Environmental Policy Act (NEPA), as assigned by the Federal Highway Administration (FHWA) through NEPA Delegation.

Reconstruction of the bridge and roadway would be funded completely with HBP and local funds. The proposed project is considered a group project, Grouped Project for Bridge Rehabilitation and Reconstruction – HBP Program (VAR79008), in the Sacramento Area Council of Government's (SACOG) Metropolitan Transportation Improvement Program (MTIP). The proposed project is listed in both the 2011/2014 and 2013/2016 MTIPs (SACOG PLA25507).

The proposed project is also a component of the City's most recently updated transportation system Capital Improvement Program (CIP). The current CIP, adopted May 16, 2007, identified the transportation system improvements necessary to respond to roadway conditions, ensure adequate transportation system with the City, and be consistent with the City's level of service (LOS) policies through the year 2020. The City completed CEQA review for the *City of Roseville 2020 Transportation System CIP Subsequent Environmental Impact Report* (State Clearinghouse [SCH] No. 2006062086) in April 2007 for the following actions:

- adopting a new city-wide traffic model;
- adopting the proposed CIP program of transportation improvements (including the proposed project);
- making findings relative to the City's transportation system LOS Policy; and
- updating related traffic mitigation fees.

The analysis of the projects in the 2007 CIP Environmental Impact Report (EIR) was conducted based on the best available information and identified the broad environmental issues and cumulative effects associated with the collective improvements identified in the CIP and updates, as well as significant and unavoidable impacts and impacts associated with growth inducement and right-of-way expansion. The impacts and mitigation measures developed for the project-level analysis of the proposed project provided in this document are consistent with those identified in the 2007 CIP EIR.

The 2007 CIP and EIR may be reviewed at the Roseville Permit Center front counter located at 311 Vernon Street in Roseville, Monday through Friday, between the hours of 8 AM and 5 PM.

2.2 PROJECT LOCATION

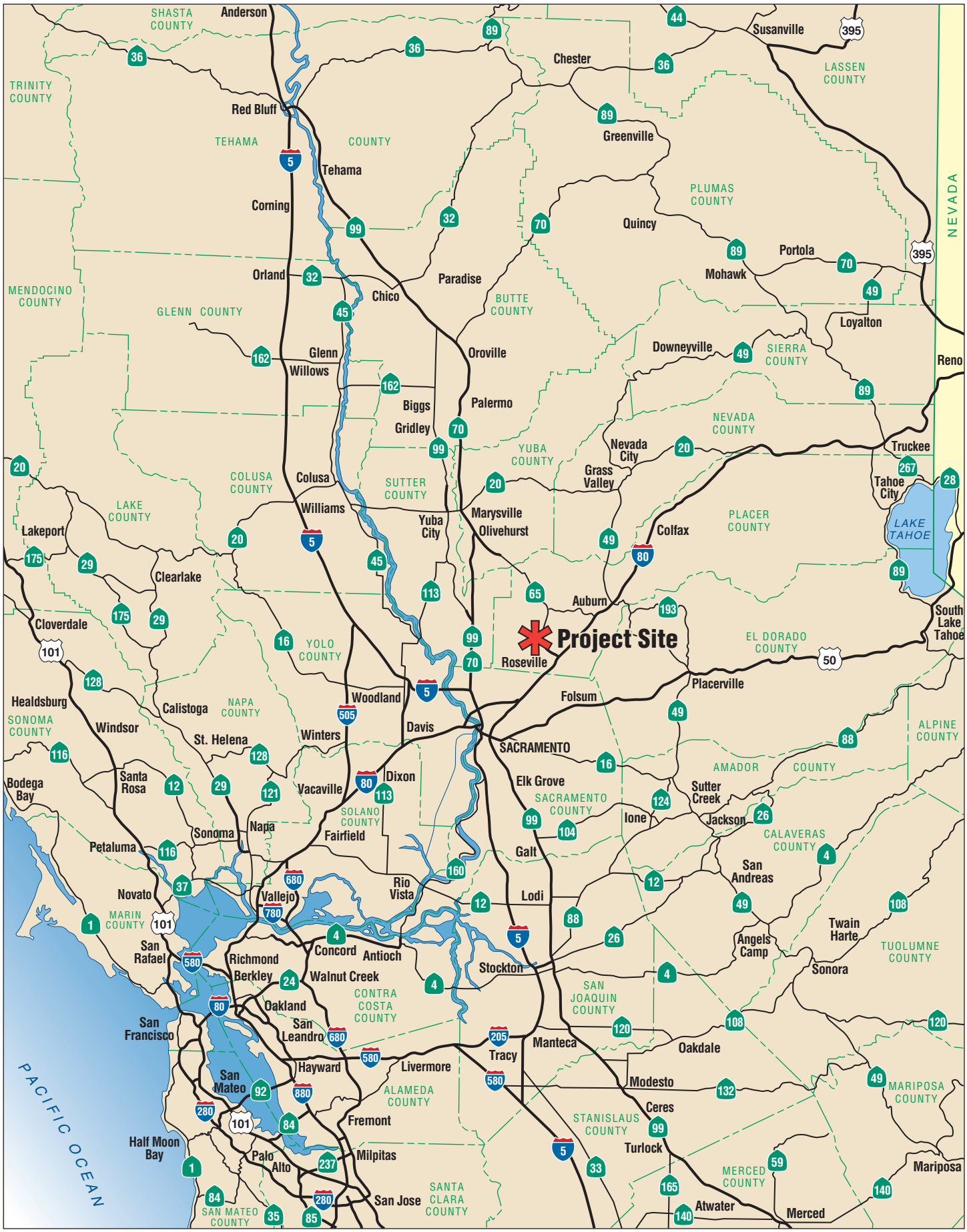
The proposed project is located within the City of Roseville, Placer County, California, on the eastern edge of the Sacramento Valley floor at the base of the Sierra Nevada foothills; refer to Figure 2-1, *Regional Vicinity*. The proposed project is within the City's North Industrial Planning Area and adjacent to the Placer County Sunset Industrial Area Plan, located north of Blue Oaks Boulevard, south of West Sunset Boulevard, and west of State Route (SR) 65; refer to Figure 2-2, *Project Location*. Primary access to the City is via Interstate 80 (I-80) and SR-65. The project area is within the United States Geological Survey (USGS) Roseville Quadrangle, California, Township 11 North, Range 6 East, Section 16.

2.3 PROJECT SETTING

Industrial Avenue provides vehicular access of approximately 10,000 average daily trips (ADT) through a commercial corridor between Washington Boulevard to the south and Athens Avenue to the north. The proposed project is within the City limits; however, the land to the northwest of the proposed project is within Placer County's Sunset Industrial Area Plan. City land use designations for the surrounding area include M2 (General Industrial) to the north, south, and east; P/QP (Public/Quasi-Public) to the west; and M1 (Light Industrial) to the west and south; the County land use designation for the area to the northwest is Industrial (Figure 2-3, *Existing General Plan Land Use Designations*). The area surrounding the proposed project is City zoned IND (Light Industrial) to the east and P/QP (Public/Quasi-Public) and LI (Light Industrial) to the west; the County zoning classification is IND-Dc (Industrial Park District, Design Scenic Corridor Combining District) (Figure 2-4, *Existing Zoning Classifications*). In addition, the Southern Pacific Railroad (SPRR) parallels Industrial Avenue to the west and lands remain mostly undeveloped. The Placer County Justice Center is located at the north end of the proposed project, while commercial and industrial facilities are located at the south end of the proposed project, east of Industrial Avenue.

The project area is relatively flat, with topography ranging from approximately 105 feet above mean sea level (msl) to 120 feet above msl, with the higher elevations to the north and south and sloping toward Pleasant Grove Creek. The active Pleasant Grove Creek channel includes extensive aquatic beds of tiny floating (unrooted) plants contained within the active channel, open water habitat, and a narrow, discontinuous fringe of freshwater emergent marsh, predominantly hardstem bulrush (*Schoenoplectus acutus*) and cattails (*Typha* spp.). The stream banks, above the ordinary high water mark, and portions of the floodplain that are supported by a high groundwater table or periodic flooding, include a shrub-dominated woody riparian scrub of sandbar willow (*Salix exigua*) thickets.

The existing Industrial Avenue Bridge is 124 feet long and 26.4 feet wide (two travel lanes, no shoulders); it has two, 1.3-foot wide vehicular barrier rails. North and south of the bridge, Industrial Avenue is a two-lane roadway with a center turn-lane and a sidewalk on the east side of the roadway. South of the bridge, shoulders are present for both north and southbound traffic. North of the bridge, Industrial Avenue has a shoulder for southbound traffic, while northbound includes a striped bicycle lane and right-turn lane; however no shoulder is present.

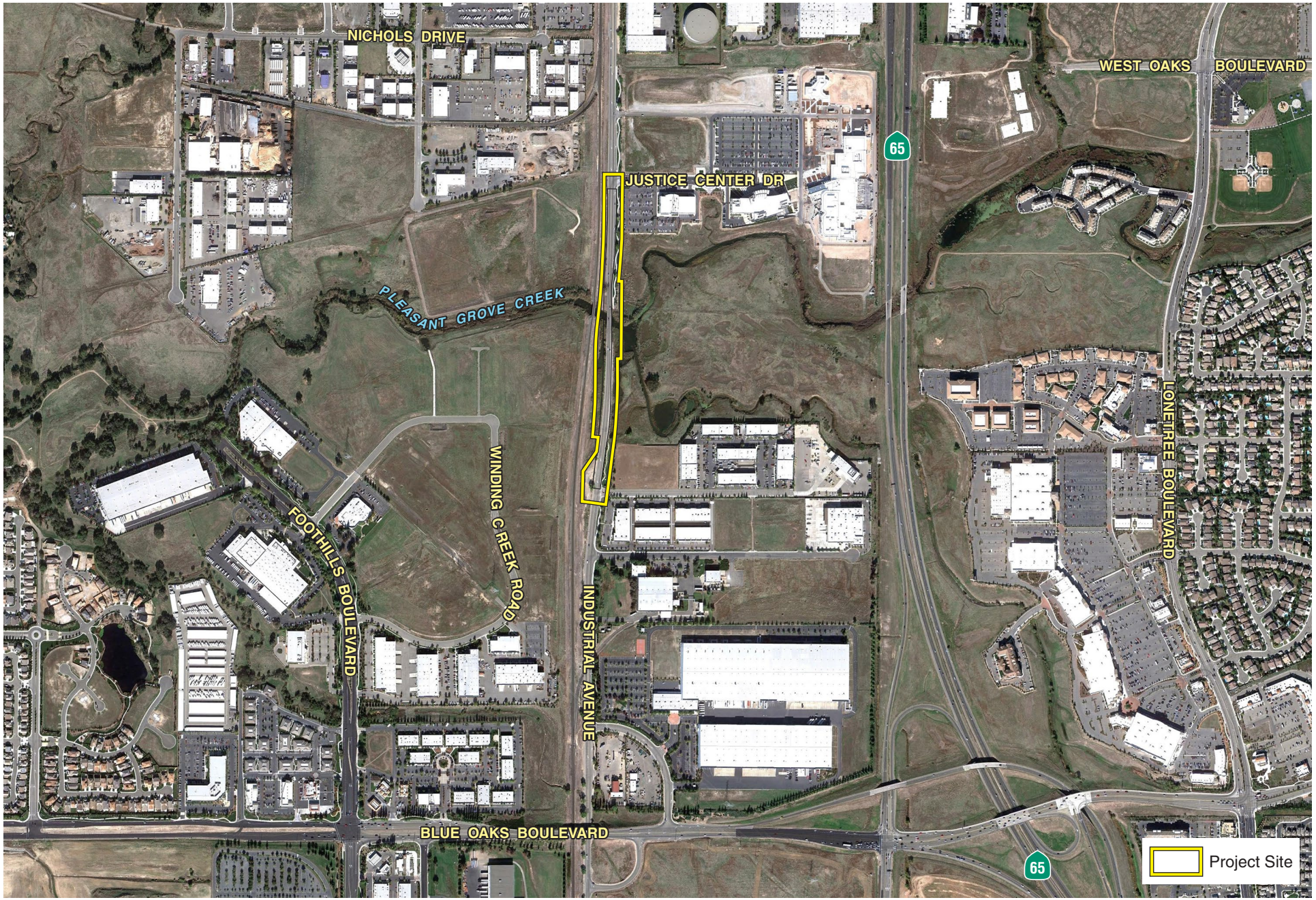


INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

Regional Vicinity

3/13/14 JN 134939-20051 MAS

Figure 2-1



Source: Google Pro Aerial

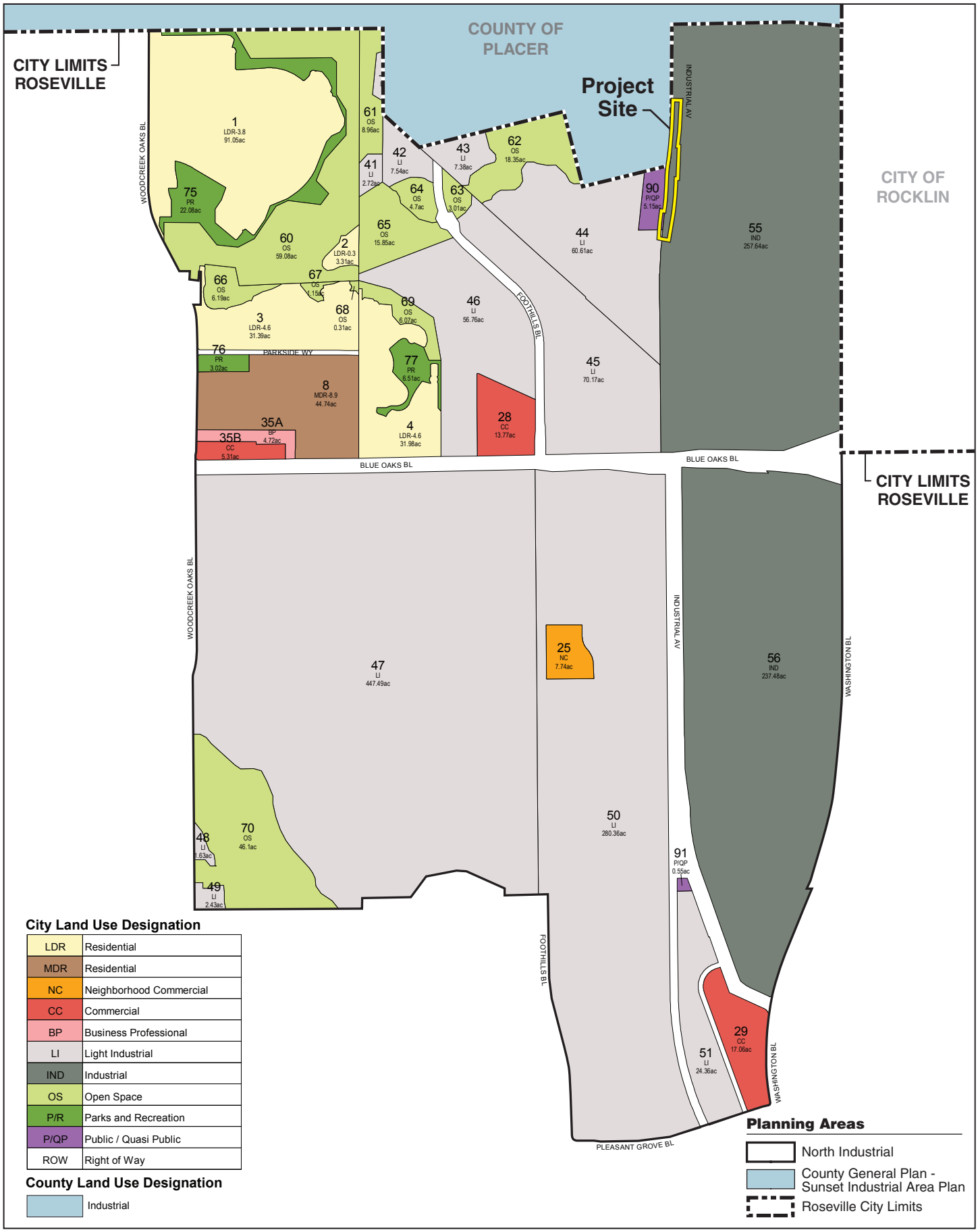
not to scale

INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

Project Location

4/25/14 JN 134939-20051 MAS

Figure 2-2



City Land Use Designation

LDR	Residential
MDR	Residential
NC	Neighborhood Commercial
CC	Commercial
BP	Business Professional
LI	Light Industrial
IND	Industrial
OS	Open Space
P/R	Parks and Recreation
P/QP	Public / Quasi Public
ROW	Right of Way

County Land Use Designation

Industrial

Planning Areas

North Industrial

County General Plan - Sunset Industrial Area Plan

Roseville City Limits

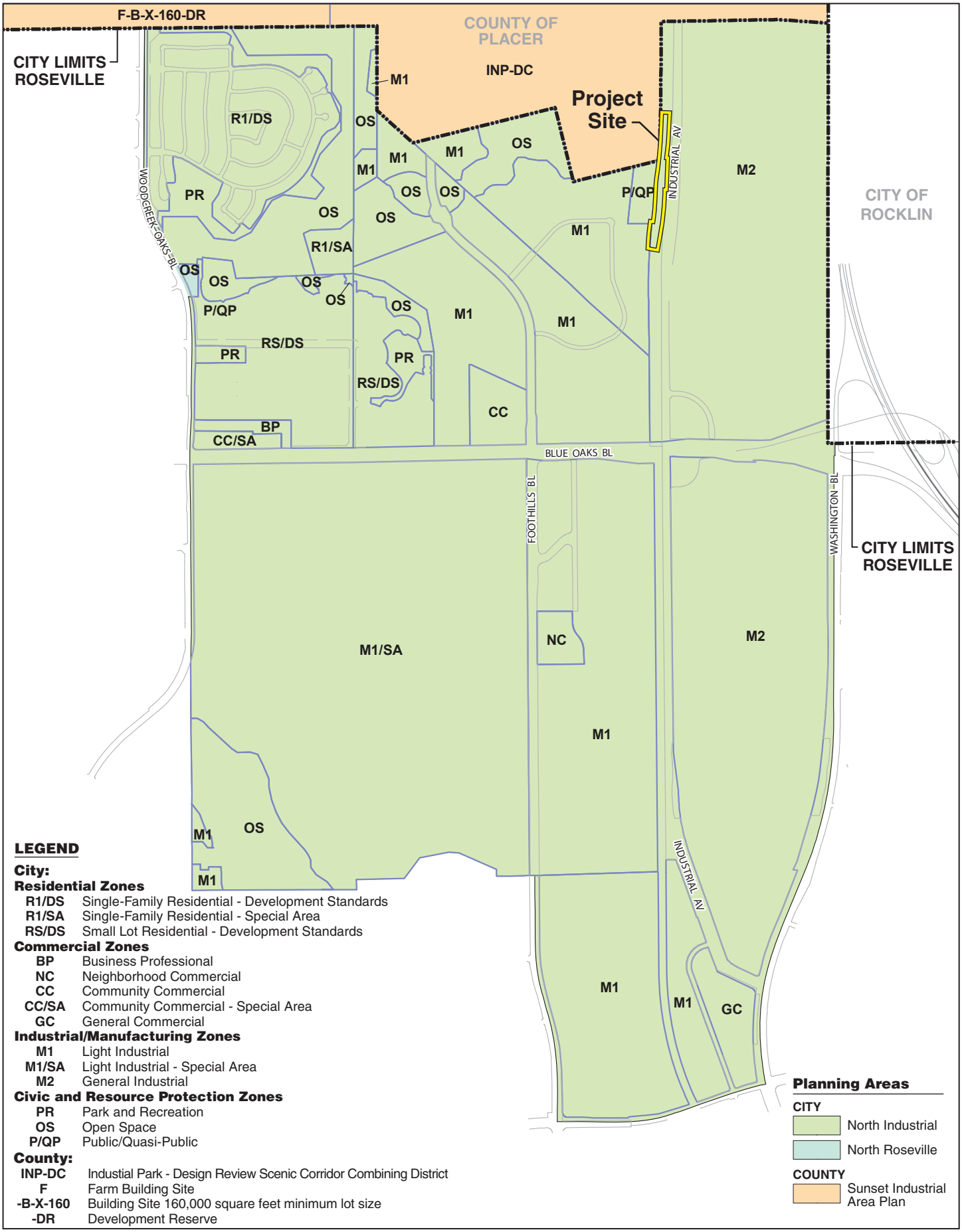
0 0.1 0.2 0.3 miles

INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

Existing General Plan Land Use Designations • Industrial Avenue

4/28/14 JN 134939-20051 MAS

Figure 2-3



INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

Existing Zoning Classifications • Industrial Avenue

4/28/14 JN 134939-20051 MAS

Figure 2-4

2.4 PURPOSE AND NEED

The City has identified the following purposes for the proposed project.

- To construct a safe and standard two-lane facility with standard shoulders and sidewalk consistent with City and American Association of State Highway and Transportation Officials (AASHTO) standards in order to accommodate vehicles, bicycles and pedestrians.
- To remove the bridge from the Highway Bridge Program (HBP) eligibility list for bridge replacements.
- To reduce the likeliness of hydraulic pressure flow against the bridge by raising the roadway/bridge profile.
- To improve the site's pedestrian and bicycle facilities across the bridge.

2.5 PROJECT DESCRIPTION

2.5.1 PROPOSED PROJECT

Overall, the proposed project would entail the following activities:

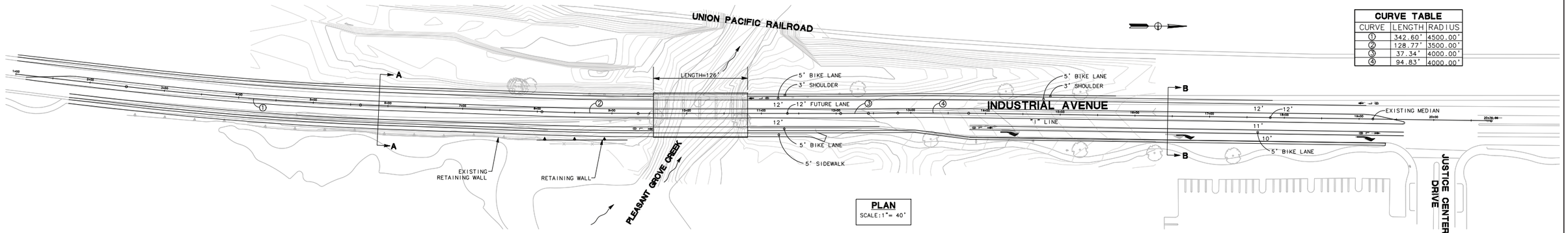
- Remove the functionally obsolete, narrow two-lane bridge.
- Construct standard two-lane bridge with shoulders and sidewalk.
- Raise the roadway and bridge profile.
- Adjust water and sewer manholes and valves to grade.
- Relocate SureWest, AT&T, Level 3 and Zayo fiber optics and cables.
- Relocate overhead utilities.

The proposed project would also include pavement rehabilitation of the roadway approaches on both sides of the bridge. This work includes the removal of the existing pavement, replacement of any failed roadway base areas, and placement of new hot mix asphalt pavement.

The project proposes to replace the narrow bridge to accommodate a standard width involving two travel lanes with shoulders (for bicycle lanes) and a sidewalk on the east side. The new bridge and roadway profile would be elevated to provide the necessary freeboard over the 50-year flood event water surface elevation for Pleasant Grove Creek. The dimensions of the new bridge would be up to 126 feet long and up to 60 feet wide (one 1.5-foot rail, one 1-foot rail, one 5-foot sidewalk, two 8-foot shoulders/bike lanes, two 12-foot travel lanes, and one 12-foot center median/divide). These details are depicted on Figure 2-5, *Site Plan*.

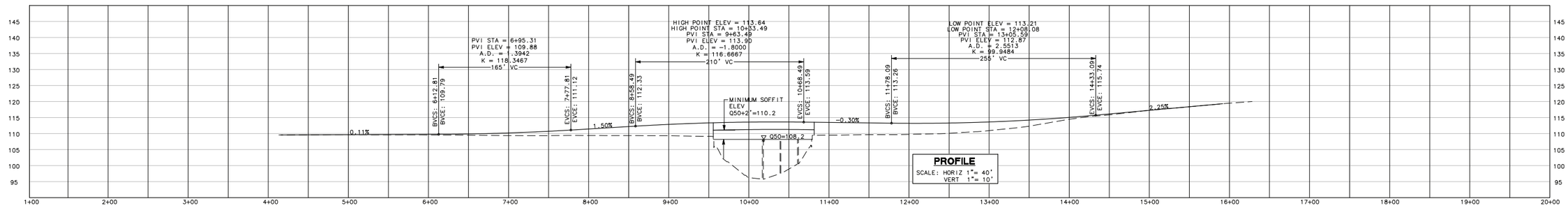
2.5.2 CONSTRUCTION ACTIVITIES

Table 2-1, *Construction Phase/Equipment*, lists the phases of construction for the proposed project along with the associated construction equipment that would be used during each construction phase. Some activities could overlap and be performed in parallel to accelerate the construction schedule.

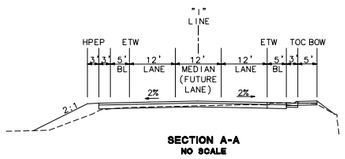


CURVE TABLE		
CURVE	LENGTH	RADIUS
①	342.60'	4500.00'
②	128.77'	3500.00'
③	37.34'	4000.00'
④	94.83'	4000.00'

PLAN
SCALE:1"= 40'

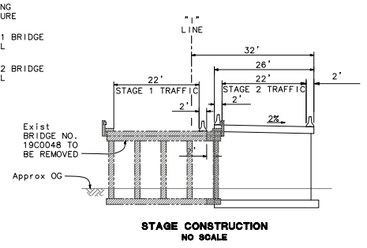


PROFILE
SCALE: HORIZ 1"= 40'
VERT 1"= 10'

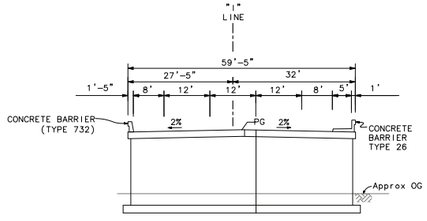


SECTION A-A
NO SCALE

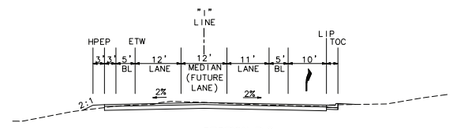
LEGEND
- EXISTING STRUCTURE
- STAGE 1 BRIDGE REMOVAL
- STAGE 2 BRIDGE REMOVAL



STAGE CONSTRUCTION
NO SCALE



BRIDGE SECTION
NO SCALE



SECTION B-B
NO SCALE

DESIGN STANDARDS

1. DESIGN SPEED=55 MPH
2. Q50=110.4
   Q100=110.9
   Q200=111.4
3. FORECASTED ROADWAY ADT=15,782 IN 2020.

INDUSTRIAL AVENUE BRIDGE REPLACEMENT PROJECT

AUGUST 14, 2013

Source: Mark Thomas & Company, Inc., August 2013.

Table 2-1: Construction Phase/Equipment

Clearing and Grubbing	
Backhoe	Dump Truck (2)
Excavator	Mulcher
Grader	
Construction of Bridge	
Backhoe	Pile Driver
Crane	Excavator
Boom Truck	Forklift
Cement Truck	Air Compressor
Construction of Roadway	
Backhoe/Loader	Asphalt Paver
Smooth Wheeled Roller	Striping Truck
Vibrating Roller	Excavator
Grader	
Clear Water Diversion	
Crane	Boom Truck
Remove Bridge	
Crane	Loader
Cutting Torch and Saw	Dump Truck
Chipping Gun	Air Compressor
Jackhammer	
Erosion Protection Installation	
Dump Truck	Excavator

Clearing and Grubbing

The banks of Pleasant Grove Creek would be cleared and grubbed to accommodate the new bridge and widened roadway approaches. This work would remove above ground material including all vegetation, non-salvageable trees, and debris.

Clear Water Diversion

In order to remove the existing bridge, and construct the new bridge, it would be necessary to construct temporary water diversions through the construction zone (bridge site). Shoring of Pleasant Grove Creek would be required and water would be temporarily piped through the construction site. The water diversion structures would be established in conformance with City specifications and regulations as required by the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS). The diversion structure(s) would be constructed within the channel banks within the project limits upstream and downstream of the construction activities. The utilities that pass through the construction site would need to be shifted if installation of streambed erosion protection materials is required. Materials to construct the diversion would likely consist of, but are not limited to, sheet piling, pipe or pipes as needed to convey anticipated flows, sandbag and plastic sheeting to construct a containment dam, or use of bladder dams upstream and downstream of the site and within the proposed project limits.

Demolish Existing Bridge/Construct New Bridge

Because of the high ADT on Industrial Avenue, a staged construction approach would be the preferred option for constructing the new bridge. The replacement structure is approximately 60 feet wide, and the

proposed project would be staged to allow a portion of the existing structure to be removed, while a portion of the new structure is constructed. The alignment allows two travel lanes to remain open at all times during construction. Using this approach, temporary traffic control would be implemented along Industrial Avenue for the duration of the project construction. Following the completion of the first stage of construction, traffic would then be routed onto the new structure while the remaining portion of the bridge is constructed.

For the demolition of the existing bridge, once a water diversion is in place, the bridge would be demolished. The demolition would begin by removing the bridge railing, then stripping the asphalt concrete (AC) overlay from the existing bridge deck. The channel flow below would be protected in the water diversion system. This would be followed by removal of the reinforced concrete slab, then pier columns, then exposed abutment by means of jackhammering into manageable sections. The existing bridge would be tested for hazardous materials prior to demolition and the bridge would be dismantled and disposed of in proper landfill facilities based on the finding of the hazardous materials study.

The new bridge would be constructed in segments. The proposed project would be a three-span, cast-in-place, reinforced concrete-slab bridge. It is anticipated that spread footings would be utilized for the abutment foundations; however, driven piles may be used as an alternative to limit excavation at the abutments. The new bridge would require very similar processes for construction that include possible pile driving, abutment construction with wing walls, superstructure construction (or installation of pre-cast slab units), followed by construction of the bridge sidewalk and guardrails. An alternative to the cast-in-place bridge would be a pre-cast bridge. If this alternative is deemed acceptable for engineering purposes, the construction footprint would be reduced, as no false work would be necessary.

Construction of the Roadway Approach

As discussed above, the proposed project would also include pavement rehabilitation of the roadway approaches on both sides of the bridge. This work would include the removal of the existing pavement, replacement of any failed roadway base areas, and placement of new hot mix asphalt pavement.

Erosion Protection Installation

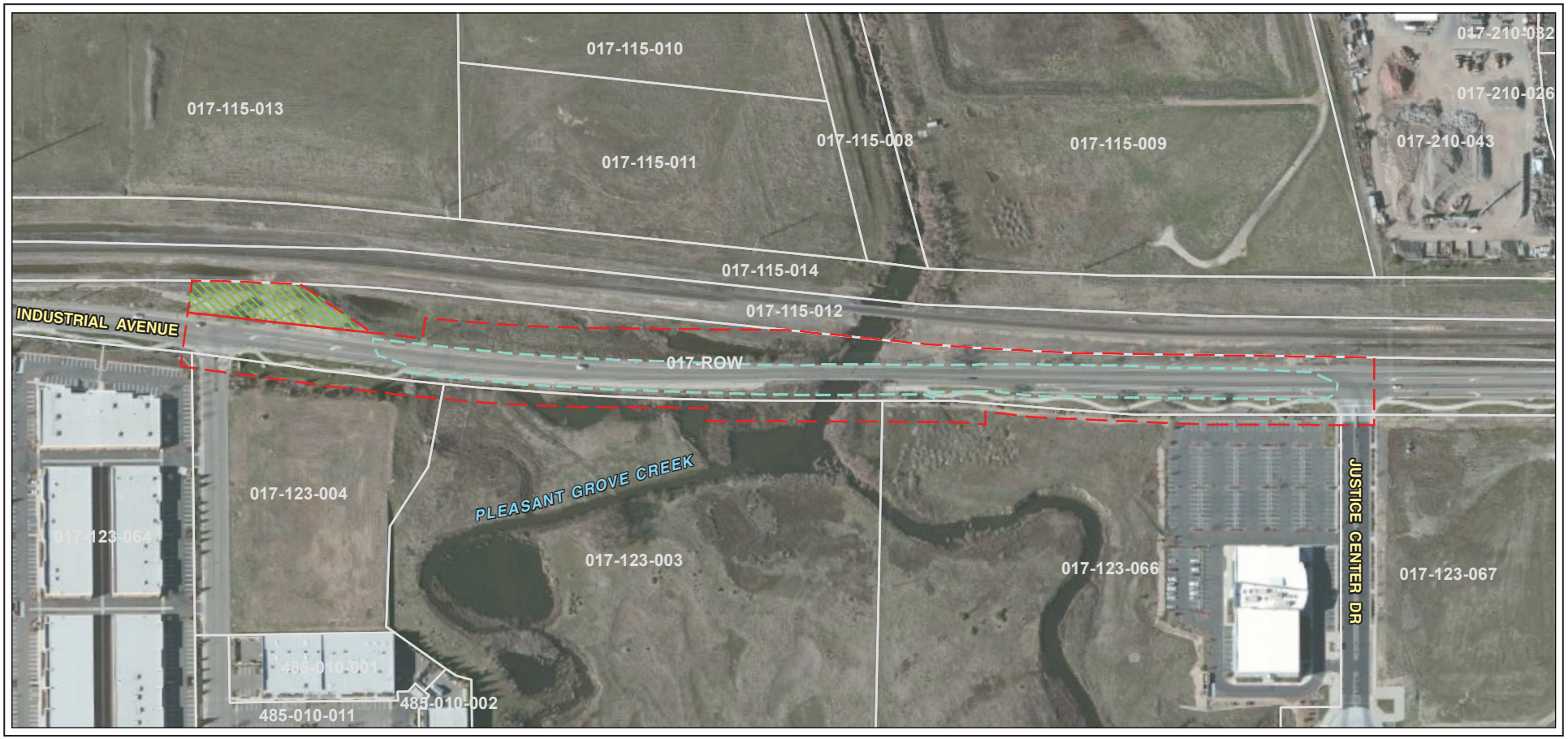
Rock slope protection would be included around the new footings of the bridge.

Utility Relocation

The project site contains utilities that include water and sewer lines, fiber optic cables, and overhead utilities. These utilities would be relocated as a result of bridge construction. The utilities attached to the bridge would be relocated vertically with the bridge with the goal to elevate the utilities above the 50-year storm event water surface elevation.

Access and Staging

All equipment and materials would be stored at a temporary staging area located within the project roadway approach limits; refer to Figure 2-6, *Area of Direct Impact*. Construction access would be directly from the existing roadway and no specific temporary access roadways would be necessary. Lane closures may occur; however, Industrial Avenue would remain open during construction. No road closures would occur as a result of the proposed project. The lane closures would be conducted in compliance with City traffic control standards and a traffic management plan to be implemented by the City.



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INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

Area of Direct Impact

Figure 2-6

2.6 PROJECT SCHEDULE

The City expects that construction of the proposed project would take approximately five months, with construction occurring between April and October. If unknown schedule delays occur, some nighttime construction would be required to maintain this five-month schedule.

2.7 CITY OF ROSEVILLE MITIGATION ORDINANCES, GUIDELINES, AND STANDARDS

The City has adopted the following regulations and ordinances, which include standards and policies that are uniformly applied throughout the City, that substantially mitigate specified environmental effects of future projects:

- Noise Regulation (Roseville Municipal Code [RMC] Ch. 9.24)
- Flood Damage Prevention Ordinance (RMC Ch. 9.80)
- Urban Stormwater Quality Management and Discharge Control Ordinance (RMC Ch. 14.20)
- Stormwater Quality Design Manual (Resolution 07-42)
- City of Roseville Design and Construction Standards (Resolution 07-137)
- Community Design Guidelines (Resolution 95-347)
- Tree Preservation (RMC Ch. 19.66)

The City's mitigating ordinances, guidelines, and standards are referenced, where applicable, in the environmental checklist (Chapter 3 of this IS/MND), and would be implemented by the City as part of the proposed project to reduce potential impacts to a less-than-significant level.

2.8 ENVIRONMENTAL COMMITTMENTS

In addition to the City of Roseville Mitigating Ordinances, Guidelines, and Standards discussed above, the proposed project would implement a variety of best management practices (BMPs) and other measures to avoid short- and long-term effects on the physical and human environment. These plans would be prepared before project activities are initiated, included in the contract specifications for contractors working on the proposed project, and implemented during project construction. The applicable measures are described below.

2.8.1 STORMWATER POLLUTION PREVENTION PLAN

The City shall prepare a Stormwater Pollution Prevention Plan (SWPPP), as part of the National Pollutant Discharge Elimination Systems (NPDES) Permit, which contains stormwater BMPs. The proposed project shall also comply with the City's design/construction standards and the City's Stormwater Quality BMP Guidance Manual for Construction (2007). The proposed project would also be required to obtain a Section 404 permit from the U.S. Army Corps of Engineers (USACE), a Section 401 water quality certification permit from the Central Valley Regional Water Quality Control Board (CVRWQCB), and a Lake and Streambed Alteration Agreement (Section 1600 permit) from the California Department of Fish and Wildlife (CDFW).

2.8.2 TRAFFIC MANAGEMENT PLAN

The City shall require the construction contractor to implement a traffic management plan, including a construction schedule and plan to meet the City's notice procedures, before construction activities begin. The City will ensure its contractor prepares the traffic management plan prior to construction to ensure local traffic is accommodated during construction and access to businesses north and south of the bridge is maintained. This plan would identify general methods by which construction activities will be managed to minimize substantial delays to traffic.

These methods may include (but are not limited to):

- Appropriately sequencing activities (e.g., segment phasing, timing of grading, hours of construction) to minimize effects on traffic flow.
- Maintaining traffic flow in the project area to the extent possible.
- Maintaining bicycle and pedestrian access.

If the City determines that a short-term lane closure is required, traffic lane closures will be approved by the City Engineering Department and notification will be provided to the City Police and Fire Departments 48 hours in advance of any road closures.

2.8.3 NOISE CONTROL MEASURES

The following measure shall be incorporated into the construction specifications for the proposed project to reduce and control noise generated by construction-related activities, consistent with City ordinance and standards:

- All construction equipment will have sound-control devices no less effective than those provided on the original equipment. No equipment will have an unmuffled exhaust.

2.9 REQUIRED PERMITS AND APPROVALS

Table 2-2 lists the permits and approvals that shall be required to construction the proposed project.

Table 2-2. Potential Federal, State, and Local Permits Required

Agency	Activity	Entitlement
Federal		
U.S. Army Corps of Engineers	Required for placement of fill into waters of the United States	Section 404 – Nationwide Permit No. 14 Authorization
State		
California Department of Fish and Wildlife	Work in waters of the State	Section 1600 of the California Fish and Game Code – Lake and Streambed Alteration Agreement
Central Valley Regional Water Quality Control Board	Water quality certification required under to support the Section 404 Nationwide Permit Authorization	Section 401 – Water Quality Certification
State Water Resources Control Board	National Pollutant Discharge Elimination System Storm Water Permit and Stormwater Pollution Prevention Plan under Section 402 of the Clean Water Act	NPDES Stormwater Permit, 2012-0011-DWQ, CAS0000003 and General Activities Order No. 2009-009-DWQ, CAS0000002.
Central Valley Flood Protection Board	Encroachment Permit Application to demonstrate no downstream impacts	Encroachment Permit
Local		
Roseville City Council	Project Approval	Adoption of the MND and Mitigation Monitoring and Reporting Plan

3.0 ENVIRONMENTAL CHECKLIST

3.1 EXPLANATION OF INITIAL STUDY CHECKLIST

The California Environmental Quality Act (CEQA) Guidelines Appendix G recommends that lead agencies use an Initial Study (IS) checklist to determine the potential impacts of the proposed project on the physical environment. The checklist provides a list of questions concerning a comprehensive array of environmental issue areas potentially affected by the proposed project. This section of the IS incorporates the Appendix G environmental checklist form, contained in the State CEQA Guidelines. Impact questions and responses are included in both tabular and narrative formats for each of the 17 environmental topic areas. There are four possible answers to the checklist questions on the following pages. Each possible answer is explained below:

- A *Potentially Significant Impact* is appropriate if there is enough relevant information, as well as reasonable inferences from that information, that a fair argument can be made to support a conclusion that a substantial or potentially substantial adverse change may occur to any of the physical conditions within the area affected by the proposed project. When one or more of these entries are made, an Environmental Impact Report (EIR) is required.
- A *Less-than-Significant Impact with Mitigation Incorporated* is appropriate when the lead agency incorporates mitigation measures to reduce an impact from a potentially significant level to a less-than-significant level. For example, floodwater impacts could be reduced from a potentially significant level to a less-than-significant level by relocating a building to an area outside the floodway. The lead agency must describe the mitigation measures and briefly explain how the measures would reduce the impact to a less-than-significant level.
- A *Less-than-Significant Impact* is appropriate if there is evidence that one or more environmental impacts may occur, but the impacts are determined to be less than significant or the application of development policies and standards to the project would reduce the impact(s) to a less-than-significant level. For example, the application of the City's stormwater improvement standards would reduce potential erosion impacts to a less-than-significant level.
- A *No Impact* is appropriate where it can be demonstrated that the impact does not have the potential to adversely affect the environment. For example, a proposed in the center of an urbanized area with no agricultural lands on or adjacent to the project area clearly would not have an adverse effect on agricultural resources or operations.

All answers must take into account the whole action involved, including potential off- and on-site, indirect, direct, construction, and operation, except as provided for under State CEQA Guidelines Section 15183 and State CEQA Statute Section 21083. The setting discussion under each resource section in this chapter is followed by a discussion of impacts and applicable mitigation measures.

Aesthetics

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Setting

The project area is surrounded by industrial, light industrial and public/quasi-public City land use designations and industrial County land use designation (refer to Figure 2-5, *Existing General Plan Land Use Designations*). The existing built environment is characterized by a mix of industrial, institutional, commercial and open space facilities. There are no residential uses in the immediate vicinity; the nearest residential use is 0.6 mile southwest. The project area crosses Pleasant Grove Creek and is paralleled to the west by the Southern Pacific Railroad (SPRR). The proposed project activities would occur within existing City right-of-way.

The City has not designated specific scenic vistas in the project area; however, the City encourages designs that provide a balance between the aesthetic resources and the development requirements (Community Design Policy 3).

While the proposed project is located within the City of Roseville, the County of Placer limits are located to the west of the SPRR. The area within the County is identified as industrial land use and is zoned INP (Industrial Park) with a Dc (Design Scenic Corridor) Combining District (refer to Figure 2-3, *Existing General Plan Land Use Designations*, and Figure 2-4, *Existing Zoning Classifications*). The requirements and standards that apply to land uses within the Dc (Design Scenic Corridor) Combining District are the same as for the applicable zone with which the design review district is combined. The zoning ordinance states that the Dc (Design Scenic Corridor) Combining District requires a project to obtain design review approval prior to issuance of any permits in order to protect and enhance the aesthetic character of lands and buildings within public view.[1]

[1] Placer County Code, Chapter 17, Zoning Ordinance. Available at: http://www.placer.ca.gov/departments/communitydevelopment/planning/zoning%20ordinance. Accessed April 23, 2014.

There are no eligible or designated scenic highways within the City of Roseville. The nearest eligible scenic highway is State Route (SR) 49, located approximately 14 miles northeast of the proposed project.[2]

Discussion

a.–b. The City has not designated any specific scenic vistas to be protected in Roseville; therefore, the proposed project would not affect a scenic vista. There is not a state-designated scenic highway in the project vicinity, thus, the proposed project would not damage a scenic resources within a state scenic highway. West of the SPRR, the County has designated the area as INP-Dc (Industrial Park, Design Scenic Corridor) Combining District; however this area is not designated as a scenic vista. While the Dc (Design Scenic Corridor) Combining District requires County design review, the proposed project is not within the zoning area of the County. In addition, the proposed project would replace the existing bridge with a new bridge. Visible project features would have a bulk, scale, and design that would be compatible with existing roadway development. Therefore, the proposed project would not affect a scenic vista and would not damage a scenic resource. There are no impacts. No mitigation is required.

c. The proposed project would replace the Industrial Avenue Bridge over Pleasant Grove Creek and reconstruct Industrial Avenue to conform to the new bridge. The proposed project would provide a standard two-lane facility with standard shoulders and sidewalks and would raise the bridge profile to provide the necessary freeboard[3] over the 50-year flood event water surface elevation. As shown in Figure 2-5, *Site Plan*, the proposed project would not raise the profile of the bridge more than approximately four feet in height. Industrial Avenue is a three-lane roadway (two through lanes and one center turn-lane) to the north and south of the proposed project. The widening of the bridge to provide for the standard shoulders and sidewalks, would conform to the existing roadway to the north and south. Thus, visible project features would have a bulk, scale, and design that would be compatible with existing roadway development. The majority of the project area is not considered an area of highly valuable visual character; construction would be temporary and would not permanently degrade the character or quality of the project area and surroundings. The impact is less than significant. No mitigation is required.

d. While no nighttime construction is currently planned as part of the proposed project, there is a chance that a minor amount of nighttime construction would occur in order to minimize traffic disruptions during the day. This nighttime construction would be temporary. In addition, the proposed project is not located within an area that has high nighttime traffic, nor is it immediately adjacent to sensitive resources such as residences, care facilities, or schools. Thus, any additional light and glare associated with construction is considered minimal and no mitigation is required. Paved surfaces would be minimally increased as a result of the replacement of the bridge and the additional of standard shoulders and sidewalks. Ultimately, the project area would conform to the existing roadway north and south of the bridge. Therefore, additional glare as a result of the completed proposed bridge replacement project is minimal. The impact is less than significant. No mitigation is required.

[2] California Department of Transportation. California Scenic Highway Mapping System. Available at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm. Accessed March 10, 2014.
[3] Freeboard is the amount of clearance between the water surface elevation and the bottom of the bridge.

Agriculture and Forest Resources

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Setting

The project site is not designated for agricultural use by either the City's General Plan or its Zoning Ordinance, and it is not currently used for any agricultural purposes. The area is not designated as Prime or Unique Farmland, or Farmland of Statewide Importance by the state's Farmland Mapping and Monitoring Program (FMMP). The project area is designated Grazing Land with Urban or Built-Up Land on the northeast and southeast areas of the proposed project. There are no lands under a Williamson Act contract in the project area (California Department of Conservation 2010). Farmlands of Local Importance, as designated by the FMMP, are located approximately one mile northwest and southwest of the proposed project limits.

Discussion

a.–e. The project site contains no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or active agricultural operations. The proposed project would not involve the loss of any forest land or timberland. The project site is not zoned for agricultural use or designated for agricultural use by the City's General Plan or zoning ordinance. No agricultural operations exist in the vicinity of the proposed project. The proposed project would not involve any changes that could result in conversion of any farmland to a non-agricultural use or forestland to non-forest land use. Therefore, there are no impacts related to agricultural and forest resources. No mitigation is required.

Air Quality and Greenhouse Gases

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Setting

The proposed project is located in the Sacramento Valley Air Basin (SVAB), which is bounded by the Sacramento Valley extending from the Sacramento River Delta north to Shasta County. The Placer County portion of the SVAB is situated along the eastern edge of the Sacramento Valley and the lower slopes of the Sierra Nevada. Temperatures in the SVAB can exceed 100 degrees Fahrenheit (°F), caused by airflow from sub-tropical high-pressure areas that bring light winds and humidity below 20 percent. In the winter months, the SVAB experiences a higher percentage of days with calm atmospheric conditions, which result in stagnation of air and increased air pollution. The temperature inversions limit atmospheric mixing and trap pollutants, resulting in high pollutant concentrations near the ground surface. Thus, the SVAB's climate and topography contribute to the formation and transport of pollutants that contain ozone or other chemicals that react with sunlight throughout the region.

Air Quality Management

The air quality management agencies of direct importance in Placer County are the U.S. Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the Placer County Air

Pollution Control District (PCAPCD). The USEPA has established National Ambient Air Quality Standards (NAAQS) for which the CARB and the PCAPCD have primary implementation responsibility. The CARB and the PCAPCD are also responsible for ensuring that the California Ambient Air Quality Standards (CAAQS) are met. PCAPCD manages air quality in the Placer County portion of the SVAB; it has jurisdiction over air quality issues in the County and administers air quality regulations developed at the federal, state, and local levels. It is also responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development.

State and federal criteria pollutant emission standards have been established for the following pollutants: carbon monoxide (CO), ozone (O_3), particulate matter (particulate matter of less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). These pollutants are referred to as criteria pollutants because numerical criteria have been established for each pollutant, which define acceptable levels of exposure.

States with air quality that did not achieve NAAQS were required to develop and maintain a State Implementation Plan (SIP). A SIP constitutes a federally enforceable definition of the state's approach (or "plan") and schedule for the attainment of the NAAQS. The NAAQS and CAAQS are provided in Table 3-1, *National and California Ambient Air Quality Standards*.

Attainment Status

The NAAQS and CAAQS differ in many cases; therefore, it is possible for an area to be designated attainment by the USEPA and nonattainment by CARB. The SVAB is designated nonattainment for the federal $PM_{2.5}$ and the state PM_{10} standards. In addition, Placer County is located within the Sacramento region's severe nonattainment area for federal ozone standards and in a nonattainment status for state ozone standards. Table 3-2, *Sacramento Valley Air Basin Air Quality Attainment Status*, provides the attainment status for the SVAB.

Table 3-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 μg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 μg/m³)		0.075 ppm (147 μg/m³)		
Respirable Particulate Matter (PM_{10})	24 Hour	50 μg/m³	Gravimetric or Beta Attenuation	150 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 μg/m³		--		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		35 μg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 μg/m³	Gravimetric or Beta Attenuation	12.0 μg/m³	15 μg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	None	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		--	--	==
Nitrogen Dioxide (NO_2)[8]	1 Hour	0.18 ppm (339 μg/m³)	Gas Phase Chemiluminescence	100 ppb (188 μg/m³)	--	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)		0.053 ppm (100 μg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 μg/m³)	Ultraviolet Fluorescence	75 ppb (196 μg/m³)	--	Ultraviolet Flourescence; Spectrophotometry (Paraosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 μg/m³)	
	24 Hour	0.04 ppm (105 μg/m³)		0.14 ppm (for certain areas)	--	
	Annual Arithmetic Mean	--		0.30 ppm (for certain areas)	--	
Lead[9] (Pb)	30 Day Average	1.5 μg/m³	Atomic Absorption	--	--	High Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 μg/m³	Same as Primary Standard	
	Rolling 3-Month Average[10]	--		0.15 μg/m³		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24 Hour	25 μg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 μg/m³)	Gas Chromatography			

Source: Air Quality Report, RBF Consulting, 2013.

1 California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All other are not to be equaled or exceeded. CAAQS 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 eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m³ is equal to or less than one. For $PM_{2.5}$, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

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 procedure which can be shown to the satisfaction of CARB 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 To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

9 CARB 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.

10 National lead standard, rolling 3-month average: final rule signed October 15, 2008.

Table 3-2. Sacramento Valley Air Basin Air Quality Attainment Status

Pollutants	State	Federal
Carbon Monoxide (CO)	Unclassified	Nonattainment
Ozone (O_3) (1-hour standard)	Nonattainment	Severe 15 Nonattainment
Ozone (O_3) (8-hour standard)	Nonattainment	Severe 15 Nonattainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Particulate Matter <10 microns (PM_{10})	Nonattainment	Attainment[1]
Particulate Matter <2.5 microns ($PM_{2.5}$)	Unclassified	Nonattainment
Lead (Pb)	Attainment	Attainment
Sulfates	Attainment	---
Hydrogen Sulfides	Unclassified	---
Visibility Reducing Particles	Unclassified	---

Source: Air Quality Report, RBF Consulting, 2013.

[1] The USEPA eliminated the annual PM_{10} standard in its final rule revision in October 2006.

Transportation Conformity Rule

The USEPA, in conjunction with the U.S. Department of Transportation (DOT), established the Transportation Conformity Rule on November 30, 1993. The rule implements the Federal Clean Air Act (FCAA) conformity provision, which mandates that the federal government not engage, support, or provide financial assistance for licensing or permitting, or approve any activity not conforming to an approved FCAA implementation plant. The General Transportation Conformity Regulations apply to all federal actions except programs and projects requiring funding or approval from the DOT, the Federal Highway Administration (FHWA), the Federal Transit Authority (FTA), or the Metropolitan Planning Organization (MPO).

It should be noted that the Transportation Conformity Rule distinguishes between metropolitan and rural areas since metropolitan areas have MPO's, which are specifically charged with determining conformity under the FCAA. The MPO is responsible for transportation planning, including the development of federally required metropolitan transportation plans and Transportation Improvement Programs (TIPs) and determining conformity of such plans and TIPs. Transportation projects in rural areas are not included in MPO plans and TIPs. However, there are two types of rural areas for the purposes of the transportation conformity program, and the conformity requirements in these two types of rural areas are different. These two types of rural areas are defined as Isolated and Donut Areas.

The Transportation Conformity Rule has been amended several times since 1993 to address updates to the NAAQS and revise conformity provisions and procedures. Enacted in August 2005, the Safe, Accountable, Flexible, Efficient Transportation Act: A Legacy for Users (SAFETEA-LU) authorizes funding of the nation's transportation infrastructure and made several changes to the conformity portion of the FCAA. SAFETEA-LU was superseded by the Moving Ahead for Progress in the 21st Century Act (MAP-21), which was enacted on July 6, 2012. MAP-21 governs the use of federal funds for transportation investments.

Area Pollutants

The following air quality information briefly describes the various types of pollutants as well as associated health hazards.

- **Ozone (O_3):** Ozone is a colorless gas with a sharp odor, and is one of a number of substances called photochemical oxidants (highly reactive secondary pollutant). These oxidants are formed when hydrocarbons, Nitrogen Oxides (NO_X), and related compounds interact in the presence of ultraviolet sunlight. It is a photochemical pollutant, and needs Volatile Organic Compounds (VOC), NO_X, and sunlight to form; therefore, VOCs and NO_X are ozone precursors. To reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors. Ozone is a strong respiratory irritant and an oxidant that can cause substantial damage to vegetation and other materials. It can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of ozone. Short-term exposure (lasting for a few hours) to ozone at high levels can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.
- **Nitrogen Dioxide (NO_2):** NO_x are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone, and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations). NO_2 can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. Short-term exposure to NO_2 may increase resistance to air flow and airway contraction. Continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air, may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.
- **Inhalable Particulate Matter (PM_{10} and $PM_{2.5}$):** The federal and state ambient air quality standard for particulate matter applies to two classes of particulates: PM_{10} and $PM_{2.5}$. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. Fine particulate matter ($PM_{2.5}$) impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. Health concerns associated with inhalable particulate matter focus on those particles small enough to reach the lungs when inhaled. Sources of PM_{10} in the SVAB are both rural and urban, and include agricultural burning, discing of agricultural fields, industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.
- **Carbon Monoxide (CO):** Carbon monoxide is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. Motor vehicles are the dominant source of CO emissions in most areas. It is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes, are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of carbon monoxide. Exposure to high levels of carbon monoxide can slow reflexes and cause drowsiness, and result in death when in confined spaces at very high concentrations.

- **Carbon Dioxide (CO_2):** Carbon dioxide is an anthropogenic greenhouse gas (GHG) and is the dominant of all anthropogenic GHG emissions. Its long atmospheric lifetime (on the order of decades to centuries) ensures that atmospheric concentrations of CO_2 will remain elevated for decades. Increasing CO_2 concentrations in the atmosphere are primarily a result of emissions from the burning of fossil fuels, gas flaring, cement production, and land use changes.
- **Volatile Organic Compounds (VOCs) or Reactive Organic Gases (ROGs):** Hydrocarbons are organic gases that are formed solely of hydrogen and carbon. There are several subsets of organic gases including ROGs and VOCs. Both ROGs and VOCs are emitted from the incomplete combustion of hydrocarbons or other carbon-based fuels. The major sources of hydrocarbons are combustion engine exhaust, oil refineries, and oil-fueled power plants; other common sources are petroleum fuels, solvents, dry cleaning solutions, and paint (via evaporation). There are no specific state or federal VOC thresholds as they are regulated by individual air districts as O_3 precursors.
- **Total Suspended Particles (TSP) and Visibility:** Tiny airborne particles or aerosols that are less than 100 micrometers are collectively referred to as Total Suspended Particulate matter (TSP). These particles constantly enter the atmosphere from many natural sources including soil, bacteria, viruses, fungi, molds, yeast, and pollen. Man-made sources of TSP also include combustion products from space heating, industrial processes, power generation, and motor vehicle use. Over 99 percent of inhaled particulate matter is either exhaled or trapped in the upper areas of the respiratory system and expelled. The balance enters the windpipe and lungs, where some particulates cling to protective mucous and are removed. Other mechanisms, such as coughing, also filter out or remove particles. Collectively, these "pulmonary clearance" mechanisms protect the lungs from the majority of inhalable particles. Irritating odors are often associated with particulates. Some examples of sources are gasoline and diesel engine exhausts, large-scale coffee roasting, paint spraying, street paving, and trash burning. The EPA replaced TSP as the indicator for both the annual and 24-hour primary (i.e., health-related) standards in 1987. The indicator includes only those particles with an aerodynamic diameter smaller than or equal to PM_{10}.

Monitored Air Quality

The PCAPCD operates several air quality monitoring stations throughout the SVAB. The Roseville-North Sunrise Boulevard Monitoring Station is the closest monitoring station to the site (approximately 4.3 miles southeast). This station monitors O_3, NO_X, PM_{10}, and $PM_{2.5}$. The North Highlands-Blackfoot Way Monitoring Station (approximately 7.3 miles northeast) was used to gather data for CO and SO_X. The data collected at these stations is considered to be representative of the air quality experienced on-site. Air quality data from 2010 to 2012 is provided in Table 3-3, *Local Air Quality Levels*.

Table 3-3. Local Air Quality Levels

Pollutant	Primary Standard		Year	Maximum Concentration[1]	Number of Days State/Federal Std. Exceeded
	California	Federal			
Carbon Monoxide (CO) [3] (8-Hour)	9.0 ppm for 8 hours	9.0 ppm for 8 hours	2010 2011 2012	1.16 ppm 1.87 1.54	0/0 0/0 0/0
Carbon Monoxide (CO) [3] (1-Hour)	20 ppm for 1 hour	35 ppm for 1 hour	2010 2011 2012	3.10 ppm 2.30 3.10	0/0 0/0 0/0
Ozone (O_3) [2] (1-Hour)	0.09 ppm for 1 hour	N/A	2010 2011 2012	0.124 ppm 0.109 0.108	9/0 11/0 9/0
Ozone (O_3) [2] (8-Hour)	0.07ppm for 8 hours	0.075 ppm for 8 hours	2010 2011 2012	0.105 ppm 0.094 0.092	21/15 23/15 28/13
Nitrogen Dioxide (NO_x) [2] (1-Hour)	0.18 ppm for 1 hour	0.100 ppm	2010 2011 2012	0.071 ppm 0.066 0.055	0/0 0/0 0/0
Sulfur Dioxide (SO_X) [3] (24-Hour)	0.04 ppm for 24 hours	0.14 ppm for 24 hours	2010 2011 2012	0.002 ppm NM NM	N/A N/A N/A
Particulate Matter (PM_{10}) [2, 4, 5] (24-Hour)	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	2010 2011 2012	36.3 µg/m^3 56.5 43.2	0/0 1/0 0/0
Fine Particulate Matter ($PM_{2.5}$) [2,5] (24-Hour)	No Separate State Standard	35 µg/m^3 for 24 hours	2010 2011 2012	27.3 µg/m^3 42.3 16.1	NM/0 NM/1 NM/0

Source: Air Quality Report, RBF Consulting, 2013.

ppm = parts per million
µg/m^3 = micrograms per cubic meter
NM = Not Measured
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
NA = Not Applicable

[1] Maximum concentration is measured over the same period as the California Standard.
[2] Measurements taken at the Roseville-North Sunrise Boulevard Monitoring Station located at 151 North Sunrise Boulevard, Roseville, California 95561.
[3] Measurements taken at the North Highlands-Blackfoot Way Monitoring Station located at 7823 Blackfoot Way, North Highlands, California 95843.
[4] PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
[5] PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.

City of Roseville General Plan

The Air Quality and Climate Change Element of the City General Plan aims to protect the health and welfare of the community by promoting development that is compatible with air quality standards. The City has established goals and policies to improve air quality and address climate change. The following goals and policies pertain to the proposed project.

Goal 1: Improve Roseville's air quality by:

- Achieving and maintaining ambient air quality standards established by the EPA and the ARB; and,
- Minimizing public exposure to toxic or hazardous air pollutants and air pollutants that create a public nuisance through irritation to the senses (such as unpleasant odors).

Goal 4: Increase the capacity of the transportation system, including the roadway system and alternate modes of transportation.

Policy 5: Develop transportation systems that minimize vehicle delay and air pollution.

Climate Change

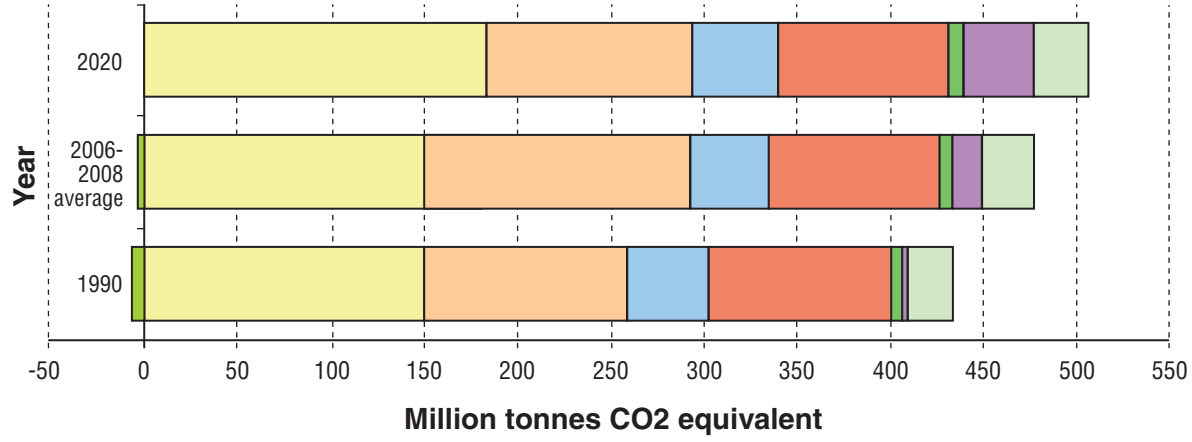
Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to GHG emissions, particularly those generated from the production and use of fossil fuels.

While climate changes has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization's in 1988, has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. Numerous efforts in legislation at the state and federal levels have resulted in policies with targets for GHG emissions reduction. Climate change research and policy efforts are primarily concerned with the emissions of GHGs related to human activity that include CO_2, methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2–tetrafluoroethane), and HFC-152a (difluoroethane).

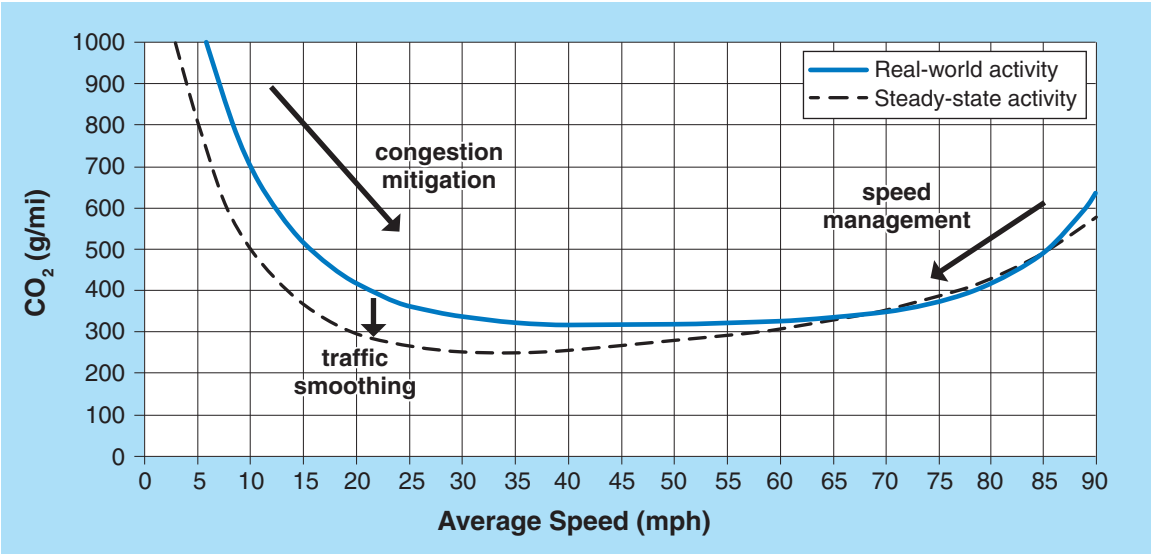
The Assembly Bill (AB) 32 Scoping Plan contains the main strategies California will use to reduce GHG emissions. As part of the supporting documentation for the AB 32 Scoping Plan, CARB released the GHG inventory for California (Forecast last updated October 28, 2010). The forecast is an estimate of the emissions expected to occur in year 2020 if none of the foreseeable measures included in the AB 32 Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for years 2006, 2007, and 2008; refer to Figure 3-1, *California GHG Inventory and Vehicle CO_2 Emissions vs. Speed*.

The California Department of Transportation (Caltrans) and its parent agency, the Business, Transportation, and Housing Agency, have taken an active role in addressing GHG emission reduction and climate change; Figure 3-2, *Mobility Pyramid.* Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, Caltrans has created and is implementing the Climate Action Program at Caltrans that was published in December 2006 (RBF 2013b).

California GHG Inventory Forecast

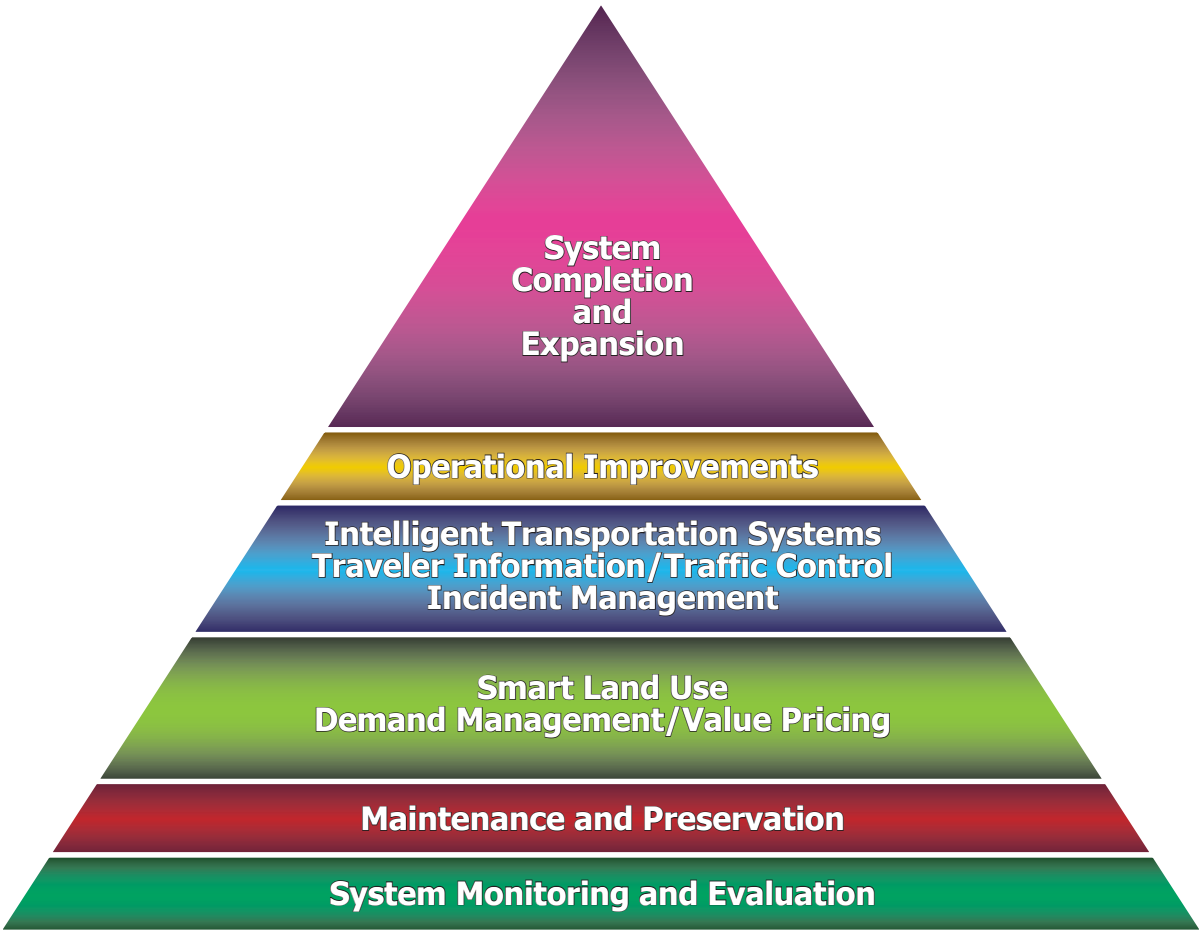


Fleet CO2 Emissions vs. Speed (Highway)



INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

California GHG Inventory and Vehicle CO_2 Emissions vs. Speed



INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

Mobility Pyramid

3/13/14 JN 134939-20051 MAS

Figure 3-2

In addition, the City has existing programs in place that reduce and minimize GHG emissions:

- City-adopted National Action Plan for Energy Efficiency (2006).
- City of Roseville Greenhouse Gas Emissions Reduction Action Plan (2009).
- City of Roseville Community Wide Sustainability Action Plan (2010).
- Solar electric (PV) incentive programs.
- Joined California Climate Action Registry (2006).
- Asphalt recycling.
- City-adopted Smart Choices for Roseville's Future: Implementation Strategies to Achieve Blueprint Project Objectives (June 2005).
- Residential energy efficiency programs.
- City-installed solar electric generation (PV) on several city facilities.
- Energy efficiency programs for low income residents.
- City Civic Center and Roseville Electric buildings powered with clean, renewable power by purchasing 100 percent of their energy use from Green Roseville.
- Commercial energy efficiency programs.
- 20 percent renewable power resources in Roseville Electric's power portfolio.
- Tree mitigation ordinance.
- Shade tree program.
- Parking lot shade tree ordinance.
- Roseville Electric goal to reduce energy requirements by 5 percent by 2012.
- Recycling drop-offs throughout city.
- Alternatively fueled city vehicles.
- Summer youth bus pass.
- Electric vehicle charging stations.
- Bicycle incentive programs.
- City traffic signal head retrofit from traditional incandescent to LED.
- Intelligent Transportation System (ITS) for traffic management.
- City facilities retrofitted with a HVAC efficiency management program.
- Alternatives to paper at the library.

Sensitive Receptors

Sensitive populations (sensitive receptors) are more susceptible to the effects of air pollution than the general population. Sensitive receptors that are in proximity to localized sources of toxins and CO are of particular concern. A sensitive receptor is a person in the population who is particularly susceptible to

health effects due to exposure to an air contaminant. Land uses considered sensitive receptors include residences, motels/hotels, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The PCAPCD generally defines sensitive receptors as schools, hospitals, senior centers, and places where people of poor health may be located. Sensitive receptors located near the proposed project include residential uses to the east (approximately 0.75 mile); schools to the east (approximately 1 mile), west, southeast and southwest (approximately 1.5 mile); and there are private recreational facilities within close proximity of the proposed project (baseball, softball, basketball, trampoline, gymnastic, and other facilities that use warehouse/industrial buildings for their services).

PCAPCD Adopted Rules

The PCAPCD has adopted a number of District Rules that apply to the construction phase of the proposed project. Standard City practice is to include applicable adopted rules as notes on the approved engineering plan set as a reminder to the construction contractor.

Discussion

a. Project development would occur under the jurisdiction of the PCAPCD within the SVAB. As shown in Table3-2, the SVAB is designated nonattainment for the federal $PM_{2.5}$ and the State PM_{10} standards, as well as for both the federal and State ozone standards. In order to address the federal nonattainment for ozone, the PCAPCD, along with other local air districts in the SVAB, is required to comply with and implement the SIP to demonstrate when and how the region can attain the federal ozone standards. As such, the PCAPCD, along with the other air districts in the region, prepared the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (Plan) in December 2008. The PCAPCD adopted the Plan on February 19, 2009. The CARB determined that the Plan meets CAA requirements and approved the Plan on March 26, 2009 as a revision to the SIP. Accordingly, the Plan is the applicable air quality plan for the proposed project site. It should be noted that an update to the Plan, the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 SIP Revisions), has been prepared and was approved and adopted on September 26, 2013. The 2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan will be submitted to the USEPA as a revision to the SIP.

   The Plan demonstrates how existing and new control strategies would provide the necessary future emission reductions to meet the federal CAA requirements, including the NAAQS. Adoption of all reasonably available control measures is required for attainment. Measures could include, but are not limited to, the following: regional mobile incentive programs; urban forest development programs; and local regulatory measures for emission reductions related to architectural coating, automotive refinishing, natural gas production and processing, asphalt concrete, and various others.

   A conflict with, or obstruction of, implementation of the Plan could occur if a project generates greater emissions than what has been projected for the site in the emission inventories of the Plan. Emission inventories are developed based on projected increases in population, employment, regional vehicle miles traveled (VMT), and associated area sources within the region, which are based on regional projections that are, in turn, based on the General Plan Land Use and Zoning

Designations for the region. In addition, general conformity requirements of the Plan include whether a project would cause or contribute to new violations of any NAAQS, increase the frequency or severity of an existing violation of any NAAQS, or delay timely attainment of any NAAQS.

The project proposes to replace the existing narrow bridge to accommodate a standard width involving two travel lanes with shoulders (for bike lanes) and a sidewalk on the east side. The proposed project would not modify the existing land use or operations on the site. Thus, the project would not conflict with the emissions inventories of the Plan, and would be considered consistent with the Plan. In addition, the PCAPCD's permits, rules, and regulations are in compliance with the Plan, and the proposed project is required to comply with all applicable PCAPCD rules and regulations. Furthermore, as analyzed and determined in the discussions below, the proposed project would not result in project-level construction emissions that would exceed the applicable thresholds of significance. Thus, the project would not cause or contribute to new violations of any NAAQS, increase the frequency or severity of an existing violation of any NAAQS, or delay timely attainment of any NAAQS.

Because the proposed project would not conflict with the emissions inventories of the Regional Air Quality Plan, it would result in emissions below the thresholds of significance, and would not conflict with or obstruct implementation of the applicable Air Quality. Thus, impacts are less than significant. No mitigation is required.

b. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, the PCAPCD recommends significance thresholds for emissions of PM_{10}, carbon monoxide (CO), and ozone precursors-reactive organic gases (ROG) and nitrous oxides (NOx). Table 3-1 presents PCAPCD's recommended thresholds of significance for use in the evaluation of air quality impacts associated with proposed development projects. The City of Roseville, as Lead Agency, utilizes the PCAPCD's recommended project-level criteria air pollutant thresholds of significance for CEQA evaluation purposes. Thus, if the proposed project's emissions exceed the pollutant thresholds presented in Table 3-4, *PCAPCD Recommended Thresholds of Significance*, the project could have a significant effect on air quality and the attainment of federal and State Ambient Air Quality Standards.

Table 3-4. PCAPCD Recommended Thresholds of Significance

Phase	Pollutant (lbs/day)			
	ROG	NO_X	PM_{10}	CO
Construction	82	82	82	550
Operation	82	82	82	5

Source: Placer County Air Pollution Control District, 2012.
CO = carbon monoxide
NO_X = nitrogen oxides
PM_{10} = particulate matter smaller than 10 microns
ROG = reactive organic gases.

Implementation of the proposed project would contribute local emissions in the area during construction. Short-term construction-related emissions resulting from project construction were estimated using the California Emissions Estimator Model (CalEEMod) computer model.

Construction Emissions

Construction activities would result in short-term impacts on ambient air quality from site clearing, preparation, and grading, and indirectly from construction equipment emissions and construction worker commute trips. Pollutant emissions would vary daily depending on the level of activity, specific operations, and prevailing weather. Earth-moving and site grading activities would potentially result in the highest daily fugitive dust generation. Stationary or mobile powered on-site construction equipment would include trucks, tractors, signal boards, excavators, backhoes, concrete saws, graders, cranes, scrapers, forklifts, dozers, rollers, pavers, and other paving equipment. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM emissions. As construction of the proposed project would generate air pollutant emissions intermittently within the site and vicinity of the site, until all construction has been completed, construction is a potential concern because the proposed project is in a non-attainment area for ozone and PM.

The proposed project is required to comply with all PCAPCD rules and regulations for construction, including, but not limited to Rule 202 related to visible emissions, Rule 217 related to volatile organic compound emissions and Rule 228 related to fugitive dust, which would be noted on City-approved construction plans. In addition, the City has adopted construction standards that apply to all projects within the City limits that require projects to meet specific engineering and design requirements. The proposed project would be required to comply with the City's Department of Public Works Construction Standards, Section 111, that are intended to minimize fugitive dust and PM_{10} emissions during construction activities. Compliance with the engineering and design requirements would be noted on City-approved construction plans as well.

As shown in Table 3-4, the PCAPCD threshold of significance for construction is 82 pounds per day for ROG, NO_X, and PM_{10} and 550 pounds per day for CO. Table 3-5, *Maximum Unmitigated Project Construction Emissions,* presents the estimated construction-related emissions of ROG, NO_X, PM_{10}, and CO resulting from the proposed project. Construction emissions do not exceed the PCAPCD thresholds. Therefore, impacts are less than significant in this regard. No mitigation is required.

Table 3-5. Maximum Unmitigated Project Construction Emissions

Emissions Source	Emissions (pounds per day)[1]			
	ROG	NO_X	PM_{10}	CO
Year 1				
Construction Emissions	7.38	76.26	8.49	51.33
PCAPCD Threshold	*82*	*82*	*82*	*550*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***
Year 2				
Construction Emissions	36.29	17.88	1.17	11.81
PCAPCD Threshold	*82*	*82*	*82*	*550*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***

1. Emissions calculated using California Emissions Estimator Model.
Refer to Appendix A, *Air Quality and Greenhouse Gas Emissions Data*, for assumptions used in this analysis, including quantified emissions reduction by mitigation measures.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading, excavation and construction is expected to be short-term and would cease upon project completion. Additionally, most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} (particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants.

Adherence to PCAPCD Rule 228, which requires watering of inactive and perimeter areas, track out requirements, to reduce PM_{10} concentrations, would further reduce fugitive dust emissions. As depicted in Table 3-5, total PM_{10} emissions would not exceed the PCAPCD thresholds during construction. Therefore, impacts are less than significant. No mitigation is required.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to/from the site. As presented in Table 3-5, construction equipment and worker vehicle exhaust emissions would be below the established PCAPCD thresholds. Therefore, air quality impacts from equipment and vehicle exhaust emission are less than significant. No mitigation is required.

Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies and was identified as a toxic air contaminant by the CARB in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock

is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), serpentinite and ultramafic rocks are not known to occur within the project area. Thus, there is no impact in this regard. No mitigation is required.

Total Daily Construction Emissions

In accordance with the PCAPCD Guidelines, CalEEMod was utilized to model construction emissions for ROG, NO_X, CO, and PM_{10}. As indicated in Table 3-5, impacts would be less than significant for all criteria pollutants during construction. Implementation of standard PCAPCD measures would further reduce these emissions. Thus, construction related air emissions are less than significant. No mitigation is required.

Operational Emissions

Operational emissions of ROG, NO_X, CO, and PM_{10} are generated by mobile and stationary sources, including day-to-day activities such as vehicle trips to and from a project site, natural gas combustion from heating mechanisms, landscape maintenance equipment exhaust, and consumer products (e.g., deodorants, cleaning products, spray paint, etc.). However, as discussed previously, the proposed project would remove the functionally obsolete, narrow two-lane bridge and construct a standard two-lane bridge with shoulders, a sidewalk, and a raised profile. The proposed project would not create new or add significant capacity to Industrial Avenue and would not modify the existing land use or operations on the project site. Thus, the proposed project would not involve mobile, stationary, or area sources and new operational emissions would not occur. Therefore, the proposed project would result in a less-than-significant impact associated with operational emissions. No mitigation is required.

Conclusion

The proposed project would not exceed the applicable thresholds of significance for air pollutant emissions during construction or operation. The project would not violate any air quality standard or contribute substantially to an existing or projected air quality violation. Therefore, implementation of the proposed project would result in a less-than-significant impact related to air quality. No mitigation is required.

c. The proposed project is within a nonattainment area for ozone and PM. The growth and combined population, vehicle usage, and business activity within the nonattainment area from the project, in combination with other past, present, and reasonably foreseeable projects within the City of Roseville and surrounding areas, could either delay attainment of the standards or require the adoption of additional controls on existing and future air pollution sources to offset emission increases.

Construction emissions are a one-time release and would occur temporarily (approximately over a two year span). Accordingly, the incremental contribution of the proposed project's construction-related emissions would not be cumulatively considerable. Per PCAPCD rules and mandates, as

well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements would also be imposed on construction projects throughout the Basin, which would include related projects. Adherence to PCAPCD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed. As a result, the proposed project would not contribute a cumulatively considerable net increase of any nonattainment criteria pollutant. Therefore, cumulative operational impacts associated with implementation of the proposed project are less than significant. No mitigation is required.

d. The project proposes to replace the existing narrow bridge to accommodate a standard width involving two travel lanes with shoulders (for bike lanes) and a sidewalk on the east side. As presented above, CO emissions were determined to be below thresholds during construction of the proposed project. Emissions of CO results from the incomplete combustion of carbon-containing fuels such as gasoline or wood and are particularly related to traffic levels. As the project would not create new or add significant capacity to Industrial Avenue and would not increase the total daily VMT, the proposed project would not result in an increase in vehicle trips in the area. Accordingly, the proposed project would not cause substantial levels of CO at surrounding intersections or generate localized concentrations of CO that would exceed standards. Impacts are less than significant. No mitigation is required.

Toxic Air Contaminants (TACs) are a category of environmental concern as well. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommendations for citing new sensitive land uses near sources typically associated with significant levels of TAC emissions, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure and associated risk of contracting cancer.

Because the proposed project does not involve on-site operations, long-term operation of any stationary diesel engine or other major on-site stationary source of TACs would not occur. Emissions of DPM resulting from construction-related equipment and vehicles would be temporary. Furthermore, the proposed project would not introduce any sensitive receptors to the area, and, thus, would not expose sensitive receptors to any existing sources of substantial pollutant concentrations. In conclusion, the proposed project would not introduce sensitive receptors to the area and would not generate substantial levels of pollutant concentrations that would expose existing sensitive receptors in the area. Therefore, impacts related to exposing sensitive receptors to substantial pollutant concentrations are less than significant. No mitigation is required.

e. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and air districts. Project-related odor emissions would be limited to the construction period, when emissions from equipment may be evident in the immediately surrounding area. These activities would be short term in nature and cease upon project completion. Any impacts to existing adjacent land uses would be short-term, as previously noted, and are not likely to

result in nuisance odors that would violate PCAPCD odor regulations. This impact is less than significant. No mitigation is required.

f., g. Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and City, and virtually every individual on earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

As discussed previously, the proposed project would not modify the existing land use or operations on the project site. Thus, the proposed project would not involve mobile, stationary, or area sources and new operational emissions, including GHG emissions, would not occur. Accordingly, the only increase in GHG emissions generated by the proposed project that would contribute to global climate change would occur during the construction phase, which would be temporary. Due to the inherently cumulative nature of global climate change, effects of which occur over a long period of time, a project's GHG emissions contribution is typically quantified and analyzed on an annual basis (i.e., annual operational GHG emissions). Construction-related GHG emissions are a one-time release that occurs over a short period of time; nonetheless, construction-related GHG emissions have been quantified for the proposed project.

The estimated construction-related GHG emissions attributable to the proposed project would be primarily associated with increases of CO_2 and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and construction equipment usage. The proposed project's short-term construction-related emissions were estimated using the CalEEMod computer model. The model quantifies direct GHG emissions from construction, which are expressed in tons per project of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants. The estimated increase in GHG emissions associated with construction of the proposed project is summarized in Table 3-6, *Estimated Project Construction Greenhouse Gas Emissions*.

Table 3-6. Estimated Project Construction Greenhouse Gas Emissions

Source	CO_2	CH_4		N_2O		Total
	MT/yr[1]	MT/yr[1]	$MTCO_2eq/yr$[2]	MT/yr[1]	$MTCO_2eq/yr$[2]	$MTCO_2eq/yr$[3]
Construction (amortized over 30 years)	13.58	0.00	0.09	0.00	0.00	13.67
Total Project-Related Construction Emissions[3]	***13.67 $MTCO_2eq/yr$***					

Notes:
1. Emissions calculated using California Emissions Estimator Model.
2. Carbon dioxide equivalent values calculated using the United States Environmental Protection Agency Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/cleanenergy/energy-resources/calculator.html, accessed April 30, 2014.
3. Totals may be slightly off due to rounding.

Refer to Appendix A, *Air Quality/Greenhouse Gas Data*, for detailed model input/output data.

As presented in Table 3-6, short-term emissions of GHG associated with construction of the proposed project are estimated to be 13.67 $MTCO_2e$. Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years).[4] As stated

[4] The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (http://www.aqmd.gov/hb/2008/December/081231a.htm).

above, because construction-related GHG emissions are a one-time release that occurs over a short period of time and are typically considered separate from operational emissions, construction-related GHG emissions are not typically considered to result in a substantial contribution towards global climate change. In addition, no applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions apply to the project area. Neither the PCAPCD nor the City has established thresholds of significance for construction-related GHG emissions. Therefore, the proposed project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs. Due to the size of the proposed project and lack of any change to annual operational emissions, the GHG emissions resulting from construction of the proposed project are not expected to significantly contribute to the cumulative GHG levels of the area. For comparison purposes, multiple agencies have developed draft interim thresholds of significance for GHG emissions, including the following:

- 1,100 $MTCO_2e$ per year according to Bay Area Air Quality Management District (BAAQMD);
- 1,600 $MTCO_2e$ per year according to CARB;
- 3,000 $MTCO_2e$ per year according to South Coast Air Quality Management District (SCAQMD); and
- 900 $MTCO_2e$ per year according to San Diego County.

The proposed project's construction-related emissions would be substantially below all of the draft interim thresholds of significance listed above for GHG emissions, and would occur only one time, not annually or over multiple years. Therefore, the proposed project's construction-related GHG emissions are not expected to cause a significant impact. In conclusion, operational GHG emissions would be minimal and would not change as a result of the proposed project; however, construction of the proposed project would generate GHG emissions that would contribute to the overall GHG levels in the atmosphere. Although the proposed project would contribute to GHG levels during construction, the incremental contribution to cumulative GHG emissions and global climate change would be minor. In addition, the GHG emissions resulting from construction of the proposed project would occur only once temporarily during construction. Therefore, a less than significant impact would occur in this regard. No mitigation is required.

Biological Resources

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Adversely impact, either directly or through habitat modifications, any endangered, rare or threatened species, as listed in Title 14 of the California Code of Regulations Sections 670.2 or 670.5) or in Title 50, Code of Federal Sections 17.11 or 17.12)?	☐	☒	☐	☐
b) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or the United States Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or the United States Fish and Wildlife Service?	☐	☒	☐	☐
d) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act including, but not limited to, marshes, vernal pools, coastal areas) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
e) Interfere substantially with the Movement of any native resident or migratory fish or wildlife species or with any established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
f) Conflict with any local policies or ordinances protecting biological Resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
g) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☒	☐

Setting

Surrounding land uses include light industrial development to the north and south of the biological area of potential effects (APE). East and west of the biological APE are undeveloped lands along the floodplain of the creek, mostly dry annual grassland, with marshes and woody riparian vegetation extending upstream and downstream of the biological APE; Figure 3-3, *Vegetation Map.* The Santucci Justice

Center Courthouse is located immediately northeast of the biological APE, and the Southern Pacific Railroad (SPRR) runs parallel to Industrial Avenue to the west.

A high terrace of apparently manmade vernal pools in a grassland matrix is located approximately 400 feet east of the biological APE, and extends east to State Route (SR) 65. The majority of this grassland is preserved as a City of Roseville Wetland Preserve. No vernal pools are located within the biological APE and runoff from the grassland-vernal pool matrix is intercepted by the confluence of Pleasant Grove Creek and an unnamed tributary from the southeast.

A roadside ditch on the west side of Industrial Avenue conveys runoff from Industrial Avenue and the railroad embankment, and drains into Pleasant Grove Creek. East of Industrial Avenue, the ditches are supported by development runoff and irrigation from the industrial park to the southeast. A presumed beaver (*Castor canadensis*) dam, located approximately 225 feet west of the biological APE on Pleasant Grove Creek, is contributing (all or in part) to the sluggishness of the flows, and the partial impoundment of the creek flows upstream of the dam into the lower portions of the roadside ditches.

Study Methods

A Natural Environment Study (NES) and Biological Assessment (BA) were prepared by EcoBridges Environmental Consulting in February 2014. A Waters Delineation Report was prepared by Chainey-Davis Biological Consulting and a Fishery Resources Report was prepared for the proposed project by A.A Rich and Associates, both in October 2013.

Studies for the project began by generating global information system (GIS) and Google Earth maps of plant, animal, and habitat records in the California Natural Diversity Database (CNDDB) prior to the site visit; these maps were generated on August 7, 2013. A full written (condensed) CNDDB report was generated on August 21, and a wide tabular report was generated on October 16. The CNDDB maps and reports are based on the nine U.S. Geological Survey (USGS) quadrangles centered on the Roseville quad (the other eight are Sheridan, Lincoln, Gold Hill, Pleasant Grove, Rocklin, Rio Linda, Citrus Heights, and Folsom). An unofficial U.S. Fish and Wildlife Service (USFWS) species list was generated for the USGS Roseville quadrangle on August 21, 2013 (EcoBridges Environmental Consulting 2014). Environmental documents for surrounding developments were sought and the following were reviewed:

- Hewlett-Packard Master Plan DEIR (City of Roseville 1996)
- Longmeadow Mitigated Negative Declaration (City of Roseville 2004)
- City of Roseville Open Space Preserve Overarching Management Plan (City of Roseville 2011)
- Draft Subsequent Environmental Impact Report for the City of Roseville 2020 Transportation System Capital Improvements Program Update (City of Roseville 2007)
- South Placer Justice Center Initial Study and Environmental Checklist (City of Roseville 2003)

0 300'
APPROXIMATE

4/28/14 JN 134939-20051 MAS

INDUSTRIAL AVENUE BRIDGE PROJECT • IS/MND

Vegetation Map

Figure 3-3

California black rail surveys were conducted by black rail expert Jerry Tecklin on July 18, July 30, and August 9, 2013. A reconnaissance bat survey and habitat assessment was conducted by Sacramento bat expert Kimi Fettke on September 16, 2013. The field visit for the California red-legged frog site assessment was conducted on September 25, 2013, by wildlife biologist Anne Wallace.

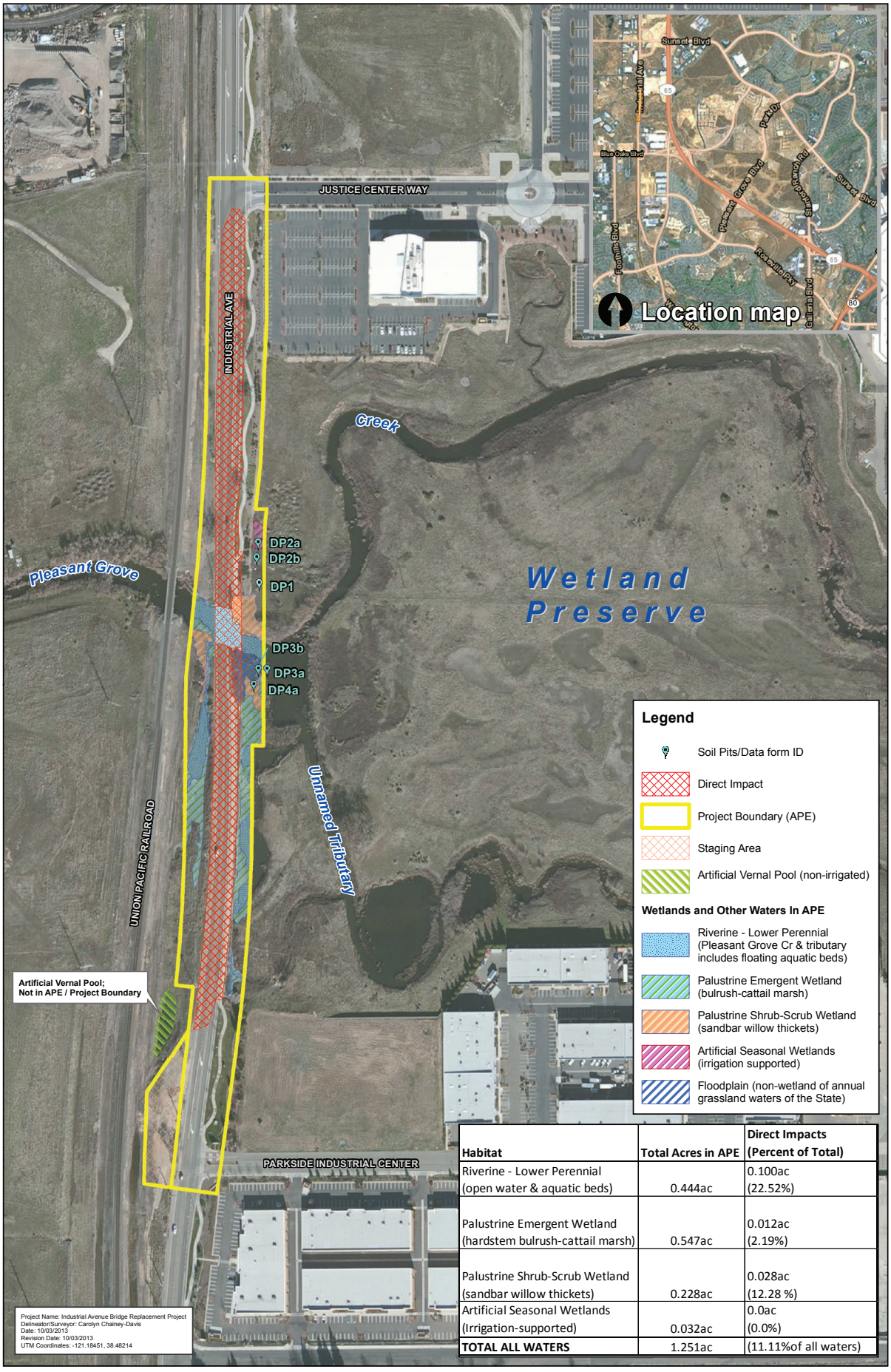
Fisheries biologist Dr. Alice A. Rich and a biological assistant conducted a field investigation on September 24 and October 18, 2013 to assess fish habitat conditions in Pleasant Grove Creek within the project area, and other areas of the creek up and downstream of the Industrial Avenue Bridge.

Natural Communities

Natural communities within the biological APE are both aquatic (Figure 3-4, *Delineation of Wetlands and Other Areas)* and terrestrial (refer to Figure 3-3). The communities include: Riverine - Lower Perennial (Pleasant Grove Creek and unnamed tributary); Aquatic Bed – floating, vascular (mosquito fern-duckweed mats); Palustrine Emergent Wetland (hardstem bulrush-cattail marsh); Palustrine Scrub-Shrub Wetland (sandbar willow thickets); Annual Grassland (wild oats and annual brome grasslands – highly disturbed stands); and Artificial Seasonal Wetland – Palustrine Emergent Wetland (Persistent). An artificial vernal pool is located at the base of the railroad embankment, adjacent to the staging area, in the southwest corner of the project area (outside of the project boundaries). The feature is supported by precipitation alone and contains some vernal pool plant species.

Riverine - Lower Perennial

Pleasant Grove Creek within the project area is a low-gradient, sluggish reach with a broad, open channel that is nearly obscured by tiny, floating aquatic plants (described below). The classification for this reach is Riverine–Lower Perennial with an unconsolidated bed. The open channel, or active channel, as it passes through the project study area, is approximately 55 to 75 feet in width. The depth is unknown but is estimated to be a minimum of 3.3 to 6.6 feet deep at the center of the channel.



Legend

- Soil Pits/Data form ID
- Direct Impact
- Project Boundary (APE)
- Staging Area
- Artificial Vernal Pool (non-irrigated)

Wetlands and Other Waters In APE

- Riverine - Lower Perennial (Pleasant Grove Cr & tributary includes floating aquatic beds)
- Palustrine Emergent Wetland (bulrush-cattail marsh)
- Palustrine Shrub-Scrub Wetland (sandbar willow thickets)
- Artificial Seasonal Wetlands (irrigation supported)
- Floodplain (non-wetland of annual grassland waters of the State)

Habitat	Total Acres in APE	Direct Impacts (Percent of Total)
Riverine - Lower Perennial (open water & aquatic beds)	0.444ac	0.100ac (22.52%)
Palustrine Emergent Wetland (hardstem bulrush-cattail marsh)	0.547ac	0.012ac (2.19%)
Palustrine Shrub-Scrub Wetland (sandbar willow thickets)	0.228ac	0.028ac (12.28 %)
Artificial Seasonal Wetlands (Irrigation-supported)	0.032ac	0.0ac (0.0%)
TOTAL ALL WATERS	1.251ac	(11.11%of all waters)

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Delineation of Wetlands and Other Waters

4/28/14 JN 134939-20051 MAS

Figure 3-4

The width of the emergent marsh and/or willow riparian thickets on the banks of the stream ranges from 6.6 to 40 feet. The gently sloping stream banks and shallows on the edge of the stream that are permanently flooded support persistent emergent wetlands of cattails and bulrush approximately 1.7 to 3.28 feet in height. The steeper seasonally flooded banks, and portions of the floodplain, support dense thickets of sandbar willow with widely scattered small riparian trees. The aquatic beds, emergent marsh, and willow riparian thickets are described in more detail below.

The confluence of an unnamed perennial tributary branch from the southeast occurs immediately outside the eastern boundary of the biological APE. Flows from Pleasant Grove Creek, which have been semi-impounded by the beaver dam downstream, back up into the roadside ditches, and inundate significant portions of the ditches.

Aquatic Bed – Floating, Vascular

Mats of floating, tiny vascular plants are extensive across the shallow and deepwater habitat of Pleasant Grove Creek, due to the low gradient and low velocity of the flows, which may be induced—or at least enhanced—by the beaver dam downstream of the railroad bridge. The flows are so sluggish within the biological APE that nearly the entire active channel was obscured by the aquatic beds at the time of the site visit. The individual plants range in size from 0.02 to 1.9 inches. The dominant species is mosquito fern (*Azolla filiculoides*), a tiny aquatic fern forming extensive reddish-green carpets across the water surface. It is common in ponds, ditches, and slow-moving streams in California but extends to Eurasia, Africa, and South America. Other floating aquatic species present include duckweed (*Lemna* spp.) and northern watermeal (*Wolffia borealis*).

When growing in full sunlight, mosquito fern naturally produces reddish anthocyanin in the leaves. The plants reproduce prolifically by fragmentation and contain nitrogen-fixing bluegreen algae. They are sometimes used as a method for controlling mosquitoes by blocking the water surface (EcoBridges Environmental Consulting 2014).

Palustrine Emergent Wetland

Palustrine Emergent Wetlands—whether seasonally or perennially flooded—are subject to federal and state regulation. Palustrine emergent wetland occurs as a fringe of permanently flooded emergent marsh at and below ordinary high water along the more gently sloping banks of Pleasant Grove Creek, and flooded portions of the roadside ditches. Portions of this habitat may be seasonally or infrequently exposed during low water or in drought years. The dominant species are hardstem bulrush and cattail species, although they typically grow in separate colonies in small to large patches. However, the habitat structure is roughly the same with both growing as dense 3.28- to 6.6-foot-tall stands of persistent grass-like plants. Other wetland herbs are present but rarely dominant and occur as small plants at the base of the bulrush and cattails, such as dotted smartweed (*Polygonum punctatum*). Both bulrush and cattail grow by underground rhizomes and by seed. Wind, water, and animals easily disperse the seeds long distances.

The hardstem bulrush marsh and cattail marsh alliances occur across California along streams, ponds, lakes, sloughs, roadside ditches, and freshwater and slightly brackish marshes. However, the extent of these marshes is considerably less than their historic extent due to alteration for agricultural uses. Stands in the Sacramento–San Joaquin delta region are estimated to have once covered approximately 1.2 million acres prior to the mid-1800s. All marshes are considered sensitive plant communities due to their status as

wetlands and riparian habitat, historic losses, and threats to remaining occurrences (EcoBridges Environmental Consulting 2014).

Palustrine Scrub-Shrub Wetland

This woody riparian habitat occurs as dense thickets of shrubby willows, 6 to 9 feet tall, on the banks at a zone above the elevation of the emergent marsh; they are seasonally but not permanently flooded. They occur on Pleasant Grove Creek, its tributary, on wetter portions of the floodplain, and sporadically along the inundated portions of the roadside ditch.

Other willows are present but sandbar willow is the clear dominant species. It spreads by underground shoots on lateral roots through a process called suckering, forming extremely dense stands. Seeds typically only germinate on freshly deposited alluvium. Other tree and shrub species are present but widely scattered and never dominant within the biological APE. These include valley oak (*Quercus lobata*) and California walnut (*Juglans hindsii*). Although *Juglans hindsii* is considered a California Native Plant Society (CNPS) List 1B plant, the special-status only refers to native stands, which are not present in or near the biological APE and there is only one confirmed native stand in California. It was widely used as a root stock for English walnut (*Juglans regia*) and most occurrences are believed to be naturalized (not native).

Statewide, it occurs on temporarily flooded floodplains, depositions along rivers and streams, and at springs throughout California. Most of the habitat in the biological APE is seasonally flooded during high water and would be considered jurisdictional wetlands subject to federal regulation and subject to state regulation as a riparian community within the stream zone.

Annual Grassland

Annual grassland occurs in the biological APE as highly disturbed and weedy dry grasslands within the right-of-way of Industrial Avenue. Semi-natural stands occur on the terrace above the creek outside the northeast corner of the biological APE, and on portions of the floodplain. Dominant grasses observed include wild oats (*Avena* spp.), ripgut brome (*Bromus diandrus*), and soft chess (*Bromus hordeaceus*). Other species observed during the August surveys include Fitch's spikeweed (*Centromadia fitchii*), pitgland tarweed (*Holocarpha virgata* ssp. *virgata*), and the invasive nonnative stinkwort (*Dittrichia graveolens*). Small patches of the native perennial grass creeping wildrye (*Leymus triticoides*) occur in the lower-lying portions of the grassland adjacent to the streams and marsh. Within the biological APE, scattered small stands or individuals of coyote brush are also found, adding structure and escape cover to an otherwise herb-dominated habitat.

Annual grasslands in the biological APE are a predominantly nonnative and common natural community, widespread in California. They occur in all topographic settings in waste places, rangelands, and openings in woodlands. They are not considered sensitive or subject to regulation.

Artificial Seasonal Wetland – Palustrine Emergent Wetland

A small (0.0137 acre) artificial seasonal wetland is located in the northeast portion of the biological APE, at the bottom of a small slope between the landscaped and irrigated curb and spoil piles to the east. The small wetland appears to depend entirely on runoff from the curbside landscape irrigation (regularly spaced pop-up sprinklers).

The feature has a level bottom that drains to the southwest and does not appear to pool; it is expected to be saturated to surface during most of the growing season and at its deepest may inundate to a depth of 0.25 inches. The near year-round saturation from irrigation has resulted in a densely vegetated patch of robust native and nonnative perennial and annual wetland plants such as young cattails, creeping spikerush (*Eleocharis macrostachya*), annual rabbit's foot grass (*Polypogon monspeliensis*), dotted smartweed, black mustard (*Brassica nigra*), and the highly invasive stinkwort.

Palustrine Emergent Wetlands—whether seasonally or perennially flooded—are subject to federal and state regulation. Because the feature has an artificial topography and an entirely artificial hydrology, it is unclear whether this would be considered a jurisdictional wetland, a decision ultimately made by USACE.

Jurisdictional Waters

Pleasant Grove Creek, its tributary, and the floating aquatic beds, described below, are waters of the U.S. and waters of the state and are therefore subject to state and federal regulation. Any work within the ordinary high water mark of these streams (e.g., placement of piers, bridges, or bank stabilization), unnamed tributary streams, or adjacent wetlands could require permits from a variety of agencies, including the U.S. Army Corps of Engineers (USACE), National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries or NMFS), Central Valley Regional Water Quality Control Board (CVRWQCB), and California Department of Fish and Wildlife (CDFW).

Noxious Weeds

Noxious weeds include species designated as federal noxious weeds by the U.S. Department of Agriculture (USDA), species listed by the California Department of Food and Agriculture (CDFA), and other exotic pest plants designated by the California Invasive Plant Council. Roads, highways, railroad lines, utility corridors, and related construction projects are some of the principal dispersal pathways for noxious weeds. The introduction and spread of exotic pest plants adversely affect natural plant communities by displacing native plant species that provide shelter and forage for wildlife species.

Noxious weeds known to occur in the project vicinity that could invade the wetland-riparian habitats include giant reed (*Arundo donax*), salt cedar (*Tamarix* spp.), and scarlet wisteria (*Sesbania punicea*). Noxious weed species observed in the study area include a small patch of white top (*Lepidium latifolium*), which is centered on a spoil pile in the northeast portion of the biological APE, and yellow star-thistle (*Centaurea solstitialis*), which occurs sporadically throughout the annual grasslands in the biological APE but with no significant infestations. However, the nonnative stinkwort (*Dittrichia graveolens*) is abundant throughout the disturbed areas near the stream and wetlands; it is a new species of concern to CDFA and others because its distribution in California is spreading so rapidly and widely. It resembles a tumbleweed when dry.

General Wildlife

Freshwater emergent wetlands are among the most productive wildlife habitats in California and provide food, cover, and water for many birds, mammals, reptiles, amphibians, fishes, and invertebrates. In the biological APE, they occur along the edges of riverine and ponded/backwater areas and in association with scrub-shrub wetlands, which provide abundant vegetative, invertebrate, and amphibian prey for wood duck (*Aix sponsa*), great blue heron (*Ardea herodias*), green heron (*Butorides virescens*), and belted kingfisher (*Ceryle alcyon*), all of which were seen using the biological APE during site visits. Beaver are presumed present based on a beaver-dam-like construction on Pleasant Grove Creek 225 feet downstream of the bridge; based on the presence of willows and other vegetation growing out of the dam, it may not be an active dam. A muskrat (*Ondatra zibethicus*) carcass was found in the biological APE, and bullfrogs (*Lithobates catesbeianus*) were abundant in ponded areas.

Adjacent to wetland and ponded/backwater areas are ruderal, weedy upland and annual grassland, which provide cover and forage for mice and voles such as *Peromyscus maniculatus* and *Microtus californicus*, as well as for predators such as red-tailed hawk (*Buteo jamaicensis*) and northern harrier (*Circus cyaneus*), both of which were seen during site visits. Annual grassland is also habitat for the naturalized but nonnative ring-necked pheasant (*Phasianus colchicus*), which was heard in August, and for the black-tailed jackrabbit (*Lepus californicus*), which was seen in August.

Cover types in the biological APE provide excellent nesting and/or foraging opportunities for mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus polyglottus*), and the endemic yellow-billed magpie (*Pica nuttallii*). These birds were all seen using the study area during the field visits.

Other wildlife species expected to use the biological APE, but not seen during site visits, include valley garter snake (*Thamnophis sirtalis fitchi*), Sierra treefrog (*Pseudacris sierra*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and coyote (*Canis latrans*).

General Fish Resources

Pleasant Grove Creek and its tributaries provide a warmwater fishery. Water temperatures are too warm for salmonids (trout and salmon) in the summer months. The substrate is muddy with a few fragmented riffles; the riffles tend to be embedded 20 to 50 percent in the finer sediment areas. Pleasant Grove Creek can be characterized as a long, meandering lateral scour pool, from 55 to 75 feet wide, with a depth estimated to be from 3 to 7 feet at the center of the channel. Protective cover for fishes was provided by abundant aquatic vegetation and depth (A.A. Rich and Associates 2013).

Although there are limited data on the fish species that inhabit Pleasant Grove Creek, it supports an assemblage of warmwater fishes dominated by non-native species, such as bluegill (*Lepomis macrochirus*), western mosquitofish (*Gambusia affinis*), golden shiner (*Notemigonus crysoleucas*), and common carp (*Cyprinus carpio*). Native fish species include Sacramento perch (*Archoplites interruptus*), hitch (*Lavinia exilicauda*), and Sacramento sucker (*Catostomus occidentalis*).

Migration Corridors

Wildlife movement includes migration (usually one direction per season), inter-population movement (long-term genetic exchange), and small travel pathways (daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow between populations (EcoBridges Environmental Consulting 2014).

Linkages between habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. They facilitate movement between populations located in discrete areas and those located within larger areas. Even where patches of pristine habitat are fragmented, such as occurs with coastal scrub and many other California habitats, the movement between wildlife populations is facilitated through habitat linkages, i.e., migration corridors and movement corridors (EcoBridges Environmental Consulting 2014).

Special-Status Species

Special-status species is a collective term that refers to plants, animals, and fish that are legally protected under the Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), or other regulations, as well as species that are considered sufficiently rare by the scientific community to qualify for such listing. Special-status species and sensitive habitats are those plants and animals found on the CNDDB, CNPS, and USFWS species lists, or otherwise known to occur in the region, for which general geographic range and habitats overlap with the biological APE and that are: 1) listed, proposed for listing, or candidates for listing as threatened or endangered under state or federal endangered species acts, 2) California species of special concern, 3) California fully protected species, 4) found on CNPS lists 1B.1, 1B.2, and 2, and/or 5) have a state rank of S1, S2, or S3. Species and habitats that do not fall into at least one of these classifications were not included in the NES prepared by EcoBridges Environmental Consulting in 2014.

Special-Status Plants

Ten special-status plants were identified during the record searches as potentially occurring in the project region, but most of the species can be ruled out based on an absence of general or specific microhabitat requirements. For example, many of the special-status plant species known from the project vicinity are associated with vernal pools and swales. Although vernal pool plant species cannot be identified during an August survey, their presence can be ruled out on the basis that no vernal pools or swales are present in the biological APE. Vernal pools are located on the high terrace east of the project, between SR-65 and the confluence of Pleasant Grove Creek and an unnamed tributary, but any overland flow of seed or other propagules from the vernal pools during storm events would be intercepted by the stream and carried offsite via the stream flows before reaching the low-lying portions of the grasslands within the biological APE. An artificial vernal pool that supports Great Valley button-celery is located outside the biological APE in close proximity to the staging area (EcoBridges Environmental Consulting 2014).

Special-Status Wildlife

Thirteen (13) wildlife species and migratory birds were found to have the potential to occur within the biological APE. These species include vernal pool crustaceans, Pacific pond turtle, California red-legged frog, western spadefoot, giant garter snake, tricolored blackbird, burrowing owl, Swainson's hawk, white-tailed kite, California black rail, Townsend's big-eared bat, American badger, and migratory birds. All are considered to have low potential of occurrence within the project area with the exception of Pacific pond turtle, which has a high potential of occurrence in the project area (EcoBridges Environmental Consulting 2014).

Special-Status Fish

Pleasant Grove Creek supports an assemblage of warmwater fishes dominated by non-native species. Native species include Sacramento perch, hitch, and Sacramento sucker. There are no anadromous salmonids, or known populations of special-status fish species in Pleasant Grove Creek (A.A. Rich and Associates 2013).

Discussion

a., b. The proposed project would replace the functionally obsolete bridge, raise the bridge above the 50-year flood event water surface elevation, and would provide shoulders and a sidewalk on the east side of the bridge. Work would be within existing City right-of-way and within Pleasant Grove Creek. The proposed project consists of developed and disturbed areas and habitats associates with waters and wetlands (refer to items c and d for an analysis). Specific impacts are discussed below. Implementation of Mitigation Measures BIO-1 through BIO-10 would reduce impacts to a less-than-significant level.

Special-Status Plants and Habitats

The NES identified 11 special-status plant species that have the potential to occur within the proposed project area. However, the proposed project does not provide suitable habitat for Brandegee's clarkia and hispid bird's-beak; therefore, no impact would occur to these two species. The following species could be affected by the proposed project.

Sanford's Arrowhead. Sanford's arrowhead is an emersed aquatic perennial in the Water-Plantain family. It blooms late May to August in shallow, standing, fresh water and sluggish waterways in marshes, swamps, ponds, vernal pools and lakes, reservoirs, sloughs, ditches, canals, streams and rivers at elevations from 10 to 2,000 feet. It is not listed under the state or federal endangered species acts. The nearest known occurrences are Roseville Road at Whyte Avenue and, in the Freeport to Elk Grove area, Citrus Heights and Sacramento east to Sloughhouse and Rancho Murieta areas. Suitable habitat for Sanford's arrowhead is present in the biological APE and immediately downstream. Habitat quality and hydrology are good for this taxon, and survey timing was adequate to detect this species. Sanford's arrowhead was not identified within the biological APE during the early August comprehensive surveys. No direct impacts would occur as a result of this proposed project. Indirect effects for plant populations in

the zone of effect, downstream of the biological APE are less than significant with the incorporation of Mitigation Measure BIO-6.

California Balsamroot. California balsamroot, also known as big-scaled balsamroot, is a perennial in the Sunflower Family. It blooms March to June with yellow sunflower-like heads 2 to 4 inches wide on wand-like stems, 4 to 16 inches long. Its distribution is limited to the northern Inner Coast Ranges, Sacramento Valley, and Sierra Nevada foothills, on a variety of habitats including grasslands, meadows, rock outcrops to conifer stands, sometimes on serpentine soils. Elevations of known occurrences range from approximately 100 to 3,000 feet in elevation. California balsamroot is CNPS List 1B, meaning it is rare and endangered throughout its range; however, it is not listed under the state or federal endangered species acts (EcoBridges Environmental Consulting 2014). California Balsamroot had a known occurrence within the project area prior to 1957, but there are no known occurrences since. All other habitats in the biological APE are either wetlands, aquatic, or ornamental landscaping. Suitable habitat is found outside the biological APE on the terrace to the northeast but not within the biological APE. California balsamroot was not identified within the biological APE nor is it expected to occur due to the absence of general and microhabitat conditions to support. Therefore, impacts to California balsamroot are less than significant. No mitigation is required.

Vernal Pool Plants. Seven special-status vernal pool plant species are known from the nine-U.S. Geological Survey (USGS) quadrangle region surrounding the project: Boggs Lake hedge-hyssop, dwarf downingia, Red Bluff rush, Ahart's rush, legenere, Sacramento Orcutt grass, and pincushion navarretia. Two of these are state-endangered: Boggs Lake hedge-hyssop and Sacramento Orcutt grass. Sacramento Orcutt grass is also a federal endangered species. All are CNPS List 1B species. No special-status vernal pool plants were found in the single artificial pool immediately outside the biological APE (EcoBridges Environmental Consulting 2014).

Only one semi-persistent annual vernal pool plant was detectable—Great Valley button-celery—a wetland obligate plant species. The drier edges of the pool are heavily infested with the invasive exotic stinkwort. Although the habitat is marginal and degraded (artificial, somewhat weedy, and subject to water-quality issues and vehicle disturbance), there is at least a low potential that the depression could support any of the six special-status vernal pool plants known from the region, but direct effects would not occur because the feature is located outside the biological APE (EcoBridges Environmental Consulting 2014). Special-status vernal pool plants are discussed here because of the potential for indirect effects that would potentially occur during construction of the proposed project.

The artificial vernal pool offsite and near the staging area has at least marginally suitable habitat for special-status vernal pool plants. Soil disturbance along the upper banks and flats above the pool would render the disturbed habitat within the biological APE staging area vulnerable to invasion by noxious weeds, as would the accidental introduction of weeds on contaminated vehicles and equipment. Although the artificial pool is already infested with weeds around the drier perimeter, a new species could potentially be introduced through contaminated equipment and vehicles. It is expected that water quality in the pool is already somewhat affected by stormwater runoff from the pullout and vegetation maintenance (spraying) along the railroad (EcoBridges Environmental Consulting 2014). Impacts are potentially significant; however, with the implementation of Mitigation Measures BIO-1, BIO-8, and BIO-10, impacts to the artificial vernal pool are less than significant.

Special-Status Animal Species

The NES identified 24 special-status animal species that have the potential to occur within the proposed project area. The proposed project does not provide suitable habitat for ten special-status animal species: valley elderberry longhorn beetle, delta smelt, steelhead, sinter-run and spring-run Chinook salmon, grasshopper sparrow, western yellow-billed cuckoo, purple martin, bank swallows, and pallid bat. Ten have been eliminated from analysis because they are not present. Therefore, no impact would occur to these ten species. The following species could be affected by the proposed project.

Vernal Pool Crustacean. Vernal pool crustaceans are tiny invertebrates found in vernal pools; several of them are state or federally listed as threatened or endangered. Each species found in California has preferences for pool size, turbidity, water quality, and temperature, and each has a geographic range within which it most frequently occurs. Three federally listed vernal pool crustaceans are known to occur in Placer County: vernal pool fairy shrimp, conservancy fairy shrimp, and vernal pool tadpole shrimp.

A portion of the southeast biological APE falls within a CNDDB polygon for the same species (CDFW 2013a–occurrence number 139). Surveys in 1995, 1996, and 1997 detected vernal pool fairy shrimp in constructed vernal pools associated with the "Foothill Business Park mitigation site," which is presumably the Foothill Business Park Wetland Preserve and Compensation Areas. The record for this polygon describes occurrences "between HWY 65 and Industrial Avenue; 0.3 km WSW of HWY 65 X Pleasant Grove Creek." In this record, reference is made to constructed vernal pools within nonnative annual grassland at the "Foothill Business Park mitigation site, parcel 1," where 12 waterbodies were surveyed in 1995, 14 in 1996, and 29 in 1997. In 1996, more than 50 fairy vernal pool fairy shrimp were seen in one pool and in 1997 "10s" were seen in two pools. There is no additional information in the CNDDB for these sites. A sign in the northeast portion project area identifies the grassland east of the biological APE as a City of Roseville Wetland Preserve; it may be part of the Foothill Business Park Wetland Preserve and Compensation Areas. This area is a high terrace of apparently manmade vernal pools in a grassland matrix located approximately 400 feet east of the biological APE and extending east to SR-65.

Surveys were not conducted for vernal pool crustaceans and there are no natural or constructed vernal pools within the biological APE; however, a single artificial depression lies immediately outside the southwest portion of the biological APE. It was observed to support Great Valley button-celery, a vernal pool plant, which suggests a winter hydrology and hydroperiod that could potentially support vernal pool crustaceans. Another depression south of this artificial vernal pool also holds water in winter but appears to support only weedy plant species EcoBridges Environmental Consulting 2014).

Because this artificial vernal pool is outside of the biological APE, there would be no direct project-related effects. However, individuals and cysts could be killed or harmed by introduction of chemical contaminants, by increases in surface runoff or trash that affect water quality, and by introduction of noxious weeds from construction vehicles. Impacts are potentially significant; however, impacts to vernal pool crustaceans are less than significant with the implementation of Mitigation Measures BIO-1, BIO-8, and BIO-10.

Pacific Pond Turtle. The Pacific pond turtle occurs in perennial waters such as lakes, ponds, rivers, streams, irrigation ditches, and sloughs with aquatic vegetation, deep or muddy water for cover, and sunny openings. Pond turtles need basking sites for thermoregulation such as logs, vegetation mats, open banks, or rock outcrops, adjacent to deep water for escape. While adults are

found in a variety of habitats, hatchlings and juveniles require specific habitats for survival: shallow water with relatively dense submergent or short emergent vegetation in which to forage and hide from predators (EcoBridges Environmental Consulting 2014).

The nearest CNDDB records for Pacific pond turtle are is 7.3 miles northeast of the biological APE and nine miles southwest. The biological APE provides a high-quality aquatic habitat and therefore there is a potential for Pacific pond turtle, even though basking habitat may be limited in parts of the biological APE. Adjacent uplands are assumed to be suitable for nesting, and suitable habitat for hatchlings is available in parts of the biological APE. All parts of the biological APE support bullfrogs, which may reduce habitat suitability for nestlings.

Pond turtles could be adversely affected in the short term both directly and indirectly during clearing and grubbing of shoreline vegetation, construction of water diversions, construction of the new bridge, and demolition of the old bridge. Impacts could take the form of direct mortality, temporary displacement from preferred habitats, disrupted food supply, short-term loss of habitat, or degradation of water quality. Hatchlings and hatchling habitat could be lost if hatchlings are present and using shallow, ponded areas within or adjacent to the biological APE. Construction impacts are potentially significant; however, with the implementation of Mitigation Measure BIO-2, impacts are less than significant. Long-term impacts are less than significant because disturbed areas would be restored to pre-project conditions and there would be minimal loss of aquatic habitats.

California Red-Legged Frog. California red-legged frogs typically occupy and breed along the margins of permanent and near-permanent ponds, lakes, and streams where water is still or slow, shoreline and emergent vegetation are dense and extensive, and water depth is at least 2.1 feet near the shoreline. Within the biological APE, Pleasant Grove Creek and its associated tributary and backwaters, pools, ponds, and surrounding uplands provide the physical attributes of high-quality California red-legged frog breeding and nonbreeding habitat; however, this species is not expected to be present (EcoBridges Environmental Consulting 2014).

There are only eight historic records (museum specimens from 1911 to 1957) of California red-legged frogs from the Central Valley, defined as the lower reaches of the Sacramento and San Joaquin valleys below 492 feet. Reproductive populations probably never occurred historically in the Central Valley because extensive natural winter and spring flooding in the river lowlands precluded breeding activity, and water declines during the early summer precluded tadpole survival to metamorphosis in seasonal ponds. Breeding populations are not currently known to occur in the Central Valley (EcoBridges Environmental Consulting 2014).

In Placer County, several CNDDB records show this frog occurring in the vicinity of Michigan Bluff, but Michigan Bluff is approximately 35 miles east of the project site. Another CNDDB record shows this frog occurring near Folsom Lake, El Dorado County, approximately 13 miles east, but this is not a verifiable record and is not included in a 2013 California red-legged frog study. All other nearby records are for occurrences from 38 to 50 miles away in Yuba, Nevada, and El Dorado counties (EcoBridges Environmental Consulting 2014). Impacts to this species are less than significant. No mitigation is required.

Western Spadefoot. Western spadefoot is an almost completely terrestrial toad that enters water only to breed. The CNDDB identified six spadefoot records within the nine-quadrangle search area, the closest of which is 3.2 miles southwest of the biological APE. The best uplands for this amphibian occur west of the railroad grade and east of the wetlands associated with Pleasant Grove Creek and east of Industrial Avenue. Uplands within the biological APE are marginally suitable, being ruderal, lacking small-mammal burrows, and lying directly adjacent to the herbicided banks of the railroad grade.

A single artificial vernal pool and a small, ponded ditch adjacent to the staging area, and outside of the biological APE, could potentially support breeding spadefoots. However, the railroad grade is a potentially significant barrier to spadefoot movement from the west, and the permanent water and bullfrogs between Industrial Avenue and the eastern grassland vernal pool complex is considered a significant barrier to movement from the east. While occurrence cannot be ruled out, the pool and ditch are not anticipated to support spadefoot breeding because of these significant barriers to movement (EcoBridges Environmental Consulting 2014). Therefore, impacts to western spadefoot are less than significant. No mitigation is required.

Giant Garter Snake. The giant garter snake is strongly associated with aquatic habitats where it feeds on frogs, tadpoles, and small fish. Active in spring, summer, and fall, it occurs in wetlands, sloughs, irrigation drains, canals, low-gradient streams, and rice fields. The population nearest the Industrial Avenue Bridge Replacement Project is Population 4 in an area called American Basin, which includes portions of Butte, Yuba, Placer, and Sacramento counties. In Placer County, there are no confirmed sightings of giant garter snake east of the Pleasant Grove Creek Canal, at the eastern edge of Natomas Basin, which is more than 13 miles downstream of the project site. The nearest record in the nine USGS quadrangle CNDDB search area is for a giant garter snake found dead on Elkhorn Road, 13 miles southwest of the biological APE. Giant garter snakes are associated with alluvial clay soils in flood basins with flood-bottom-type habitats and that Pleasant Grove Creek at the project site is not a flood basin and giant garter snakes are not expected to occur there (EcoBridges Environmental Consulting 2014). Impacts to this species are less than significant. No mitigation is required.

Tricolored Blackbird. Tricolored blackbirds nest in colonies that range from several pairs to several thousand pairs depending on prey availability, the presence of predators, and the level of human disturbance. They typically nest near open water in dense cattail, bulrush, willow, blackberry, or other dense vegetation with open grassland or agricultural foraging habitat nearby. There are five nesting records in the nine USGS quadrangle CNDDB search-area, the nearest of which is a colony of thousands recorded in 2000 at a site 3.6 miles north of the proposed project. Tricolored blackbirds were not detected during the August and September site visits; however, suitable habitat occurs in the willows and emergent vegetation on both banks of Pleasant Grove Creek. Suitable foraging habitat occurs in the adjacent grasslands (EcoBridges Environmental Consulting 2014).

Nesting tricolored blackbirds are sensitive to disturbance and project construction near nesting colonies could disrupt breeding and foraging patterns, or cause nest abandonment, direct mortality of young, or premature fledging. Impacts to tricolored blackbirds are potentially significant. Implementation of Mitigation Measure BIO-3 would reduce these impacts to a less-than-significant level.

Additionally, there would be direct loss of potential nesting habitat through removal of willows and emergent vegetation. However, of the 0.802 acre of emergent and scrub-shrub wetland present in the biological APE, permanent impacts are expected to only 0.04 acre, which is five percent of the total and does not constitute a significant loss of nesting habitat. Impacts to nesting habitat are considered less than significant. No mitigation is required.

Burrowing Owl. Burrowing owls inhabit grasslands and other open, well-drained habitats with sparse or low-lying vegetation including idle agricultural fields, ruderal fields, and the edges of cultivated fields. There are 10 records for burrowing owl in the nine USGS quadrangle CNDDB search area, the nearest of which is 3.8 miles northwest of the biological APE. No burrowing owls were detected during any of the site visits. The only potentially suitable habitat in or near the biological APE is west of Industrial Avenue in the right-of-way between the road and the

railroad. No potential burrows were found in this area and burrowing owls are not expected to occur there. Therefore, impacts to burrowing owl are less than significant. No mitigation is required.

Swainson's Hawk. Swainson's hawks are breeding residents of California, especially the Central Valley, and most of them winter from Mexico to South America; a small population has been documented to winter in the Sacramento-San Joaquin Delta. Generally present in California from early March to late September, they nest in tall trees in riparian forest, oak woodland, roadside landscape corridors, urban parks, and isolated trees in agricultural areas. No Swainson's hawks were detected during August and September site visits; however, there are 26 Swainson's hawk records in the nine USGS quadrangle CNDDB search area, several of which occur within 10 miles of the biological APE, including one from 2012 that is approximately 8 miles from the proposed project. The nearest recorded Swainson's hawk nest is from 2009 along Pleasant Grove Creek, approximately 1.3 miles west of the project site.

Nesting habitat within the biological APE is only marginal for Swainson's hawk; of the few trees present, most are too small given the abundance of taller, larger trees within a few miles. A single tree of greater likelihood for nesting occurs approximately 300 feet east of Industrial Avenue: a large valley oak in the grassland south of Pleasant Grove Creek and east of the unnamed tributary. Because Swainson's hawk nesting in or near the biological APE cannot be ruled out, related impacts are considered potentially significant. Impacts are potentially significant; however, with the implementation of Mitigation Measures BIO-4 and BIO-5, impacts are reduced to a less-than-significant level.

Three upland habitat types are found in the biological APE: annual grassland; disturbed (comprising unvegetated, paved, structures, and roads); and ornamental landscaping. Of these, only annual grassland is considered potential Swainson's hawk foraging habitat. A total of 1.76 acres of annual grassland in the biological APE; however, the area of direct effect does not include any annual grassland. Project-related impacts to loss of Swainson's hawk foraging habitat is less than significant.

White-tailed Kite. The white-tailed kite is a yearlong resident of the Central Valley and the length of the California coast. In northern California, white-tailed kites typically nest from March through June in isolated trees, tree stands, and woodlands that are associated with foraging areas of open grasslands, meadows, farmlands, savannahs, and emergent wetlands. White-tailed kites were not detected during site visits; however, there are 16 white-tailed kite records in the nine USGS quadrangle CNDDB search area. The nearest record is from 1999 at a location 1.7 miles southwest of the project site. Nesting habitat within the biological APE is only marginal for white-tailed kite; of the few trees present, most are too small given the abundance of larger and more isolated trees nearby. A single tree of greater likelihood for nesting occurs approximately 300 feet east of Industrial Avenue: a large valley oak in the grassland south of Pleasant Grove Creek and east of the unnamed tributary. While white-tailed kite nesting in or near the biological APE cannot be ruled out, the likelihood is considered low. Proposed project construction could cause nest abandonment or forced fledging, which could result in direct mortality to young birds and loss of reproductive effort for the duration of project construction. This potentially significant impact can be reduced to less-than-significant levels with the implementation of Mitigation Measure BIO-6.

California Black Rail. The California black rail inhabits salt, brackish, and freshwater marshes from the coast to the foothills. It is found in patchy networks of densely vegetated wetlands that are typically small, gently sloped sites at elevations ranging from 100 to 2,600 feet above mean sea level (msl) and ranging in size from 0.17 to 34 acres. A formal black rail survey following

standard protocol was conducted at the project site in July and August 2013 by foothills black rail expert Jerry Tecklin (EcoBridges Environmental Consulting 2014).

Only a small amount of suitable habitat exists in the immediate bridge area but patches of suitable habitat were found within 660 feet of the biological APE. Surveys were conducted at 11 points of suitable habitat. No survey point was characterized as prime habitat because of excessive water depth and small size; however, "variability within the selected survey spots indicated a probability of appropriate Black Rail habitat and presence, given the proximity to other occupied rail locations in the vicinity" (EcoBridges Environmental Consulting 2014). No black rails were detected during these surveys in 2013.

Given the results of the black rail survey and the apparent lack of suitable black rail habitat at the site of bridge replacement, permanent loss of suitable habitat is not expected; however, if nesting black rails are present within 500 feet of proposed project construction activities, nests could be abandoned, chicks could be lost, and breeding could otherwise be disrupted. Therefore, impacts are potentially significant; however, with the implementation of Mitigation Measure BIO-6, impacts would be reduced to a less-than-significant level.

Townsend's Big-eared Bat. In California, Townsend's big-eared bat occurs from inland deserts to coastal forests, in oak woodlands of the inner Coast Ranges and Sierra Nevada foothills, and mixed forests at low to mid elevations. Bat expert Kim Fettke conducted a site visit and habitat assessment of the biological APE (EcoBridges Environmental Consulting 2014). Industrial Avenue Bridge over Pleasant Grove Creek does not provide suitable day-roosting habitat for any bat species. The surfaces of the bridge are smooth and contain no cracks or crevices in which bats could roost. Industrial Avenue Bridge could be used as a temporary night roost because Pleasant Grove Creek provides foraging habitat for bats. The adjacent railroad bridge to the west of the proposed project, and outside of the biological APE, could provide potential day-roosting habitat. The small willow trees and bushes around the bridge, and the street trees along Industrial Avenue, would not provide cavities or large bark crevices for tree-roosting bats, and would not be favored by foliage-roosting bats. There is one CNDDB record of six Townsend's big-eared bats roosting in an abandoned mine 8.75 miles east-northeast of the biological APE. While there is no roosting habitat for this bat in or near the biological APE, it could forage over Pleasant Grove Creek and surrounding wetlands (EcoBridges Environmental Consulting 2014).

The Industrial Avenue Bridge does not provide day-roosting bat habitat, and bats that could be using the bridge as a temporary night roost would not be disturbed by daytime construction activities. The adjacent railroad bridge could provide potential bat-roosting habitat; however, if bats are using the railroad bridge as roosting habitat, they would not be disturbed by project construction activities unless they occurred at night (EcoBridges Environmental Consulting 2014). Therefore, impacts to Townsend's big-eared bat are less than significant. No mitigation is required.

American Badger. American badgers are found in dry, open grassland, scrub, and forest habitats, usually in areas with sandy loam soils and where small mammal prey are abundant. The grasslands east and west of the biological APE appear to provide suitable foraging and denning habitat and, especially to the west, there are large areas of contiguous open habitats to support large home ranges. The likelihood of badger occurrence in the project vicinity is considered relatively high; however, the potential for occurrence within or adjacent to the biological APE is considered low. No badger dens were found within the upland habitats between Industrial Avenue and the railroad; this narrow strip of ruderal grassland is not anticipated to be used by denning badgers, but it could be intermittently used by hunting badgers. There are no CNDDB records for

American badger in the search area (EcoBridges Environmental Consulting 2014). Project related impacts to American badger are less than significant. No mitigation is required.

Special-Status Fish. No anadromous fish or other special-status fish species are known to occur within Pleasant Grove Creek at the project site. Native warm-water species (Sacramento perch, hitch, and Sacramento sucker) could occur within Pleasant Grove Creek at the project site. As such, fish could become trapped during dewatering activities, which would result in a potentially significant impact. Implementation of Mitigation Measure BIO-7, which requires a Fish Collection and Relocation Plan, would reduce impacts to any native fish species to a less-than-significant level.

c., d. The proposed project would replace the functionally obsolete bridge, raise the bridge above the 50-year flood event, and would provide shoulders and a sidewalk on the east side of the bridge. Work would be within existing City right-of-way and within Pleasant Grove Creek. A total of five types of wetlands or other waters were delineated within the biological APE and are considered waters of the U.S.: riverine-lower perennial (Pleasant Grove Creek and unnamed tributary); riverine aquatic beds (floating vascular plants); palustrine emergent wetland; palustrine scrub-shrub wetland; and artificial seasonal wetland. The riverine communities (riverine-lower perennial and aquaic beds) are also considered waters of the state. Of the total 1.251 acres of waters within the biological APE, 0.14 acre would be permanently impacted by the proposed project. Permanent impacts would result from the permanent loss of vegetation and habitat resulting from the increase in bridge size required to accommodate sidewalks and shoulders, features that are not currently provided. Table 3-7, *Impacts to Waters of the U.S.*, provides the total area of waters of the U.S., within the biological APE, and total area impacted as a result of the proposed project. In addition, to the waters of the U.S., an additional 0.043 acre of waters of the state (non-wetland floodplain) would be affected by the proposed project; refer to Figure 3-4.

Table 3-7. Impacts to Waters of the U.S.

Habitat Type	Area within Biological APE (acres)	Direct (Permanent) Impact (acres)	Percentage of Area Affected
Riverine-Lower Perennial Open Water and Aquatic Beds	0.444 acre	0.1 acre	22.52%
Palustrine Emergent Wetland	0.547 acre	0.012 acre	2.19%
Palustrine Shrub-Scrub Wetland	0.228 acre	0.028 acre	12.28%
Artificial Seasonal Wetland	0.032 acre	0.0 acre	0.0%
Total	1.251 acres	0.14 acre	11.19%

Source: EcoBridges Environmental Consulting, Natural Environment Study, February 2014

Loss of vegetation and habitat values would be regulated under Section 404 of the Federal Clean Water Act (CWA) and Section 1600 et. seq. of the California Fish and Game Code (FGC). Permanent impacts to wetlands and other waters are potentially significant. Implementation of Mitigation Measures BIO-1, and BIO-8 through BIO-10 would reduce permanent impacts to less-than-significant levels.

Immediately outside of the biological APE and north of the staging area, is an artificial vernal pool (refer to Figure 3-4). No direct impacts would occur as a result of the proposed project, as the artificial vernal pool is outside of the biological APE and outside of the direct impact areas. However, indirect impactsare potentially significant. With the implementation of best management practices (BMPs) and Mitigation Measures BIO-1, BIO-8, and BIO-10, these indirect impacts would be less than significant.

Temporary work access to the bridge for construction purposes would require additional vegetation grubbing but this is expected to be a temporary impact with guidelines for promoting stump-sprouting provided below. Impacts to the aquatic beds would be temporary as any activity in the stream would divert the floating (non-rooted) aquatic plants downstream, and new populations exist upstream to replace any diverted by construction. Soil disturbance along the banks and near the stream would render the habitat more vulnerable to invasion by noxious weeds, as would the accidental introduction of weeds on contaminated vehicles and equipment. Loss of vegetation and habitat values would be regulated under Section 404 of the Federal Clean Water Act (CWA) and Section 1600 et. seq. of the California Fish and Game Code (FGC). These impacts are potentially significant. Implementation of Mitigation Measures BIO-1, and BIO-8 through BIO-10 would reduce permanent impacts to less-than-significant levels.

e. The proposed project would replace the functionally obsolete Industrial Avenue Bridge over Pleasant Grove Creek in order to raise the bridge above the 50-year flood event water surface elevation, and would provide standard shoulders and sidewalks. Because Industrial Avenue has been in the same location since prior to 1910, the proposed project would not add features that could interfere with the movement of any native or migratory animals. No anadromous fish occur within the project area. However, construction activities could result in impacts to migratory nesting birds.

The Migratory Bird Treaty Act (MBTA), administered by the USFWS, implements various treaties and conventions between the U.S., Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. A migratory bird is any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. There are currently 1,007 migratory bird species covered under the MBTA. The MBTAct is interpreted to include disturbance through noise and human intrusion that could result in nest abandonment or premature fledging, so implementation typically takes the form of a preconstruction nesting-bird survey and protection of active nests with an appropriate no-disturbance buffer zone until chicks have fledged or the nest is no longer active, as determined by a qualified biologist.

Migratory birds are also protected under Section 3503 of California FGC, which states that it is unlawful to take, possess, or destroy the nests or eggs of any bird. This code is also interpreted to include disturbance through noise and human intrusion that could result in nest abandonment or forced fledging. The proposed project would result in some temporary and permanent loss of nesting habitat for migratory birds, and could result in nest abandonment or forced fledging through noise and disturbance (EcoBridges Environmental Consulting 2014). Impacts are potentially significant. Implementation of Mitigation Measure BIO-6 would reduce impacts to a less-than-significant level.

f. The proposed project area contains trees that are mainly associated with riparian habitat. However, there are scattered valley oak and California walnut. Consistent with the City's Tree Preservation Code, the City would require the contractor to retain a certified arborist to identify and evaluate any native oak trees 6 inches in diameter at breast height (dbh) and larger that occur within the disturbance area (as required under the City of Roseville's Section 19.66.050, Arborist Report Chapter 19.66, Article IV, Tree Preservation Code).

The City would require the contractor to comply with its Standard Policies and Procedure for Approved Work (19.66.060) and Oak Tree Planting and Replacement Program (19.66.070), as required by Chapter 19.66 Article IV, Tree Preservation Code. Native oak trees greater than 6 inches dbh along staging areas would be protected by orange barrier construction fencing

installed outside the tree driplines but could be indirectly disturbed during use of the staging areas or access for construction equipment and vehicles. Because native oak trees are protected under the City of Roseville's Tree Preservation Code and are considered an important natural resource in the City, this impact is potentially significant. Implementation of Mitigation Measures BIO-11 would reduce this impact to a less-than-significant level.

g. The proposed project would not conflict with the provisions of an adopted habitat conservation plan (HCP), natural community conservation plan (NCCP), or other approved local, regional, or state habitat conservation plan. The proposed project is located within the City's right-of-way and would replace a functionally obsolete bridge over Pleasant Grove Creek. The City of Roseville's Open Space Preserve Overarching Management Plan identifies two properties east of the Industrial Avenue Bridge over Pleasant Grove Creek as preserve areas. In addition, the Commerce Center 65 Preserve is privately owned and managed by the City and the Parkside Industrial Preserve is both owned and managed privately. Allowable use within these preserve areas is restricted by the Operations and Maintenance Plan; however, because all work would be within existing City right-of-way, no construction related activities would occur within the preserve areas. No other conflicts would occur, as the proposed project would not result in a change in land use designations or zoning classifications and all work would be completed within existing City right-of-way. The impact would be less than significant. No mitigation is required.

Mitigation Measures

BIO-1 **Avoid and Minimize Disturbance to Wetlands, Artificial Vernal Pool, and Vernal Pool Crustaceans.** In order to protect wetlands, the artificial vernal pool, and vernal pool crustaceans, the following shall be implemented during construction of the project:

- Final designs shall be approved by the City Public Works Engineer and shall include the location of orange fencing to be erected in the field during construction. The artificial vernal pool shall be avoided during all stages of project implementation. Adequate fencing shall be placed and maintained around any avoided (preserved) vernal pool habitat to prevent impacts from vehicles.
- Prior to any construction activities, all onsite construction personnel shall receive instruction regarding the presence of listed species and the importance of avoiding impacts to the species and their habitat.
- A U.S. Fish and Wildlife Service (USFWS)-approved biological monitor shall inspect any construction-related activities at the project site to ensure that avoidance and minimization measures are in place and buffer boundaries are not violated. The biologist will have the authority to stop all activities that may result in take or destruction of these habitats until appropriate corrective measures have been completed. The biologist will also be required to report immediately any unauthorized impacts to the USFWS and the California Department of Fish and Wildlife (CDFW).
- At the staging area, there shall be no alterations to existing topography, no placement of permanent structures, no dumping, burning, or burying of rubbish, garbage, or other wastes or fill materials, no killing, removal, alteration, or replacement of existing native vegetation, no placement of storm drains, no fire protection activities not required to protect existing equipment at the site, and no use of pesticides or other toxic chemicals at the staging area.

- All equipment shall be inspected for oil and fuel leaks every day prior to use. Equipment with oil or fuel leaks shall not be used within 100 feet of wetlands. Refueling areas for equipment will be located at upland sites outside of wetlands.
- Construction workers shall not enter areas that have been fenced or staked, unless they are installing fencing, in which case they will work at the edge of and avoid entering the sensitive area.
- Food items may attract wildlife onto the construction site, exposing them to construction-related hazards. The construction site will be maintained in a clean condition. All trash such as food scraps, cans, bottles, containers, wrappers, cigarette butts, and other discarded items will be placed in closed containers and properly disposed of.
- After construction is completed, a final cleanup will include removal of all stakes, temporary fencing, flagging, and other refuse generated by construction. No naturally occurring plant materials such as shrubs will be removed or disturbed in the cleanup process.
- Impacted areas shall be restored to pre-project conditions.

BIO-2 **Protect Pacific Pond Turtle.** The following measures are proposed for the protection of Pacific pond turtles:

- No construction shall take place within any aquatic or upland habitats until a qualified biologist has conducted a survey for pond turtles within one week of construction initiation, with special attention given to potential presence of hatchlings and young juveniles.
- If pond turtles are present or could be present in the biological area of potential effects (APE), no work within aquatic habitats will take place without the presence of a qualified biological monitor to ensure that turtles are not harmed during construction of water diversions and associated structures.
- At a minimum, weekly monitoring shall ensure that best management practices (BMPs), erosion and siltation controls, and diversion structures are in place functioning effectively, and that turbidity levels are within allowable limits.

BIO-3 **Avoid and Minimize Disturbance to Tricolored Blackbird.** The following avoidance and minimization measures are proposed for tricolored blackbird:

- All potential tricolored blackbird nesting habitat within the biological area of potential effects (APE) shall be removed prior to February 15 to ensure that nesting is not established within or near the biological APE prior to construction.
- Between April 1 and July 31, a preconstruction nesting-bird survey for all bird species shall be conducted within two weeks prior to initiation of construction. If nesting tricolored blackbirds are found within 500 feet of construction, a California Department of Fish and Wildlife (CDFW)-approved biologist shall assess the potential for construction-related disturbance and shall fence an appropriate buffer distance that ensures that nests are not abandoned and young are not forced to fledge early. The impact of construction on tricolor nesting shall be monitored no less than weekly.
- Wetland and upland habitats shall be restored to pre-existing conditions following project completion.

BIO-4 **Conduct Protocol Survey for Swainson's Hawk.** A protocol survey for Swainson's hawk shall be conducted prior to project initiation for active nests within 0.5 mile of the biological area of potential effects (APE). The survey shall follow the protocol outlined in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. If active nests are found, no intensive new disturbance shall take place within this buffer without a management authorization from the California Department of Fish and Wilidlife.

BIO-5 **Conduct Preconstruction Surveys for White-Tail Kite, Black Rail, Migratory Birds, and Sanford's Arrowhead.** Preconstruction surveys shall be conducted by a qualified biologist for the following species:

- White-tail kite: A preconstruction nesting survey for shall be conducted within two weeks of project initiation within 500 feet of any part of the biological area of potential effects (APE) for white-tailed kite nests. If an active nest is found within this buffer zone, construction activities would be prohibited within the buffer distance until the young have fledged.
- Black rail: A preconstruction survey by a qualified biologist shall be conducted in the month prior to project initiation at all potentially suitable black rail habitat within 500 feet of any part of the biological APE. If black rails are detected, construction within 500 feet of the detections shall be prohibited between April 1 and August 15. Preconstruction surveys shall be conducted using standard protocol for detecting black rails, as outlined in Appendix B of the Natural Environment Study (EcoBridges Environmental Consulting 2014), which includes the following activities:
    - Broadcast black rail calls at suspected densely vegetated shallow wetlands during two hours after sunrise.
    - Each playback survey shall consist of two minutes of silent listening upon arrival at the site, followed by two series of "kii-kii-kerr" calls lasting 30 seconds each and followed by 30 seconds of silent listening, with a final two-minute listening period.
    - Each playback survey shall consist of two minutes of silent listening upon arrival at the site, followed by two series of "grr" calls lasting 30 seconds each and followed by 30 seconds of silent listening, with a final two-minute listening period.
    - Three surveys shall be conducted on separated dates to yield a high probability of detection, using the above protocol.
- Migratory birds: For all construction-related activities that take place within nesting season, accepted as February 15 through August 31, a preconstruction nesting-bird survey for migratory birds shall be conducted by an agency-approved biologist no more than two weeks prior to project initiation within the biological APE and a 300-feet buffer. If active nests are found, a no-disturbance buffer zone of 100 to 300 feet shall be established around them according to an agency-approved biologist's assessment of the species' sensitivity to disturbance. Within this buffer zone, no construction shall take place until August 31 or the biologist determines that the nest is no longer active.
- Sanford's arrowhead: A preconstruction survey by a qualified botanist shall be conducted for the zone of effect, downstream of the biological area of potential effects (APE). This preconstruction survey shall be conducted prior to the start of construction activities and within the blooming season (May to August) for easy identification. If Sanford's arrowhead is identified within the zone of effect, dewatering activities would

be required to be the limited in duration, so that Sanford's arrowhead does not experience dewatering for a prolonged period of time. Activities within Pleasant Grove Creek shall comply with the Nation Wide Permit 14, Stream Bed Alternation Agreement, and National Pollutant Discharge Elimination System permits as well as regulatory agency standards, including, but not limited to, the California Department of Fish and Wildlife, U.S. Army Corps of Engineers, Central Valley Regional Water Quality Control Board, and the State Water Resources Control Board.

BIO-6 **Prepare a Fish Collection and Relocation Plan.** Prior to any construction activities, a Fish Collection and Relocation Plan shall be designed by a qualified biologist/ichthyologist. The Fish Collection and Relocation Plan shall comply with regulatory agency standards, including but not limited to the California Department of Fish and Wildlife, U.S. Army Corps of Engineers, Central Valley Regional Water Quality Control Board, and the State Water Resources Control Board. The plan shall also comply with the Nation Wide Permit 14, Stream Bed Alternation Agreement, and National Pollutant Discharge Elimination System permits.

BIO-7 **Avoid and Minimize Disturbance of Sensitivie Habitats, Including Pleasant Grove Creek and Wetlands.** The following measures shall be implemented for sensitive habitats, including wetlands and waters:

- Conduct a pre-construction educational tailboard session and provide all contractors and their workers with an informational brochure on sensitive resources in the project area to ensure compliance. Notify the appropriate regulatory agencies, including, but not limited to, the U.S. Army Corps of Engineers (USACE), National Marine Fisheries Service (NMFS), and California Department of Fish and Wildlife (CDFW), prior to performing any activities that could impact sensitive species and obtain all necessary permits.
- Install temporary construction fencing and signage along the boundary of this sensitive community within 50 feet of construction that is not permitted for removal. Install signage to warn workers that persons, vehicles, and equipment are prohibited within these designated sensitive habitat areas during construction.
- Install appropriate erosion and sediment controls (including, but not limited to, silt fencing, detention basins, coir rolls and blankets) along the stream banks within 50 feet of any work activity.
- Monitor turbidity levels in the stream. Remove all vehicles, equipment, and loose fill materials from the stream bank should rain be forecast within 48 hours, install additional erosion and sediment controls where needed, and cover spoil piles.
- Confine parking, storage, refueling, and maintenance in the designated staging and storage to an area a minimum of 30 feet from streams and flooded ditches.
- Require contractors to wash the tires and tracks of vehicles before entering and leaving the site, to prevent inadvertent introduction and spread of noxious weeds.
- Comply with the Federal Clean Water Act no-net-loss policy for open water habitat, per permit requirements with the CDFW and USACE. The project proponent shall work with the regulatory agencies to determine the appropriate compensation ratios and form. Compensation ratios are anticipated to be between 1:1 and 3:1 depending on the habitat value and integrity. Compensation forms anticipated for the project include, but are not limited to, creation, restoration, enhancement, or preservation.

BIO-8 **Avoid and Minimize Disturbance of Palustrine Emergent Wetlands.** The following shall be implemented for Palustrine Emergent Wetlands (hardstem bulrush-cattail marsh):

- Where temporary impacts are expected from vegetation grubbing, use grates where feasible to minimize compaction and leave stubs 7.5 to 15 cm (3 to 6 in.) high to promote re-sprouting of the vegetation.

BIO-9 **Avoid and Minimize Disturbance of Artificial Vernal Pool.** The following shall be implemented for artificial vernal pool:

- Install sediment controls (including, but not limited to, silt fencing and coir rolls) around the perimeter of the staging area where it occurs adjacent to the ditch or depression, whether the ditch and depression are wet or dry. Maintain extra erosion and sediment controls and spill containment kits onsite at all times.
- Establish the artificial pool and ditch, and a 30-foot buffer between the pool and any work activity, as an environmentally sensitive area.
- Install temporary construction fencing and signage along the boundary of the artificial vernal pool buffer. Install signage to warn workers that persons, vehicles, and equipment are prohibited within this area during construction.
- No refueling, maintenance of vehicles and equipment, or the discharge of any pollutants shall occur within 250 feet of the artificial vernal pool and ditch adjacent to the staging area.
- Conduct weekly biological monitoring of the pool and a buffer around the pool to ensure that all avoidance and minimization measures are implemented and maintained and these features are not affected by work activity. Provide a compliance report to appropriate agencies if monitoring indicates indirect impacts to off-site wetlands
- If any soil in the staging area near the pool is disturbed, the soils shall be stabilized immediately with erosion controls appropriate for the site.

BIO-10 **Implement the City of Roseville Tree Preservation Ordinance.** The City shall require that the contractor comply with requirements of the City's tree preservation ordinance, including avoidance, minimization, or compensation for the removal or disturbance of native oak trees greater than 6 inches diameter at breast height during construction. If native oak trees will be affected by the project, the contractor will be required to prepare a tree mitigation plan that identifies trees that qualify for protection and specifies mitigation for impacts. For any oak trees that would be removed, the City will mitigate the impact through either on-site planting or use of the City's in-lieu fee program.

Cultural Resources

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	☐	☒	☐
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Setting

Prehistory

The prehistory of central California is divisible into a broad framework of five temporal periods: Paleo-Indian; Lower Archaic; Middle Archaic; Upper Archaic; and Emergent.

Paleo-Indian

During the late Pleistocene and early Holocene (12,000 to 8,000 years before present (B.P.), humans first occupied the Central Valley and Coast Range regions of California. However, little is known about life during this early period because evidence of occupation is sparse, having been eroded away or deeply buried under accumulated gravels and silts. Consequently, the development of prehistoric chronology in central California largely has been focused upon the latter half of the Holocene (i.e., the last 5,000 years) for which the archaeological record is more abundantly documented (Tremaine & Associates, Inc. 2013).

Flaked stone tools associated with the early part of the Paleo-Indian Period (i.e., 12,000-10,000 B.P.) have been found in northern California. They include large Clovis-like fluted points that likely were hafted and used as spear points. In northern California, fluted points tend to be found as isolated artifacts. Elsewhere in western North America they occur in association with the remains of extinct animals such as mammoths and bison. This association has led archaeologists to suggest that these early peoples emphasized hunting large game mammals. Paleo-Indian peoples appear to have formed relatively small groups, were highly mobile, and settled around wetlands (e.g., lakes and rivers) where large game congregated (Tremaine & Associates, Inc. 2013).

Lower Archaic

Like the previous period, the Lower Archaic (8000-5000 B.P.) is poorly understood. Few sites have been found due to the fact that evidence from this time period is largely buried, given the depositional environment. A buried component was discovered in the Kellogg Creek drainage in 1997, at the toe of Mount Diablo, at a depth of about 13 feet below surface. It yielded a sparse but diverse assemblage, including traces of freshwater mussel, low to moderate densities of faunal material (primarily artiodactyls and small mammals), handstones, millingslabs, large cobble-core tools, and large projectile points and biface fragments (including large wide-stem variants of Napa obsidian). This assemblage reflects long-term, periodic use of the eastern flanks of the Central Valley. Macrofloral remains (acorn and cucumber) indicate only short-term seasonal use, probably associated with a highly mobile adaptation. In the Lower Sacramento Valley, a site from this period was encountered, in downtown Sacramento, ranging from 10 to 20 feet below the surface (Tremaine & Associates, Inc. 2013).

Middle Archaic

The Middle Archaic Period (5,000-2,200 B.P.) is identified as one that emphasized hunting, evidenced by the relative proportions of tools representative of hunting, fishing, and gathering activities. Artifacts characteristic of this period include distinctive shell ornaments and charmstones, large projectile points with concave bases and stemmed points, baked clay balls (used for cooking) and milling tools. Net weights, bonefish hooks, and bone spear tips provide evidence for fishing. Burials of this period, in the Sacramento – San Joaquin Delta Region, tend to be extended, oriented towards the west, and often contain grave goods such as baked clay balls, charmstones, shell beads, and exotic minerals (Tremaine & Associates, Inc. 2013).

Upper Archaic

Sites associated with the Upper Archaic Period (2,200-1,000 B.P.) contain substantial midden deposits with shell, mammal and fish bone, charcoal, milling tools, and other artifacts. The number of mortars and pestles increases during this time, suggesting a greater reliance on acorn and nuts. A greater density of obsidian artifacts and shell beads are present in the site assemblages of this time period and is thought to indicate a greater complexity of exchange networks and social stratification. Burials are more often flexed, as opposed to extended, with varied orientations and notably fewer grave offerings, generally involving limited numbers of utilitarian items or ornamental objects (Tremaine & Associates, Inc. 2013).

Emergent

The Emergent Period dates between 1,000 B.P. and the arrival of the Spanish in central California (i.e., 1770s). This period involves a dramatic change in general economy, characterized by large village sites situated on high ground, increased evidence of acorn and nut processing, introduction and use of the bow and arrow (indicated by small projectile points), and use of clamshell disc beads as the primary medium of exchange. During the latter part of the period (i.e., within the last 500 years), cremat ion became a common mortuary practice; grave goods were often burned as well. Sites from the latter portion of this period sometimes include items of Euroamerican manufacture, such as glass trade beads or worked bottle glass (Tremaine & Associates, Inc. 2013).

Ethnography

The project site is located in the territory of the Nisenan, or Southern Maidu. The area Nisenan called home was from the west bank of the Sacramento River to about the 3,500 foot elevation in the Sierra Nevada, north to about the Middle Fork Feather River, and south to about the Cosumnes River (Tremaine & Associates 2013).

The Nisenan occupied permanent settlements, usually located on low rises along major watercourses. Village size ranged from 3 houses to 40 or 50 houses. Houses were domed structures covered with earth and tule or grass and measured 10 to 15 feet in diameter. Brush shelters were used in summer and at temporary camps during food-gathering rounds. Larger villages often had semi-subterranean dance houses, which were covered in earth and tule or brush, had central smoke hole at the tope, and an entrance that faced east (Tremaine & Associates 2013).

The Nisenan had no extensive contact with Euroamericans until between 1828 and 1836, when intensive fur trapping by the Hudson's Bay Company occurred in the region. In 1833, an epidemic (possibly malaria) killed from 50 to 75 percent of the entire Maidu population. The establishment of Sutter's Fort in Nisenan territory in 1839 became the focal point of foreign incursions into their homeland after the 1848 gold discovery. The population reduction resulting from the 1833 epidemic left Nisenan unable to resist the overwhelming flood of miners and settlers. Many of the few survivors became wage laborers in mines and on ranches; their language and culture greatly diminished. Descendants of the Nisenan remain in the area, however, and continue to carry on traditional practices. Many individuals and groups are active in the preservation of their culture and the places we refer to as archaeological sites (Tremaine & Associates 2013).

History

The Spanish began establishing the Franciscan missions and military presidios as vehicles for taking complete control of Alta California in 1769. The closest missions, in present-day San Francisco and Sonoma, were established in 1776 and 1823 respectively. In 1839, John A. Sutter founded a settlement at present-day Sacramento on land granted to him by the Mexican government as a part of their effort to stabilize the inland frontier. Known as New Helvetia, the settlement was located 4-miles east of the Sacramento River (Tremaine & Associates 2013).

Several other ranchos were established in surrounding Yuba, Sutter and Sacramento counties, but none within Placer County itself. Frontier life was soon to change in 1848, with the discovery of gold and Mexico's ceding of California to the United States under the *Treaty of Guadalupe Hidalgo*, resulting in a massive influx of people from around the world, changing the demographics, the social order, and politics of the region overnight (Tremaine & Associates 2013).

Gold was discovered in Auburn Ravine in May of 1848, and the region soon became inundated with miners. In 1850 Auburn became the county seat of Sutter County, retaining this honor when Placer County was formed from a portion of Sutter County in 1851. Although the region was heavily mined, the specific project area was not a likely place of associated activities because it does not contain auriferous gravels or gold-bearing quartz. Instead, the area would have been the location for the burgeoning wheat-growing industry. One of these early wheat farmers was J. P. Whitney, who owned over 20,000 acres in the area of Roseville, Rocklin, and Lincoln (Tremaine & Associates 2013).

Study Methods

Efforts to locate cultural resources within the study area consisted of record searches, literature reviews, a pedestrian survey of the project site, and coordination with the Native American Heritage Commission, Native American tribal representatives, the Placer County Historical Society, and the Roseville Historical Society. Tremaine & Associates requested and archaeological site records search through the Naorth Central Information Center, Sacramento State University on August 2, 2013. Archival sources consulted included maps of previous cultural resources studies and known cultural resource locations, a review of the National Register of Historic Places, the California Register of Historic Properties, the *National Register of Historic Places* (National Register)*, California Register of Historical Resources* (California Register)*, California Inventory of Historic Resources*, *California Historical Landmarks*, and *California Points of Historical Interest.*

Tremaine & Associates, Inc. conducted an intensive pedestrian survey on August 30, 2013. The survey accomplished 100 percent coverage of the project area of potential effects (APE). The survey was accomplished using linear transects located parallel to Industrial Avenue. Transects were spaced no further than 20 feet apart. Most of the native soil in the project area is obscured by imported gravel, asphalt pavement, or concrete sidewalks. The central part of the APE, near the existing bridge, is marshy and covered with tall grass and tule. The creek here is meandering and the banks are not steep but rather are shallow incisions flanked by marshy grasses.

Record Search Results

The records search indicated that three previous cultural resources surveys had been conducted within the APE. One historic refuse scatter (CA-PLA-1874H) was recorded within a 0.5-mile radius of the project APE. The Industrial Avenue Bridge was constructed in 1950; however, it is listed as not eligible for the National Register on the Caltrans Structure Maintenance and Investigation Historical Significance – Local Agency Bridges List. Although unrecorded, the Central Pacific/Southern Pacific Railroad line is located immediately west of the project site, but outside the APE.

Ten prehistoric cultural resources have been identified within a 0.5-mile radius of the APE and consist of an isolated handstone (P-31-0113); an isolated flake stone (P-31-3206); six lithic and/or groundstone scatters (P-31-0001, CA-PLA-145, -146, -1476, -424, and -426); and one site with a midden and possible house pit (CA-PLA-148). No prehistoric materials were discovered during the pedestrian survey (Tremaine & Associates 2013).

Discussion

a.–c. No prehistoric materials were discovered during the pedestrian survey. The APE has been disturbed by adjacent construction of the railroad, construction of Industrial Avenue, and construction of the relatively new industrial and commercial complexes and sidewalks. These prior ground disturbances should have unearthed and broadcast at least some evidence of prior human use, if near-surface buried deposits were present. No evidence was found during the proposed project's survey, or the previous survey conducted within the APE.

As stated above, the Industrial Avenue Bridge was constructed in 1950. It is listed as not eligible for the National Register on the Caltrans Structure Maintenance and Investigation Historical

Significance – Local Agency Bridges List. Therefore, the existing bridge is not considered a historic resource and replacing the bridge would result in a less than significant impact on cultural resources.

The proposed project would not cause a substantial adverse change in the significance of a historical or archaeological resource pursuant to State CEQA Guidelines Section 15604.5, nor would it directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. No unique historical, archaeological or paleontological/geologic resources were identified in the project APE. Construction would occur in disturbed and imported soil where work has occurred in the past. However, there is potential for buried archaeological or paleontological resources to be unearthed inadvertently during project construction, which are potentially significant impacts. Implementation of Mitigation Measure CULT-1 would reduce this impact to a less-than-significant level.

d. No known human remains are located within the project APE. However, there is potential for construction activities to result in the inadvertent discovery and disturbance of human remains, which are potentially significant impacts. Mitigation Measure CULT-2 would reduce this impact to a less-than-significant level.

Mitigation Measures

CULT-1 **Minimize Disturbance to Unknown Cultural Materials.** If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be diverted until a qualified archaeologist can assess the nature and significance of the find. At this time, the person who discovered the remains will contact the City of Roseville Environmental Coordinator with the City Manager's Office so that they may coordinate on an appropriate plan of action. If the find is determined by archaeologists to require further treatment, the area of discovery will be protected from disturbance while qualified archaeologists and appropriate officials, in consultation with the State Historic Preservation Officer (SHPO), determine an appropriate treatment plan. An additional archaeological survey will be required if the proposed project limits are extended beyond the present Area of Potential Effects (APE).

CULT-2 **Minimize Disturbance to Unknown Human Remains.** If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner will notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). At this time, the person who discovered the remains will contact the City of Roseville so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

- The Placer County Coroner (530/265-1220) has been informed and has determined that no investigation of the cause of death is required. If the remains are of Native American origin (916/653-4038), one of the following occurs:

- The descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98.
- NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.

Geology and Soils

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located in a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1997), creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Setting

The City of Roseville is located on the eastern edge of the Sacramento Valley floor, a depression in which sedimentary deposits have accumulated for more than 100 million years. Marine sediments were deposited by a receding ocean, and these deposits are overlain by river deposits that originated in the Sierra Nevada, Klamath Mountains, Cascade Range, and Coast Range.

As discussed in the City General Plan, numerous faults have been identified within 62 miles of the Sacramento area; however, there are no known active faults located within Placer County. Three inactive faults lie within the immediate Roseville vicinity: 1) the Volcano Hill Fault, extending northwesterly for

approximately one mile starting just east of the City limits; 2) the Linda Creek Fault (the existence of which is disputed due to, lack of recorded activity) extends along a portion of Linda Creek through Roseville and a portion of Sacramento County; and, 3) an unnamed fault alignment extending east to west between Folsom Lake and the City of Rocklin, portions of which are concealed, but possibly connected to the Bear Mountain Fault near Folsom Lake. According to the California Department of Transportation (Caltrans) ARS online fault mapping model, the Foothill Fault System – north central reach section (Deadman Fault) is located east of the proposed project, in Auburn, and has the potential to produce an earthquake with a magnitude of 6.2 on the Richter scale. The Dunnigan Hills Fault is located west of the proposed project, northwest of the City of Woodland, and has the potential to produce an earthquake with a magnitude of 6.4 on the Richter scale.

No Alquist-Priolo faults are located in Roseville or Placer County (California Department of Conservation 2012). One distinct geologic unit exists in the project vicinity: Quaternary Turlock Lake Formation (California Department of Conservation 1981).

The proposed project area consists of continental deposits from the Cenozoic. Specifically, the project area is underlain by the Kilaga (soil series 162 – Kilaga Loam), Cometa (soil series 141 – Cometa-Fiddyment complex, 1 to 5 percent slopes), and Fiddyment (soil series 147 – Fiddyment-Kaseberg loams, 2 to 9 percent slopes) soil components. These soils are Class D soils that are all well drained (RBF 2013a).

- The Kilaga soil includes very slow infiltration rates. Kilaga Class D soils are clayey, have a high water table, or are shallow to an impervious layer (RBF 2013a).

- The Cometa soil is a Class D sandy loam, which includes very slow infiltration rates. Cometa Class D soils are clayey, have a high water table, or are shallow to an impervious layer (RBF 2013a).

- The Fiddyment soil is a Class D loam, which includes very slow infiltatration rates. Fiddyment soils are clayey, have a high water table, or are shallow to an impervious layer (RBF 2013a).

Roseville's geographic location, soil conditions, and surface terrain combine to minimize the risk of major damage from landslides, subsidence (gradual shrinking of the Earth's surface caused by underground resource extraction), or other geologic hazards resulting from seismic activity and related natural forces. Soils in the Roseville area are not considered to have high liquefaction potential. Roseville and the surrounding Sacramento region are not identified as areas prone to landslide hazards.

Discussion

a. No active faults are known to exist within the project area. The project site is not expected to experience faulting, strong ground shaking, seismically related ground failure, or liquefaction. Further, as part of the proposed project approvals, the City will review the site-specific geotechnical study prepared for the proposed project and design and construction documents to ensure compliance with applicable California Building Code (CBC) regulations for seismic safety as well as the City of Roseville Design and Construction Standards. Impacts are less than significant. No mitigation is required.

Landslides typically occur where soils on steep slopes become saturated, or where natural or human-made conditions have taken away supporting structures and vegetation. The project site is considered to have low landslide potential because the area is relatively flat, with topography ranging from approximately 105 feet above mean sea level (msl) to 120 feet above msl, with the higher elevations to the north and south and sloping toward Pleasant Grove Creek. Even with relatively flat areas, proposed project construction would comply with the most current City of Roseville's Design and Construction Standards. In addition, the international Building Code (IBC) also outlines site development standards for the protection of slopes. The proposed project would minimize the potential of landslides by implementing state and local regulations for grading and slope stabilization. Therefore, the impact is less than significant. No mitigation is required.

b. As part of the City's Mitigating Ordinances, Guidelines, and Standards (described in Chapter 2), the proposed project would be constructed in a manner that minimizes soil erosion or loss of topsoil. There are no roadway or intersection improvements that would require extensive excavations or hillside cut and fills. To minimize erosion during construction, the City would require the project contractor to implement a storm water pollution prevention plan (SWPPP) to comply with the National Pollutant Discharge Elimination System (NPDES) general permit administered by the State Water Resources Control Board. The SWPPP identifies structural and nonstructural best management practices (BMPs) to control erosion. The SWPPP includes spill prevention and control plan to ensure transport, storage, and handling of hazardous materials required for construction is conducted in a manner consistent with relevant regulations and guidelines. In addition, the proposed project would comply with the City's Design and Construction Standards, which prescribe erosion/sediment control and grading requirements addressing erosion. After construction, the project site would be returned to existing conditions with mostly impervious surfaces, which would not be susceptible to erosion. Impacts are less than significant and no mitigation is required.

c., d. The proposed project is not located in a sensitive geologic area, and the City of Roseville area does not typically experience subsidence. However, foundations and roadways may be damaged depending upon soil characteristics such as shrink-swell potential, permeability, and low strength; foundations and roadways could fail, especially if located on soils of differing properties. The proposed project would comply with the City's Mitigating Ordinances, Guidelines, and Standards to reduce impacts related to soil, including on- or off-site landslides, lateral spreading, subsidence, liquefaction, collapse, or expansive soils. In addition, the City would ensure the design specifications in the site-specific geotechnical report prepared for the project are incorporated into the project, in accordance with City of Roseville Design and Construction Standards. Therefore, the impacts are less than significant. No mitigation is required.

e. No wastewater systems or septic tanks are proposed as part of the project. Therefore, no impact on soils related to the use of septic tanks would occur. No mitigation is required.

Hazards and Hazardous Materials

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project site?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing in the project site?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Setting

A Phase I Initial Site Assessment (ISA) was prepared in September 2013 by RBF Consulting to determine whether hazardous materials or contamination are present in the project vicinity. The ISA provided a comprehensive review of data sources, including environmental records, historical topographic maps, and aerial photographs of the project area, as well as a reconnaissance-level field survey.

The City of Roseville Fire Department is the Certified Unified Program Agency (CUPA) for Roseville and is available to respond to hazardous materials complaints or emergencies and review construction plans involving hazardous materials.

Asbestos Containing Material

Asbestos is a strong, incombustible, and corrosion resistant material, which was used in many commercial products prior to the 1940s through the early 1970s. If inhaled, asbestos fibers can result in serious health problems. Asbestos containing materials (ACMs) are building materials containing more than one percent asbestos. ACMs are commonly known to have been used in building materials for bridge structures built between 1940 and the early 1970s.

Lead Based Paint

Until 1978, when the U.S. Consumer Product Safety Commission phased out the sale and distribution of residential paint containing lead, many homes were treated with paint containing some amount of lead. It is estimated that over 80 percent of all housing built prior to 1978 contains some lead based paint. Lead based paint was commonly known to be used in building materials for bridge structures. In addition, lead based paints were commonly used in traffic striping materials before the discontinued use of lead chromate pigment in traffic/marking materials and not-melt thermoplastic stripe materials in 1996 and 2004, respectively.

Aerially Deposited Lead

Until the mid-1980s, gasoline and other fuels contained lead. As each car or truck traveled highways and roads, tiny particles of lead were released in the exhaust and settled on the soils next to the road. Industrial Avenue has been used as a roadway since before 1910 and was utilized as a highway from the early 1940s to the late 1980s.

Railroad Use

Active and inactive railroad beds frequently have concentrations of petroleum products and lead elevated above natural background conditions. Petroleum product concentrations and lead concentrations are derived from drippings from rail vehicles and flaked paint, respectively. Wooden railroad ties commonly contained preservatives (i.e., creosote), some of which may contain hazardous constituents. Track switch locations often have elevated levels of petroleum hydrocarbons. Inorganic and organic herbicides, along with diesel fuel were often used for vegetation control. A review of historic U.S. Geological Survey (USGS) topographical maps, shows that the railroad has been located to the west of Industrial Avenue since the 1893 topographical map (RBF 2013a)

Kinder Morgan Pipeline

A Kinder Morgan pipeline is present adjacent to, but outside, the project area. Signage marking the petroleum pipeline is approximately 20 feet to the west of the project site and parallels Industrial Avenue.

Discussion

a. The proposed project would replace the existing functionally obsolete bridge over Pleasant Grove Creek. Thus, the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Construction activities would involve the use of some hazardous materials, such as diesel fuel, hydraulic oil, grease, solvents, adhesives, paints, and other petroleum based products, although these materials are commonly used during construction activities and would not be disposed of on the project site. Any hazardous waste or debris that is generated during construction of the proposed project would be collected and transported away from the site, and disposed of at an approved off-site landfill or other such facility. In addition, sanitary waste generated during construction would be managed through the use of portable toilets, which would be located at reasonably accessible on-site locations. The contractor would be required to use standard construction controls and safety procedures, which would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and Federal law. Impacts would be less than significant. No mitigation is required.

b., d. During proposed project construction, there is a possibility of accidental release of hazardous substances. Industrial Avenue has been used as a roadway since before 1910, and was used as a highway from the early 1940s to the late 1980s. This presents the possibility of aerially deposited lead. In addition, the bridge structure was built in 1950, thus there is the potential that the bridge contains asbestos containing materials. Finally, both the bridge paint as well as the thermoplastic roadway striping has the potential to contain lead based paint. Impacts are potentially significant. Implementation of Mitigation Measures HAZ-1 through HAZ-3 would reduce the level of risk associated with an accidental release of hazardous substances to less than significant.

The contractor would be required to use standard construction controls and safety procedures, which would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, state, and federal law. During the construction of the proposed project, there is the potential that unknown evidence of petroleum products or suspect materials could be encountered. Impacts are considered potentially significant. Mitigation Measure HAZ-1 would be completed to implement required Phase II testing for aerially deposited lead (ADL) and ACM. Impacts are potentially significant; however, with implementation of Mitigation Measures HAZ-1 through HAZ-3, impacts are reduced to a less-than-significant level.

As part of the proposed project, the City would implement the following plans and special provisions to ensure the project would not create a significant hazard to the public or environment:

- Compliance with the City's Multi-Hazard Mitigation Plan (approved by the Federal Emergency Management Agency) which requires contractors to transport and store materials in appropriate and approved containers along designated truck routes, maintain required clearances, and handle materials using fire department–approved protocols, as illustrated in Roseville Fire Code Ordinance 4594.

- Implementation of a spill prevention and control plan to minimize the exposure of people and the environment to potentially hazardous materials. The SWPPP will include spill prevention and control plan to ensure transport, storage, and handling of hazardous materials required for construction is conducted in a manner consistent with relevant regulations and guidelines, including those recommended and enforced by the CUPA.

- City and Caltrans standard hazard materials special provision (7-1.01L—Removal of Asbestos and Hazardous Substances) will be implemented which describes the process for the contractor to follow if a hazardous substance were encountered during construction.

Implementation and compliance with the plans, standards, and special provisions described above, in combination with Mitigation Measures HAZ-1 through HAZ-3 would reduce impacts to a less-than-significant level.

c. The project site is not located within 0.25 mile of a school and would not emit or handle hazardous substances. The nearest schools to the project site are: Vencil Brown School (approximately 1.5 miles southeast), Buljan Intermediate School (approximately 1.62 miles south), and Diamond Creek School (approximately 1.45 miles west) in the City of Roseville; and Ruhkala Elementary School (approximately 0.8 miles east) and William Jessup University (approximately one mile northeast) in the City of Rocklin. Given the distance (greater than 0.25 mile) of these schools from the project site. No impacts would occur as a result of the proposed project. No mitigation is required.

e., f. The project site is not located within an airport land use plan area, within two miles of an airport, or within the vicinity of a private airstrip. The nearest air facility is Pruett air facility, more than 5.5 miles southwest of the site, outside the project's area of disturbance. Therefore, there would be no impact as a result of the proposed project. No mitigation is required.

g. During construction, emergency access to and in the vicinity of the project site could potentially be affected by lane closures and construction-related traffic. In accordance with Roseville Municipal Code, the City requires any traffic lane closures to be approved by the City Engineering Department and notification provided to the City Police and Fire Departments 48 hours in advance of any road closures. As noted in Chapter 2, the City would ensure its contractor prepares a traffic management plan during the final stage of project design to ensure local traffic is accommodated during construction and access to businesses and residences is maintained. Therefore, the impact is less than significant. No mitigation is required.

h. According to the California Department of Forestry and Fire Protection (CalFire) Placer County Natural Hazard Disclosure (Fire) map, the proposed project site is not located in a fire hazard region (CalFire 2008, 2007). There is no impact associated with wildland fires. No mitigation is required.

Mitigation Measures

HAZ-1 **Prepare a Phase II Analysis and Follow Specified Handling Provisions.** A Phase II/Site Characterization Specialist shall conduct sampling along the project site in order to determine whether or not contamination exists in association with aerially deposited lead from Industrial Avenue. Results of the sampling will indicate the level of remediation efforts that may be required, if necessary. Any special handling, treatment, or disposal provisions associated with aerially deposited lead may be included in the construction document. If soluble levels are above 5 milligrams per liter (mg/L), then soils are considered hazardous waste and shall be handled according to CCR Title 22, the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substance Control (DTSC) variance for lead-contaminated soils.

Per the Caltrans aerially deposited lead soil management guidelines, soil from the 0.5-foot depth is classified as Type Y-1. If excavation soil from the 0.5-foot depth is reused at the site, it shall be placed a minimum of five feet above the maximum water table elevation and covered with at least one foot of non-hazardous material. It there is surplus material, then the soil is classified as Type A-2 and shall be disposed of at a regulated Class I landfill. Soils from the remaining depth layers (1.5, 3, and 4 feet) are considered non-hazardous (Type X) and can be reused at the site without and restrictions.

HAZ-2 **Minimize Disturbance to Unknown Petroleum Contamination.** If during grading or soil excavation, evidence of petroleum products is discovered and appears to continue below the ground surface, construction activities shall stop immediately and sampling shall be performed to characterize the extent of contamination. If applicable, remediation shall include removal of soil and proper disposal at an approved facility.

HAZ-3 **Minimize Disturbance to Unknown Suspect Materials and Wastes.** If suspect materials or wastes of unknown origin are discovered during construction on the project site, which is thought to include hazardous waste materials the following shall occur:

- All work shall immediately stop in the vicinity of the suspected contaminant;
- Project engineer of the implementing agency shall be notified;
- Area(s) shall be secured as directed by the Project Engineer;
- Notification shall be made to the appropriated agency's Hazardous Waste/Materials Coordinator.

Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on or off site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	☐	☐	☒	☐
e) Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted water?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Setting

The City of Roseville is located within the Sacramento Hydrologic Basin, which encompasses approximately 26,500 square miles and is bounded by the Sierra Nevada to the east, northern Coast Ranges to the west, Cascade Range to the northeast, Trinity Mountains to the northwest, and Sacramento River–San Joaquin River Delta and central Sierra Nevada region to the south. The Sacramento River is the principal river in this basin. Its main tributaries are the Pit, Feather, Yuba, Bear, and American Rivers.

Pleasant Grove Creek

The proposed project is located within the Pleasant Grove Creek watershed. Pleasant Grove Creek is a low-gradient, low-velocity, and highly sinuous perennial stream. It drains to Natomas Cross Canal via the Pleasant Grove Canal, which conveys drainage from both Placer and Sutter counties and enters the Sacramento River south of its confluence with the Feather River, approximately 14 miles west of Roseville.

There are no long-term streamflow measurements for Pleasant Grove Creek. The Industrial Avenue Bridge Replacement Project Hydrology and Hydraulic Design report (RBF 2013c) and the Water Quality Technical Memorandum (Kimley-Horn 2014) provide information regarding the existing conditions of Pleasant Grove Creek. The existing peak flow for Pleasant Grove Creek at Industrial Avenue Bridge is 2,421 cubic feet per second (cfs). However, a presumed beaver dam located approximately 225 feet west of the project site appears to be contributing partial impoundment of the creek flows upstream of the dam into the lower portions of the roadside ditches; refer to the Biological Resources Section for a discussion of the biological resources associated with Pleasant Grove Creek.

Climate

The climate of the watershed is Mediterranean, with hot, dry summers and cooler, wet winters. The average annual precipitation is approximately 24 inches. Most of the precipitation occurs between November and April in the form of rain, with variable amounts of snow in the higher elevations. It is extremely rare to have snow at the location of the proposed project. The climatological cycle of the region results in high surfacewater flows in the spring and early summer, followed by low flows during the dry season.

Water Quality

Pleasant Grove Creek is a 303(d) waterway listed for dissolved oxygen, pyrethroids and sediment toxicity. Total Maximum Daily Loads (TMDLs) have not been established for these pollutants. TMDL completion is expected to occur in 2021. Low dissolved oxygen can be attributed to low flows, which typically occur in the summer months. Pyrethroid is a main residential pesticide and can be attributed to urban stormwater runoff.

Flooding

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM Panel Number 06061C0413F, Industrial Avenue Bridge is located within Zone AE, special flood hazard areas inundated by 100-year flood with base flood elevations determined. The proposed project is also located within the floodway. The Industrial Avenue Bridge is within the 50-year storm event water surface elevations.

Discussion

a., f. The proposed project would replace the existing bridge with a bridge that would provide shoulders and sidewalk, and would be raised above the 50-year storm event water surface elevation. While the proposed project would slightly increase the overall amount of impervious surface in the project area, the increase is less than 0.1 acre. Thus, any runoff from the proposed project would be considered similar to existing conditions (Kimley-Horn 2014). The proposed project would not substantially increase the potential for small amounts of lubricants, sloughing of tire and brake material, and other contaminants associated with driving to enter the stormwater drainage system. Because the proposed project would replace the bridge, the land uses would be the same and vehicle use and traffic numbers would not change. Therefore, long-term impacts to water quality from the proposed project would be the same as the existing conditions.

Construction activities of the proposed project would disturb relatively small areas of soil, but some activities would occur within Pleasant Grove Creek, such as removing the existing bridge piers and replacing with new piers to accommodate the new bridge. A potential staging area for construction is located in the southwest corner of the project area, within existing City right-of-way, in an area that contains a wider shoulder and gravel. As discussed in the Biological Resources Section, above, an artificial vernal pool is located immediately north of the proposed staging area, but outside of the area of direct impact. This vernal pool and Pleasant Grove Creek could collect disturbed soil and construction-related contaminants.

The City's Grading Ordinance requires grading plans to include an erosion control plan to eliminate offsite flows of sediment and to reduce site erosion to protect water quality in streams and drainages, the storm drain system, and adjacent properties. The plan would include measures such as use of an onsite portable settling basin if dewatering is required during construction of the bridge piers or use of straw wattles around the staging area drainages to avoid sediment runoff into Pleasant Grove Creek. The City would require the contractor to comply with the ordinance and prepare a Stormwater Pollution Prevention Plan (SWPPP) as part of the National Pollutant Discharge Elimination Systems (NPDES) Permit required for the proposed project. The SWPPP would meet the requirement of the City's General Permit for Stormwater Discharge from the Central Valley Regional Water Quality Control Board (CVRWQCB). The proposed project would be required to obtain a Section 404 Permit from the U.S. Army Corps of Engineers (USACE), a Section 401 Water Quality Certification permit from the CVRWQCB, and a Lake and Streambed Alteration Agreement (Section 1600 Permit) from the California Department of Fish and Wildlife (CDFW). The City would implement best management practices (BMPs) specified in the required plans and permits as part of the proposed project design. The impacts to water quality are less than significant. No mitigation is required.

b. The proposed project would replace the functionally obsolete bridge and would raise the bridge profile above the 50-year flood event water surface elevation. The proposed project would not use groundwater for construction or operations and thus would not deplete groundwater supplies. The proposed project would minimally increase impervious surface, as a result of widening the bridge to provide for standard sidewalk and shoulders. The amount of recharge contributed to groundwater within the project area is minimal compared to that contributed by the open space surrounding the proposed project as well as the Sacramento Valley groundwater basin overall. No impacts associated with groundwater recharge are expected. No mitigation is required.

c.–e. The hydraulic analysis conducted by RBF Consulting (RBF 2013c) to support the bridge design describes potential floodplain impacts that could result from the proposed bridge replacement. In addition to the evaluation of floodplain impacts, an analysis was conducted to predict the total scour at the bridge piers during the 100-year flood. The report indicates there would a minimal decrease in water surface elevation during the 100-year event. Raising the bridge and reducing the number of piers within Pleasant Grove Creek would provide a minimal decrease in water surface elevation that extends approximately 3,400 feet upstream (east) of the bridge. Velocities within Pleasant Grove Creek are low through the project area and would be slightly reduced after the bridge replacement; therefore, the scour potential is not significant (RBF 2013c). This impact is less than significant. No mitigation is required.

The proposed project would not substantially increase the potential for small amounts of lubricants, sloughing of tire and brake material, and other contaminants associated with driving to enter the stormwater drainage system. The slight increase in impervious surface from widening of the roadway to accommodate two travel lanes with standard shoulder and sidewalk would be relatively small, an increase of less than 0.1 acre. The existing stormwater drainage system would be reconstructed as necessary to accommodate the road widening. This impact is less than significant. No mitigation is required.

g. The project site is located in the 100-year floodplain, but no housing is proposed as part of the project. The proposed project would raise the Industrial Avenue Bridge above the 50-year flood event and would replace the functionally obsolete bridge with a bridge that would provide a two-lane facility with standard shoulders and sidewalk. There would be no impact and no mitigation is required.

h., i. The bridge replacement would be constructed within the 100-year-floodplain of Pleasant Grove Creek. The bridge abutments and piers have the potential to obstruct or redirect the flow of floodwaters. However, the bridge would be raised above the 50-year storm event flow, higher than the existing bridge, thus the amount of bridge within the 100-year flow would be reduced from the existing conditions. The City would ensure that the structures associated with the proposed bridge, along with all other features, would be designed and located so that they do not obstruct floodwaters, create a public safety hazard, or result in any significant increase in water surface elevations onsite, upstream, or downstream. This impact is less than significant. No mitigation is required.

The proposed project would decrease the upstream water surface elevations by reducing the number of piers and raising the bridge soffit elevations. Because the proposed project would replace the existing bridge, provide sidewalk and shoulders to connect pedestrian and bicycle traffic with facilities north and south of the bridge, and raise the bridge above the 50-year flood event, the impacts from the proposed project are considered to be less than significant. The proposed project would not expose people or structures to a significant risk of loss, injury, or

death involving flooding, including flooding as a result of the failure of a levee or dam. The City would uphold the safety standards required by the BMPs and has incorporated safety features into the project design to minimize the risk to the public. This impact is less than significant. No mitigation is required.

j. The proposed project would not contribute to inundation by seiche, tsunami, or mudflow. There are no impacts. No mitigation is required.

Land Use and Planning

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Setting

The proposed project is located within the City of Roseville, Placer County, California, on the eastern edge of the Sacramento Valley floor at the base of the Sierra Nevada foothills. The proposed project is within the North Industrial Planning Area, located north of Blue Oaks Boulevard, south of West Sunset Boulevard, and west of SR-65. City land use designations for the surrounding area include M2 (General Industrial) to the north, south, and east; P/QP (Public/Quasi-Public) to the west; and M1 (Light Industrial) to the west and south; County land use designation is industrial (refer to Figure 2-3, *Existing General Plan Land Use Designations*). The area surrounding the proposed project is zoned by the City as IND (Light Industrial) to the east and P/QP (Public/Quasi-Public) and LI (Light Industrial) to the west; the area within the County is zoned INP (Industrial Park) with a Dc (Design Scenic Corridor) Combining District (refer to Figure 2-4, *Existing Zoning Classifications*). The County requirements and standards that apply to land uses within the Dc (Design Scenic Corridor) Combining District are the same as for the applicable zone with which the design review district is combined. In addition, the Southern Pacific Railroad (SPRR) parallels Industrial Avenue to the west and lands remain mostly undeveloped. The Placer County Justice Center is located at the north end of the proposed project, while commercial and industrial facilities are located at the south end of the proposed project, east of Industrial Avenue.

Discussion

a. The proposed project would not substantially alter existing land uses and all work will be completed within existing City right-of-way. No residences or businesses would be demolished as part of the proposed project. The proposed project would replace the Industrial Avenue Bridge over Pleasant Grove Creek and reconstruct Industrial Avenue to conform to the new bridge. In addition, the new bridge would provide a sidewalk on the east side of the bridge and shoulders wide enough to accommodate bicycle lanes. Therefore, the proposed project would not divide the area but would rather connect the neighborhood/community north of the bridge and

neighborhood/community south of the bridge. The proposed project would not divide an existing community. No impact would occur as a result of the proposed project. No mitigation is required.

b. The proposed project would not result in changes to existing land use, zoning, or specific plans in the City of Roseville. The proposed project would not alter existing land uses and is entirely within City right-of-way. Therefore, the proposed project not conflict with any existing plans. No impact would occur as a result of the proposed project. No mitigation is required.

c. The proposed project is located within the City's right-of-way and would replace a functionally obsolete bridge over Pleasant Grove Creek. There are no approved Habitat Conservation Plans of Natural Community Conservation Plans that apply to the project site. No impact would occur as a result of the proposed project. No mitigation is required.

Mineral Resources

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and residents of the State?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local General Plan, Specific Plan, or other land use plan?	☐	☐	☐	☒

Setting

According to the Roseville General Plan, mineral resources are limited and no mineral extraction operations currently exist or are anticipated to exist in Roseville within the timeframe of the General Plan's analysis. There are no MRZ-2 lands in the project area; the project area is classified as MRZ-4, a mineral area with no known mineral occurrences. No other deposits of mineral commodities are known to exist in the vicinity of the project site (California Department of Conservation 1995). No policies relating to mineral resources were included in the general plan.

Discussion

a.–b. The project site does not include any lands that are classified as MRZ-2 or any known locally important mineral resources. Therefore, there are no impacts. No mitigation is required.

Noise

Would the Project result in:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Setting

Noise Terminology

Different types of measurements are used to characterize the time-varying nature of sound. The following are brief definitions of noise terminology used in this evaluation:

- **Sound:** A vibratory disturbance created by a vibrating object that, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise:** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB):** A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

- **A-Weighted Decibel (dBA):** An overall frequency-weighted sound level in dB that approximates the frequency response of the human ear.
- **Sound Level Percentiles (L_n):** The sound level exceeded a certain percentage of time during a specified interval, where the subscript "n" is the percentile value. For example, L90 is the sound level exceeded 90 percent of the time, and L10 is the sound level exceeded 10 percent of the time.
- **Maximum and Minimum Sound Levels (L_{max} and L_{min}):** The maximum or minimum sound level measured during a measurement period.
- **Day-Night Level (L_{dn}):** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring from 10 PM to 7 AM.
- **Equivalent Continuous Sound Level (L_{eq}):** The average of the sound level occurring over a specified period.
- **Community Noise Equivalent Level (CNEL):** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring from 7 PM to 10 PM and 10 dB added to the A-weighted sound levels occurring from 10 PM to 7 AM.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hertz [Hz] to 8,000 Hz) range. However, it is widely accepted that people are able to begin to detect sound level changes of 3 dB for typical noisy environments. Further, a 10-dB increase is generally perceived as a doubling of loudness. Therefore, doubling sound energy (e.g., doubling the volume of traffic on a highway) would generally be perceived as a detectable, but not substantial, increase in sound level.

Noise Standards

Federal Transit Authority Construction Noise Guidelines

The Department of Transportation, Federal Transit Authority (FTA) has established a method for assessing construction source noise levels. Unless local noise ordinances can be found to apply, this method can be used to develop criteria on a project-specific basis. For major construction projects where a known noise-sensitive receptor (e.g., residential land use) is adjacent to the site, the use of the levels in Table 3-8, *Summary of Recommended Noise Levels for Major Construction Projects with Adjacent Noise-Sensitive Receptors,* is recommended by the FTA.

Table 3-8. Summary of Recommended Noise Levels for Major Construction Projects with Adjacent Noise-Sensitive Receptors

Land Use	L_{eq} (8-Hour) dBA		L_{dn} (30-Day Average) dBA
	Day	Night	
Residential	80	70	75
Commercial	85	85	80
Industrial	90	90	85

Source: j.c. brennan & associates, *Construction Noise and Vibration Assessment*, December 2013.

Caltrans

Construction noise is regulated by Caltrans standard specifications Section 14-8.02 "Noise Control." Section 14-8.02 requires that the project construction noise levels not exceed 86 dBA at 50 feet from the project site activities from 9 PM to 6 AM. Additionally, internal combustion engine equipment shall not be operated on the project site without the appropriate muffler.

City of Roseville

The City has established several policies and codes concerning the generation and control of noise that could adversely affect citizens and noise-sensitive land uses.

The City of Roseville Noise Ordinance exempts construction-related activity from noise regulation. Section 9.24.150 G of the ordinance also exempts noise from private construction (e.g., construction, alteration or repair activities) between the hours of 7 AM and 7 PM Monday through Friday, and between the hours of 8 AM and 8 PM Saturday and Sunday; provided, however, that all construction equipment is fitted with factory installed muffling devices and that all construction equipment shall be maintained in good working order. These exemptions are typical of city and county noise ordinances and reflect the recognition that construction-related noise is temporary in character, is generally acceptable when limited to daylight hours, and is part of what residents of urban areas expect as part of a typical urban noise environment (along with sirens).

The City of Roseville General Plan Noise Element outlines policies and implementation measures to achieve the City's goals of protecting Roseville residents from the harmful and annoying effects of exposure to excessive noise. The General Plan Noise Element identifies the maximum allowable noise level exposure from transportation noise sources according to sensitive receptor. In general, outdoor activity areas of sensitive receptors should have a maximum noise level of 60 dB L_{dn}; however, outdoor office space areas have a maximum L_{dn} of 65 dB and playgrounds/neighborhood parks have a maximum noise level of 70 dB L_{dn}.

Noise Sensitive Land Uses

As previously stated, land use designations for the surrounding area include M2 (General Industrial) to the north, south, and east; P/QP (Public/Quasi-Public) to the west; and M1 (Light Industrial) to the west and south. A potential noise-sensitive use in the area includes the Santucci Justice Center Courthouse located at 10820 Justice Center Drive, located at the northern end of the proposed project. There are no residential receptors within a 1,000-foot radius of the proposed project; the nearest residential use is located approximately 0.75 mile from the project site. There are private recreational facilities within close proximity of the proposed project (baseball, softball, basketball, trampoline, gymnastic, and other facilities that use warehouse/industrial buildings for their services).

Existing Noise Conditions

The existing noise environment in the project area is dominated by noise from traffic traveling on Industrial Avenue. The noise measurement site for the proposed project was located adjacent to Industrial

Avenue at a setback distance of approximately 60 feet from the centerline of the roadway. The results of the 24-hour noise measurement are summarized in Table 3-9, *Existing Ambient Noise Monitoring*.

Table 3-9. Existing Ambient Noise Monitoring

Site	Location	L_{dn} (dBA)	Measured Hourly Noise Levels, dBA Low-High (Average)					
			Daytime (7AM – 10 PM)			Nighttime (10 PM – 7 AM)		
			L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
LT-1	60 feet west of Industrial Avenue centerline	71	66-69 (67)	56-67 (62)	77-96 (83)	56-68 (64)	47-56 (51)	75-88 (80)

Source: j.c. brennan & associates, *Construction Noise and Vibration Assessment*, December 2013.

Discussion

a., d. There are no sensitive receptors located within 0.75 mile of the proposed project; however, commercial and industrial land uses in the project vicinity could be impacted by construction activities which may include pile driving. The Santucci Justice Center Courthouse is a potential sensitive receptor that is located at the northern end of the proposed project boundary. The proposed project would replace the Industrial Avenue Bridge over Pleasant Groove Creek and provide standard sidewalk and shoulders, ultimately conforming to the existing roadway north and south of the proposed project area. The proposed project would not add capacity to Industrial Avenue. Therefore, other than noise generated during construction, the proposed project would not result in an increase in noise levels after project completion.

Table 3-10, *Construction Equipment Noise Levels for the Worst Case Scenario*, provides the usage percent of each construction equipment type and the hourly dBA. The pile driving would be the loudest construction activity that could occur with the proposed project, and thus is considered the worst case scenario.

Table 3-10. Construction Equipment Noise Levels for the Worst Case Scenario (50 Feet)

Equipment	Usage (%)	Hourly L_{eq} (dBA)
Backhoe	40	73.6
Crane	16	72.6
Concrete Mixer Truck	40	74.8
Impact Pile Driver	20	94.3
Excavator	40	76.7
Compressor (air)	40	73.7
Total		94.5 dBA

Source: j.c. brennan & associates, *Construction Noise and Vibration Assessment*, December 2013.

The Construction Noise and Vibration Assessment (j.c. brennan & associates 2013) analyzed the noise contours for the proposed project during construction under the worst case scenario (pile driving), and found that the proposed project would result in noised levels between 60 and 65 dBA at the Santucci Justice Center Courthouse on the north and existing businesses on the south.

As stated above, the City General Plan has a maximum noise level for outdoor activity areas for sensitive receptors, such as office space, of 65 dB while places such as meeting halls and residences have a maximum outdoor noise level of 60 dB. In addition, the City Noise Ordinance acknowledges that construction noise is temporary in nature and exempts construction-related activity from noise regulation.

Noise impacts to the identified noise-receptors in the vicinity of the proposed project would be less than significant. Typical noise design considerations further reduce noise levels during construction. These design considerations could include maintaining construction equipment in proper operating condition and equipping engines with appropriate mufflers. This impact is less than significant. No mitigation is required.

b. The proposed project construction activities may result in a minor amount of ground vibration. The most significant source of ground-borne vibrations during project construction would be from pile-drivers and vibratory compactors. Pile-driving can result in peak particle velocity (ppv) values of up to 1.158 inches per second (in/sec) with more typical values around 0.644 in/sec at a distance of 25 feet. Vibratory compactors would generate typical vibration levels of 0.210 in/sec at a distance of 25 feet (j.c. brennan & associates 2013).

The closest building to the project site is located in the Santucci Justice Center, at a distance of approximately 800 feet northeast of the project site. The threshold for architectural damage of buildings is 0.20 in/sec (j.c. brennan & associates 2013). However, beyond a distance of 100 feet, pile-driving vibrations would be approximately 0.1 in/sec, less than the 0.2 in/sec threshold (j.c. brennan & associates 2013).

In addition, vibration from construction activity is typically below the threshold of human perception when the activity is more than about 50 feet from the receiver. Also, vibration from these activities would be short-term and would end when construction is completed. This impact is less than significant. No mitigation is required.

c. Refer to item "a." Because the proposed project would not permanently increase capacity of Industrial Avenue, noise levels would remain the same after construction completion. The proposed project would not result in an increase in ambient noise level. No impacts would occur as a result of the proposed project. No mitigation is required.

e.–f. The project site is not located within an airport land use plan area, within two miles of an airport, or within the vicinity of a private airstrip. There are no impacts. No mitigation is required.

Population and Housing

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation	Less-than-Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Setting

The population for the City of Roseville in 2010 was 118,788 people, an approximately 48.6 percent increase from the 2000 population of 79,921 people (U.S. Census Bureau 2010). The U.S. Census Bureau estimated that by 2012, the City of Roseville's population would increase by another 4.8 percent to total 124,519 people by July 2012 (U.S. Census Bureau 2013).

Discussion

a. The proposed project would not directly induce population growth because it proposes no residential development. It would not indirectly induce population growth because it would not increase roadway capacity, nor would it extend roads or infrastructure into previously undeveloped areas. The proposed project would replace the functionally obsolete, narrow bridge with a new bridge that includes shoulders and sidewalk. These improvements are needed to construct a safe and standard two-lane facility with standard shoulders and sidewalks consistent with City and American Association of State Highway and Transportation Officials (AASHTO) standards, remove the bridge from the Highway Bridge Program (HBP) eligibility list for bridge replacements, reduce the likeliness of hydraulic pressure flow against the bridge, and to improve the pedestrian and bicycle facilities across the bridge. Therefore, there are no impacts. No mitigation is required.

b.–c. The proposed project does not include residential development, would not displace any existing homes or people, and would not necessitate the construction of replacement housing elsewhere. There are no impacts. No mitigation is required.

Public Services

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
a) Fire protection?	☐	☐	☒	☐
b) Law enforcement?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Maintenance of public facilities, including roads?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

Setting

Fire protection for the project site is provided by the Roseville Fire Department. The proposed project is located within District 7, which is served by Station 7, located at 911 Highland Point Drive, located approximately 1.8 miles southeast of the project site. Law enforcement services are provided to Roseville by the Roseville Police Department. The nearest schools to the project site are: Vencil Brown School (approximately 1.5 miles southeast), Buljan Intermediate School (approximately 1.62 miles south), and Diamond Creek School (approximately 1.45 miles west) in the City of Roseville; and Ruhkala Elementary School (approximately 0.8 miles east) and William Jessup University (approximately one mile northeast) in the City of Rocklin. The Roseville Public Works Department performs maintenance of roads and public facilities.

Discussion

a.–e. The proposed project would not introduce new structures, attract new residents, or increase on-site activity that would produce demand for fire and police protection services, schools, or other public facilities. As discussed in Chapter 2, the project site contains utilities that include water and sewer lines, fiber optic cables, and overhead utilities. These utilities would be relocated as a result of bridge construction. The utilities attached to the bridge would be relocated vertically with the bridge to elevate the utilities above the 50-year storm event water surface elevation.

During construction, the City would require the contractor to coordinate with the utility companies in order to maintain utility service. In addition, the City would require the contractor to implement a traffic management plan to be approved by the City Engineering Department, as discussed in Chapter 2. The plan would include notifications to the City Police and Fire Departments 48 hours in advance of any road closures. The impacts are less than significant. No mitigation is required.

Recreation

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Setting

The proposed project is located in an area that is immediately surrounded by industrial and public/quasi-public land use designations (refer to Figure 2-3, *Existing General Plan Land Use Designations*). There are no designated City parks within a 0.5-mile radius of the proposed project. However, there are private recreational facilities within close proximity of the proposed project, which include indoor baseball, softball, basketball, trampoline, gymnastic, and other facilities that use warehouse/industrial buildings for their services. Four recreation resources are located within one mile of the proposed project: Summerhill Park, Dr. Paul J Dugan Park, and Harrigan Greens in Roseville; and Kathy Lund Park in Rocklin. The City of Roseville also has several open space areas associated with the NIPA Open Space, the nearest point is located 0.25 mile west of the proposed project. Class II bicycle lanes (on-street lanes with appropriate signing and striping) are identified for Industrial Avenue in the City General Plan Circulation Element, as well as the City Bicycle Master Plan. There are existing Class II facilities north and south of the Industrial Avenue Bridge over Pleasant Grove Creek.

Discussion

a. – b. The proposed project would not include new residences or features that would attract new residents or increase demand on parks and recreational trail systems. The proposed project includes providing shoulders that would accommodate bicycle traffic, thus connecting the bicycle lanes provided north and south of the bridge. This connection would provide safety for the cyclists. There are no impacts. No mitigation is required.

Transportation/Traffic

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

Setting

Existing Roadway Facility

The existing Industrial Avenue Bridge is 124 feet long, 26.4 feet wide (two travel lanes, no shoulders) and has two, 1.3-foot-wide vehicle barrier rails. North and south of the bridge, Industrial Avenue is a two-lane roadway with a center turn-lane. South of the bridge, shoulders are present for both north and southbound traffic. North of the bridge, Industrial Avenue has a shoulder for southbound traffic, while northbound includes a Class II bicycle lane and a right-turn lane.

Existing Average Daily Vehicle Trips

Industrial Avenue provides vehicular access of approximately 10,000 average daily trips (ADT) through a commercial corridor between Washington Boulevard to the south and Athens Avenue to the north. North of Athens Boulevard, Industrial Boulevard is largely undeveloped.

Existing Bicycle Facilities

As discussed in the Recreation Section, above, Class II bicycle lanes are identified for Industrial Avenue in the City General Plan Circulation Element, as well as the City Bicycle Master Plan. There are existing Class II facilities north and south of the Industrial Avenue Bridge over Pleasant Grove Creek.

Existing Pedestrian Facilities

Pedestrian facilities consist of sidewalks on the east side of Industrial Avenue, located north and south of the bridge. No sidewalks are provided on the Industrial Avenue Bridge.

Existing Transit Facilities

Roseville Transit provides a fixed route service (Route S) along Industrial Avenue. Route S provides service to three bus stops: Galleria Transfer Point; Washington Boulevard at Pleasant Grove Boulevard; and the Santucci Justice Center. Route S operates during the peak hours of 7:35 AM to 9:25 AM, 11:05 AM to 2:25 PM, and 4:10 PM to 5:25 PM Monday through Friday; it does not operate on weekends or holidays. Roseville Transit also operates Dial-A-Ride, which provides curb-curb bus service between 5:45 AM and 10 PM Monday through Friday and 8 AM and 5 PM Saturday and Sunday. Dial-A-Ride is also a complementary ADA paratransit service.

Discussion

a., b., e. The proposed project would replace the functionally obsolete Industrial Avenue Bridge, with a bridge that provides standard sidewalk and shoulder, as well as would raise the profile above the 50-year storm event. The ADT for Industrial Avenue would remain the same before and after project completion. Therefore, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The proposed project would not conflict with an applicable congestion management program as travel demands would not change and level of service on Industrial Avenue would remain the same.

During construction, the proposed project would not result in road closure; however, temporary lane closures may be necessary. The proposed project would include a traffic management plan that complies with traffic control standards to ensure that substantial delays to traffic are minimized during construction. Pursuant to standard City policy, the plans for the roadway improvements would be subject to approval of the Roseville Fire Department to ensure that the plans comply with emergency access standards. The proposed project would comply with the

Roseville Municipal Code, which requires that any roadwork resulting in traffic lane closures be approved by the Roseville Engineering Division and that the police and fire departments be sent notices 48 hours in advance of any road closures. Therefore, construction-related impacts on traffic circulation and access are less than significant. No mitigation is required.

c. The proposed project does not include an air traffic component and would not have the potential to affect air traffic patterns. Therefore, there are no impacts. No mitigation is required.

d. The purpose of the proposed project is to construct a safe and standard two-lane facility with standard shoulders and sidewalks consistent with City and American Association of State Highway and Transportation Officials (AASHTO) standards, remove the bridge from the Highway Bridge Program (HBP) eligibility list for bridge replacements, reduce the likeliness of hydraulic pressure flow against the bridge, and to improve the pedestrian and bicycle facilities across the bridge. As the proposed project would include sidewalks and shoulders, hazards related to incidents between vehicles and pedestrians or cyclists would be reduced. In addition, the proposed project would raise the profile of the bridge to be outside the 50-year flood event, thus reducing any hazards associated with the hydraulic pressure flow against the bridge. Therefore, impacts resulting from the proposed project would be beneficial, and do not include any design features that could increase hazards. No mitigation is required.

f. The proposed project would replace the Industrial Avenue Bridge over Pleasant Grove Creek and would provide standard shoulders (which can accommodate bicycle lanes) and sidewalk, which is consistent with the City of Roseville General Plan as well as the City of Roseville Bicycle Master Plan. Ultimately, the proposed project would be beneficial to public transit, bicycle, or pedestrian facilities by providing a connection between existing bicycle and pedestrian facilities north and south of the bridge.

The proposed project would not result in road closure; however, lane closures may be necessary during construction. As noted in Chapter 2, the proposed project would include a traffic management plan that requires coordination with transit providers to ensure that disruption to services is minimized during construction. The existing Class II bicycle lanes in the project area would be maintained, and detours for bicycle traffic would not be necessary. Therefore, the impact is less than significant. No mitigation is required.

Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effect s?	☐	☐	☒	☐
d) Are sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Has the wastewater treatment provider that serves or may serve the project determined that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Is the project served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

The City is located within the jurisdiction of the Central Valley Regional Water Quality Control Board, Region 5 (CVRWQCB). The City maintains a Storm Water Management Program (SWMP) in compliance with their General Permit for Stormwater Discharge from the CVRWQCB. Roseville's wastewater is treated at one of two wastewater treatment plants. In the northwest part of Roseville, treatment is provided by the Pleasant Grove Wastewater Treatment Plant. In the southwest part of Roseville, wastewater is conveyed to the Dry Creek Wastewater Treatment Plant. Both plants produce recycled water that meets all the requirements for "full unrestricted reuse" specified by the California Department of Health Services. An Order is currently proposed to renew the National Pollutant Discharge Elimination System (NPDES) Permit for these facilities.

Roseville is supplied with water by the Roseville Environmental Utilities Department. Roseville's water supply comes from Folsom Lake and is treated at the City owned and operated Water Treatment Plant on

Barton Road. The City also maintains five groundwater wells, operates an aquifer storage and recovery program, and has several interties with surrounding water agencies.

The Western Placer Waste Management Authority is a regional agency handling recycling and waste disposal for Roseville and surrounding areas. Their facilities include a Material Recovery Facility and the Western Regional Sanitary Landfill. The City of Roseville has a Construction and Demolition Debris Ordinance that provides guidelines for reducing the amount of solid waste by recycling 50 percent of solid waste, including construction and demolition debris.

Utilities and related services within the proposed project area also include SureWest, AT&T, Level 3 and Zayo fiber optics and cables, as well as overhead utilities, buried sewer lines, a water line, and storm drain system. The City is coordinating with the utility operators to relocate or accommodate all existing utilities.

Discussion

a., b., d., e. The proposed project would not have any impact on water or wastewater systems, as it would replace the functionally obsolete Industrial Avenue Bridge over Pleasant Grove Creek. Proposed project operations would not generate a demand for water because no drinking fountains, toilets, or other water-dependent facilities are planned for the proposed project. Neither construction nor operation of the proposed project would generate substantial amounts of wastewater. Therefore, there are no impacts. No mitigation is required.

c. The proposed project would not generate a substantial amount of stormwater drainage such that new storm water drainage facilities would be required. The proposed project would replace the existing bridge and provide standard shoulder and a sidewalk, resulting in an increase of impervious surface of approximately 0.1 acre. Therefore, stormwater runoff would not increase such that drainage facilities would require upgrading. Impacts are less than significant. No mitigation is required.

The City would require the contractor to submit a stormwater pollution prevention plan (SWPPP) that meets the requirements of the City's SWMP to handle stormwater discharges during construction and protect receiving water quality. These measures typically include, but are not limited to the following:

- Installing and maintaining temporary erosion controls, such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover.
- Covering bare areas with erosion control matting or mulch (straw, hay, or erosion control fabric) to stabilize the soil surfaces and reduce surface erosion following construction.

Compliance with the City's SWMP would ensure this impact is less than significant. No mitigation is required.

f., g. The proposed project would generate solid waste as a result of removing existing roadway materials and demolishing the existing bridge structure. The Western Placer Waste Management Authority (WPWMA), which operates the Western Regional Sanitary Landfill, estimates that the current space available, together with recovery efforts through the materials recovery program, would enable the landfill to accept waste well into the twenty-first century (WPWMA 2014). As specified in the City's design/construction standards for solid waste (section 151), the City would ensure that its contractor meets with the designated Roseville Environmental Utilities inspector prior to beginning work to ensure that an approved plan is in place to store and dispose of all construction debris, according to relevant federal, state, and local statutes. Therefore, these impacts are less than significant. No mitigation is required.

Mandatory Findings of Significance

Would the Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a.–c. With implementation of the City's Mitigating Ordinances, Guidelines, and Standards and best management practices (BMPs) listed in Chapter 2, mitigation measures described in this chapter, and permit conditions, the proposed project is not expected to have a significant impact on the habitat of any plant or animal species. Long-term environmental goals are not expected to be affected by the proposed project because there are no new cumulative impacts beyond what was disclosed in the City General Plan and City General Plan Environmental Impact Report (EIR). With incorporation of mitigation measures, the proposed project does not have the potential to degrade the quality of the environment, substantially reduce the habitat of any wildlife species, or create adverse effects on human beings.

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5.0 REFERENCES

A.A. Rich and Associates. *Replacement of the Industrial Avenue Bridge, Placer County, Fishery Resources Report.* October 2013.

California Department of Conservation, Division of Land Resource Protection. 2010. Placer County Important Farmland 2010. Farmland Mapping and Monitoring Program. Map Published May 9, 2013.

California Department of Conservation, Division of Mines and Geology (California Geological Survey). 2012. . Alquist-Priolo Earthquake Fault Zones. Available: http://www.consrv.ca.gov/cgs/rghm/ap/Pages/official_release.aspx. Accessed March 16, 2013.

———. 1995. *Mineral Land Classification of Placer County, California*. Open File Report 95-10.

———. 1981. California Geological Survey, Regional Geologic Map No. 1A. Available: http://www.quake.ca.gov/gmaps/RGM/sacramento/sacramento.html. Accessed March 16, 2014.

California Department of Forestry and Fire Protection (CalFire). 2008. Very High Fire Hazard Severity Zones in LRA. Recommended by CalFire. November 2008.

———. 2008. Very High Fire Hazard Severity Zones in SRA. Adopted by CalFire. November 2007.

California Department of Transportation. 2014. Caltrans ARS online – Fault Mapping Model. Available: http://dap3.dot.ca.gov/ARS_Online/index.php. Accessed March 16, 2014.

Chainey-Davis Biological Consulting. 2013. *Waters Delineation Report for the Industrial Avenue Bridge Replacement Project*. October 2013.

EcoBridges Environmental Consulting. 2014a. *Industrial Avenue Bridge Replacement Project Natural Environment Study*. February 2014.

———. 2014b. *Industrial Avenue Bridge Replacement Project Biological Assessment*. February 2014.

j.c. brennan & associates. 2013. *Construction Noise and Vibration Assessment, Industrial Avenue Bridge Replacement Project*. December 2013.

Kimley-Horn and Associates, Inc. 2014. *Water Quality Technical Memorandum*. February 2014.

RBF Consulting. 2013a. *Phase I Initial Site Assessment for Industrial Avenue Bridge Project.* September 2013.

———. 2013b. *Air Quality Report for Industrial Avenue Bridge Project*. November 2013.

———.2013c. *(Draft) Industrial Avenue Bridge Replacement Project Hydrology and Hydraulic Design Report*. December 2013.

Tremaine & Associates, Inc. 2013. *Historic Property Survey Report*. November 2013.

———.2013. *Archaeological Survey Report, Bridge No. 19C0046, Industrial Avenue over Pleasant Grove Creek Replacement Project*. November 2013.

U.S. Census Bureau. 2000. Census 2000 Summary File 1. Available: http://www.census.gov/prod/cen2000/doc/sf1.pdf. Accessed March 14, 2014.

———. 2010. Census 2010 Summary File 1. Available: http://www.census.gov/prod/cen2010/doc/dpsf.pdf. Accessed on March 14, 2014.

———. 2013. Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2012. Release Date May 2013.

Western Placer Waste Management Authority. 2014. Western Regional Sanitary Landfill Information. Available: http://www.wpwma.com/landfill.html. Accessed March 16, 2014.

Appendix A

Air Quality and Greenhouse Gas Emissions Data

Parenthetical CALEEMOD Assumptions
For: Industrial Avenue Bridge Project
Date: May 2014

CONSTRUCTION

- Other Asphalt Surfaces.
- 7,749 square feet.

Demolition (2015)

- 5 days.

Equipment:

Quantity	Type	Hours of Daily Operation
1	Concrete/Industrial Saws	8
1	Crane	7
3	Excavators	8
3	Other Construction Equipment (Dump Trucks)	8
1	Rough Terrain Forklift	8
1	Rubber Tired Loader	8
2	Signal Boards	8
1	Skid Steer Loader	8
4	Tractors/Loaders/Backhoes	7

Grading 1 (2015)

- 6,300 cubic yards of cut and fill.
- 44 days.

Equipment:

Quantity	Type	Hours of Daily Operation
3	Excavators	8
1	Grader	8
2	Rollers	7
1	Rubber Tired Loader	8
2	Signal Boards	8
1	Skid Steer Loader	8
4	Tractors/Loaders/Backhoes	8

Building Construction (2015)

- 67 days.

Equipment:

Quantity	Type	Hours of Daily Operation
1	Bore/Drill Rig	8
1	Crane	7
1	Rough Terrain Forklift	8
2	Signal Boards	8
2	Tractors/Loaders/Backhoes	7

Paving 1 (2015)

- 2 days.

Equipment:

Quantity	Type	Hours of Daily Operation
1	Other Construction Equipment (Striping Truck)	8
1	Paver	7
2	Rollers	7
1	Rubber Tired Loader	8
2	Signal Boards	8
1	Surfacing Equipment	8
3	Tractors/Loaders/Backhoes	7

Demolition 2 (2015)

- 5 days.

Equipment:

Quantity	Type	Hours of Daily Operation
1	Concrete/Industrial Saws	8
1	Crane	7
3	Excavators	8
3	Other Construction Equipment (Dump Trucks)	8
1	Rough Terrain Forklift	8
1	Rubber Tired Loader	8
2	Signal Boards	8
1	Skid Steer Loader	8
4	Tractors/Loaders/Backhoes	7

Grading 2 (2015)

- 2,400 cubic yards of import.
- 44 days.

Equipment:

Quantity	Type	Hours of Daily Operation
3	Excavators	8
1	Grader	8
2	Rollers	7
1	Rubber Tired Loader	8
2	Signal Boards	8
1	Skid Steer Loader	8
4	Tractors/Loaders/Backhoes	8

Paving 2 (2015)

- 5 days.

Equipment:

Quantity	Type	Hours of Daily Operation
1	Other Construction Equipment (Striping Truck)	8
1	Paver	7
2	Rollers	7
1	Rubber Tired Loader1	8
2	Signal Boards	8
1	Surfacing Equipment	8
3	Tractors/Loaders/Backhoes	7

Building Construction (2015 – 2016)

- 66 days.

Equipment:

Quantity	Type	Hours of Daily Operation
1	Bore/Drill Rig	8
1	Crane	7
1	Rough Terrain Forklift	8
2	Signal Boards	8
2	Tractors/Loaders/Backhoes	7

Architectural Coating (2016)

- 5 days.

Equipment (CALEEMOD Default):

Quantity	Type	Hours of Daily Operation
1	Air Compressor	6

Industrial Avenue Bridge Replacement Project

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.00		0.00	7,749.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	2			**Operational Year**	2016
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	793.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 126'L, 60'W (including 1.5' railings) = 7,749SF

Construction Phase - Anticipated Construction Schedule

Off-road Equipment - Proposed Construction Equipment
3 Dump Trucks

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment
1 Striping Truck

Off-road Equipment - Proposed Construction Equipment
3 Dump Trucks

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment
1 Striping Truck

Off-road Equipment -

Grading - Acres disturbed split amont 2 grading phases
Grading: 6,300CY Cut and Fill
Grading 2: 2,400CY Import

Demolition -

Trips and VMT - Grading Hauling Distance = 0.4 to reflect distance across the project site.

Construction Off-road Equipment Mitigation - Mitigation per PCAPCD Rule 228

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	67.00
tblConstructionPhase	NumDays	0.00	66.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	44.00
tblConstructionPhase	NumDays	0.00	44.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	PhaseEndDate	1/4/2016	3/29/2016
tblConstructionPhase	PhaseEndDate	3/29/2016	12/28/2015
tblConstructionPhase	PhaseStartDate	12/29/2015	3/23/2016
tblConstructionPhase	PhaseStartDate	3/23/2016	12/22/2015
tblGrading	AcresOfGrading	22.00	0.09
tblGrading	AcresOfGrading	22.00	0.09
tblGrading	MaterialExported	0.00	6,300.00
tblGrading	MaterialImported	0.00	2,400.00
tblOffRoadEquipment	HorsePower	171.00	9.00
tblOffRoadEquipment	HorsePower	171.00	9.00

tblOffRoadEquipment	HorsePower	162.00	81.00
tblOffRoadEquipment	HorsePower	174.00	81.00
tblOffRoadEquipment	HorsePower	205.00	226.00
tblOffRoadEquipment	HorsePower	205.00	226.00
tblOffRoadEquipment	HorsePower	226.00	89.00
tblOffRoadEquipment	HorsePower	226.00	89.00
tblOffRoadEquipment	HorsePower	226.00	255.00
tblOffRoadEquipment	HorsePower	64.00	255.00
tblOffRoadEquipment	HorsePower	174.00	255.00
tblOffRoadEquipment	HorsePower	100.00	97.00
tblOffRoadEquipment	HorsePower	100.00	97.00
tblOffRoadEquipment	HorsePower	162.00	97.00
tblOffRoadEquipment	HorsePower	80.00	97.00
tblOffRoadEquipment	HorsePower	80.00	97.00
tblOffRoadEquipment	HorsePower	199.00	97.00
tblOffRoadEquipment	HorsePower	199.00	97.00
tblOffRoadEquipment	HorsePower	162.00	78.00
tblOffRoadEquipment	HorsePower	162.00	9.00
tblOffRoadEquipment	HorsePower	171.00	89.00
tblOffRoadEquipment	HorsePower	100.00	174.00
tblOffRoadEquipment	HorsePower	199.00	125.00
tblOffRoadEquipment	HorsePower	6.00	80.00
tblOffRoadEquipment	LoadFactor	0.42	0.56
tblOffRoadEquipment	LoadFactor	0.42	0.56
tblOffRoadEquipment	LoadFactor	0.38	0.73
tblOffRoadEquipment	LoadFactor	0.41	0.73
tblOffRoadEquipment	LoadFactor	0.50	0.29
tblOffRoadEquipment	LoadFactor	0.50	0.29
tblOffRoadEquipment	LoadFactor	0.29	0.20
tblOffRoadEquipment	LoadFactor	0.29	0.20

tblOffRoadEquipment	LoadFactor	0.29	0.40
tblOffRoadEquipment	LoadFactor	0.37	0.40
tblOffRoadEquipment	LoadFactor	0.41	0.40
tblOffRoadEquipment	LoadFactor	0.40	0.37
tblOffRoadEquipment	LoadFactor	0.40	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.48
tblOffRoadEquipment	LoadFactor	0.38	0.56
tblOffRoadEquipment	LoadFactor	0.42	0.20
tblOffRoadEquipment	LoadFactor	0.40	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.42
tblOffRoadEquipment	LoadFactor	0.82	0.38
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Excavators

tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Air Compressors	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards

tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	0.40
tblTripsAndVMT	VendorTripNumber	0.00	1.00

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					
2015	0.3996	3.7443	2.5598	3.8400e-003	0.0694	0.2456	0.3150	0.0272	0.2278	0.2550	0.0000	354.5071	354.5071	0.0912	0.0000	356.4213
2016	0.1431	0.5244	0.3459	5.8000e-004	8.9000e-004	0.0336	0.0345	2.4000e-004	0.0310	0.0313	0.0000	53.0103	53.0103	0.0150	0.0000	53.3257
Total	**0.5427**	**4.2687**	**2.9056**	**4.4200e-003**	**0.0703**	**0.2792**	**0.3495**	**0.0275**	**0.2588**	**0.2862**	**0.0000**	**407.5173**	**407.5173**	**0.1062**	**0.0000**	**409.7470**

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					
2015	0.3996	3.7443	2.5598	3.8400e-003	0.0481	0.2456	0.2937	0.0164	0.2278	0.2442	0.0000	354.5067	354.5067	0.0912	0.0000	356.4209
2016	0.1431	0.5244	0.3459	5.8000e-004	8.9000e-004	0.0336	0.0345	2.4000e-004	0.0310	0.0313	0.0000	53.0102	53.0102	0.0150	0.0000	53.3256
Total	**0.5427**	**4.2687**	**2.9056**	**4.4200e-003**	**0.0490**	**0.2792**	**0.3282**	**0.0167**	**0.2588**	**0.2755**	**0.0000**	**407.5169**	**407.5169**	**0.1062**	**0.0000**	**409.7465**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**30.30**	**0.00**	**6.09**	**39.26**	**0.00**	**3.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.0392	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
Energy	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
Total	**0.0392**	**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**

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	0.0392	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
Energy	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
Total	**0.0392**	**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**

	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	N20	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2015	5/7/2015	5	5	
2	Grading	Grading	5/8/2015	7/8/2015	5	44	
3	Building Construction	Building Construction	7/9/2015	10/9/2015	5	67	
4	Paving	Paving	10/10/2015	10/13/2015	5	2	
5	Demolition 2	Demolition	10/14/2015	10/20/2015	5	5	
6	Grading 2	Grading	10/21/2015	12/21/2015	5	44	
7	Building Construction 2	Building Construction	12/22/2015	3/22/2016	5	66	
8	Paving 2	Paving	12/22/2015	12/28/2015	5	5	
9	Architectural Coating	Architectural Coating	3/23/2016	3/29/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.088

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,624; Non-Residential Outdoor: 3,875 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction 2	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving 2	Signal Boards	2	8.00	6	0.82
Paving 2	Surfacing Equipment	1	8.00	253	0.30
Paving 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving 2	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading 2	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20

Building Construction 2	Forklifts	2	6.00	89	0.20
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition 2	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading 2	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	1	7.00	255	0.40
Demolition	Excavators	3	8.00	97	0.37
Grading	Excavators	3	8.00	81	0.73
Grading	Graders	1	8.00	255	0.40
Grading	Rollers	2	7.00	97	0.37
Building Construction	Bore/Drill Rigs	1	8.00	226	0.29
Building Construction	Cranes	1	7.00	89	0.20
Building Construction	Rough Terrain Forklifts	1	8.00	97	0.37
Paving	Other Construction Equipment	1	8.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	2	7.00	80	0.38
Paving	Rubber Tired Loaders	1	8.00	97	0.37
Demolition 2	Excavators	3	8.00	9	0.56
Demolition 2	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition 2	Cranes	1	7.00	226	0.29
Demolition 2	Other Construction Equipment	3	8.00	89	0.20
Demolition 2	Rough Terrain Forklifts	1	8.00	174	0.41
Demolition 2	Rubber Tired Loaders	1	8.00	125	0.42
Demolition 2	Signal Boards	2	8.00	80	0.38
Demolition 2	Skid Steer Loaders	1	8.00	255	0.40
Demolition 2	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Grading 2	Rubber Tired Loaders	1	8.00	199	0.36
Grading 2	Signal Boards	2	8.00	6	0.82
Grading 2	Skid Steer Loaders	1	8.00	64	0.37

Grading 2	Excavators	3	8.00	78	0.48
Grading 2	Graders	1	8.00	81	0.73
Grading 2	Rollers	2	7.00	97	0.37
Building Construction 2	Bore/Drill Rigs	1	8.00	226	0.29
Building Construction 2	Cranes	1	7.00	89	0.20
Building Construction 2	Rough Terrain Forklifts	1	8.00	97	0.37
Paving 2	Other Construction Equipment	1	8.00	9	0.56
Paving 2	Pavers	1	7.00	125	0.42
Paving 2	Rollers	2	7.00	80	0.38
Paving 2	Rubber Tired Loaders	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Rough Terrain Forklifts	1	8.00	100	0.40
Demolition	Rubber Tired Loaders	1	8.00	199	0.36
Demolition	Signal Boards	2	8.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	64	0.37
Demolition	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Demolition	Other Construction Equipment	3	8.00	171	0.42
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Signal Boards	2	8.00	6	0.82
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Signal Boards	2	8.00	6	0.82
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading 2	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction 2	Signal Boards	2	8.00	6	0.82

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	18	45.00	0.00	35.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	16	40.00	0.00	623.00	10.80	7.30	0.40	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	15	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	16	40.00	0.00	237.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	3.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	15	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2015

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					3.9800e-003	0.0000	3.9800e-003	6.0000e-004	0.0000	6.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0174	0.1844	0.1155	1.7000e-004		0.0107	0.0107		9.9400e-003	9.9400e-003	0.0000	15.5888	15.5888	4.3500e-003	0.0000	15.6802
Total	**0.0174**	**0.1844**	**0.1155**	**1.7000e-004**	**3.9800e-003**	**0.0107**	**0.0147**	**6.0000e-004**	**9.9400e-003**	**0.0105**	**0.0000**	**15.5888**	**15.5888**	**4.3500e-003**	**0.0000**	**15.6802**

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	5.0000e-004	5.4400e-003	5.3900e-003	1.0000e-005	2.9000e-004	9.0000e-005	3.8000e-004	8.0000e-005	8.0000e-005	1.6000e-004	0.0000	1.2033	1.2033	1.0000e-005	0.0000	1.2035
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	4.7000e-004	6.0000e-004	6.0400e-003	1.0000e-005	8.9000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.8271	0.8271	5.0000e-005	0.0000	0.8282
Total	**9.7000e-004**	**6.0400e-003**	**0.0114**	**2.0000e-005**	**1.1800e-003**	**1.0000e-004**	**1.2800e-003**	**3.2000e-004**	**9.0000e-005**	**4.0000e-004**	**0.0000**	**2.0305**	**2.0305**	**6.0000e-005**	**0.0000**	**2.0317**

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					1.7000e-003	0.0000	1.7000e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0174	0.1844	0.1155	1.7000e-004		0.0107	0.0107		9.9400e-003	9.9400e-003	0.0000	15.5888	15.5888	4.3500e-003	0.0000	15.6802
Total	**0.0174**	**0.1844**	**0.1155**	**1.7000e-004**	**1.7000e-003**	**0.0107**	**0.0124**	**2.6000e-004**	**9.9400e-003**	**0.0102**	**0.0000**	**15.5888**	**15.5888**	**4.3500e-003**	**0.0000**	**15.6802**

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	5.0000e-004	5.4400e-003	5.3900e-003	1.0000e-005	2.9000e-004	9.0000e-005	3.8000e-004	8.0000e-005	8.0000e-005	1.6000e-004	0.0000	1.2033	1.2033	1.0000e-005	0.0000	1.2035
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	4.7000e-004	6.0000e-004	6.0400e-003	1.0000e-005	8.9000e-004	1.0000e-005	9.0000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.8271	0.8271	5.0000e-005	0.0000	0.8282
Total	**9.7000e-004**	**6.0400e-003**	**0.0114**	**2.0000e-005**	**1.1800e-003**	**1.0000e-004**	**1.2800e-003**	**3.2000e-004**	**9.0000e-005**	**4.0000e-004**	**0.0000**	**2.0305**	**2.0305**	**6.0000e-005**	**0.0000**	**2.0317**

3.3 Grading - 2015

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					0.0166	0.0000	0.0166	9.1100e-003	0.0000	9.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1318	1.2971	0.8293	1.2900e-003		0.0846	0.0846		0.0785	0.0785	0.0000	120.7137	120.7137	0.0334	0.0000	121.4150
Total	**0.1318**	**1.2971**	**0.8293**	**1.2900e-003**	**0.0166**	**0.0846**	**0.1012**	**9.1100e-003**	**0.0785**	**0.0876**	**0.0000**	**120.7137**	**120.7137**	**0.0334**	**0.0000**	**121.4150**

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	5.2100e-003	8.6200e-003	0.0714	1.0000e-005	1.1000e-004	6.0000e-005	1.7000e-004	3.0000e-005	6.0000e-005	9.0000e-005	0.0000	0.9337	0.9337	2.0000e-005	0.0000	0.9341
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	3.7000e-003	4.7000e-003	0.0473	8.0000e-005	6.9500e-003	6.0000e-005	7.0100e-003	1.8500e-003	5.0000e-005	1.9000e-003	0.0000	6.4701	6.4701	3.8000e-004	0.0000	6.4780
Total	**8.9100e-003**	**0.0133**	**0.1187**	**9.0000e-005**	**7.0600e-003**	**1.2000e-004**	**7.1800e-003**	**1.8800e-003**	**1.1000e-004**	**1.9900e-003**	**0.0000**	**7.4038**	**7.4038**	**4.0000e-004**	**0.0000**	**7.4121**

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					7.1000e-003	0.0000	7.1000e-003	3.8900e-003	0.0000	3.8900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1318	1.2971	0.8293	1.2900e-003		0.0846	0.0846		0.0785	0.0785	0.0000	120.7136	120.7136	0.0334	0.0000	121.4148
Total	**0.1318**	**1.2971**	**0.8293**	**1.2900e-003**	**7.1000e-003**	**0.0846**	**0.0917**	**3.8900e-003**	**0.0785**	**0.0824**	**0.0000**	**120.7136**	**120.7136**	**0.0334**	**0.0000**	**121.4148**

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	5.2100e-003	8.6200e-003	0.0714	1.0000e-005	1.1000e-004	6.0000e-005	1.7000e-004	3.0000e-005	6.0000e-005	9.0000e-005	0.0000	0.9337	0.9337	2.0000e-005	0.0000	0.9341
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	3.7000e-003	4.7000e-003	0.0473	8.0000e-005	6.9500e-003	6.0000e-005	7.0100e-003	1.8500e-003	5.0000e-005	1.9000e-003	0.0000	6.4701	6.4701	3.8000e-004	0.0000	6.4780
Total	**8.9100e-003**	**0.0133**	**0.1187**	**9.0000e-005**	**7.0600e-003**	**1.2000e-004**	**7.1800e-003**	**1.8800e-003**	**1.1000e-004**	**1.9900e-003**	**0.0000**	**7.4038**	**7.4038**	**4.0000e-004**	**0.0000**	**7.4121**

3.4 Building Construction - 2015

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	0.0637	0.6415	0.3884	6.4000e-004		0.0414	0.0414		0.0382	0.0382	0.0000	59.6170	59.6170	0.0172	0.0000	59.9785
Total	**0.0637**	**0.6415**	**0.3884**	**6.4000e-004**		**0.0414**	**0.0414**		**0.0382**	**0.0382**	**0.0000**	**59.6170**	**59.6170**	**0.0172**	**0.0000**	**59.9785**

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	5.4000e-004	3.6200e-003	5.7700e-003	1.0000e-005	2.1000e-004	6.0000e-005	2.8000e-004	6.0000e-005	6.0000e-005	1.2000e-004	0.0000	0.7286	0.7286	1.0000e-005	0.0000	0.7287
Worker	4.2000e-004	5.4000e-004	5.4000e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7389	0.7389	4.0000e-005	0.0000	0.7398
Total	**9.6000e-004**	**4.1600e-003**	**0.0112**	**2.0000e-005**	**1.0000e-003**	**7.0000e-005**	**1.0800e-003**	**2.7000e-004**	**7.0000e-005**	**3.4000e-004**	**0.0000**	**1.4675**	**1.4675**	**5.0000e-005**	**0.0000**	**1.4686**

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	0.0637	0.6415	0.3884	6.4000e-004		0.0414	0.0414		0.0382	0.0382	0.0000	59.6169	59.6169	0.0172	0.0000	59.9784
Total	**0.0637**	**0.6415**	**0.3884**	**6.4000e-004**		**0.0414**	**0.0414**		**0.0382**	**0.0382**	**0.0000**	**59.6169**	**59.6169**	**0.0172**	**0.0000**	**59.9784**

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	5.4000e-004	3.6200e-003	5.7700e-003	1.0000e-005	2.1000e-004	6.0000e-005	2.8000e-004	6.0000e-005	6.0000e-005	1.2000e-004	0.0000	0.7286	0.7286	1.0000e-005	0.0000	0.7287
Worker	4.2000e-004	5.4000e-004	5.4000e-003	1.0000e-005	7.9000e-004	1.0000e-005	8.0000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7389	0.7389	4.0000e-005	0.0000	0.7398
Total	**9.6000e-004**	**4.1600e-003**	**0.0112**	**2.0000e-005**	**1.0000e-003**	**7.0000e-005**	**1.0800e-003**	**2.7000e-004**	**7.0000e-005**	**3.4000e-004**	**0.0000**	**1.4675**	**1.4675**	**5.0000e-005**	**0.0000**	**1.4686**

3.5 Paving - 2015

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	3.2600e-003	0.0314	0.0192	3.0000e-005		2.0400e-003	2.0400e-003		1.8800e-003	1.8800e-003	0.0000	2.7736	2.7736	7.8000e-004	0.0000	2.7901
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2600e-003**	**0.0314**	**0.0192**	**3.0000e-005**		**2.0400e-003**	**2.0400e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**2.7736**	**2.7736**	**7.8000e-004**	**0.0000**	**2.7901**

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	1.6000e-004	2.0000e-004	2.0400e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2794	0.2794	2.0000e-005	0.0000	0.2797
Total	**1.6000e-004**	**2.0000e-004**	**2.0400e-003**	**0.0000**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2794**	**0.2794**	**2.0000e-005**	**0.0000**	**0.2797**

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	3.2600e-003	0.0314	0.0192	3.0000e-005		2.0400e-003	2.0400e-003		1.8800e-003	1.8800e-003	0.0000	2.7736	2.7736	7.8000e-004	0.0000	2.7901
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.2600e-003**	**0.0314**	**0.0192**	**3.0000e-005**		**2.0400e-003**	**2.0400e-003**		**1.8800e-003**	**1.8800e-003**	**0.0000**	**2.7736**	**2.7736**	**7.8000e-004**	**0.0000**	**2.7901**

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	1.6000e-004	2.0000e-004	2.0400e-003	0.0000	3.0000e-004	0.0000	3.0000e-004	8.0000e-005	0.0000	8.0000e-005	0.0000	0.2794	0.2794	2.0000e-005	0.0000	0.2797
Total	**1.6000e-004**	**2.0000e-004**	**2.0400e-003**	**0.0000**	**3.0000e-004**	**0.0000**	**3.0000e-004**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2794**	**0.2794**	**2.0000e-005**	**0.0000**	**0.2797**

3.6 Demolition 2 - 2015

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	0.0126	0.1194	0.0771	1.1000e-004		7.8200e-003	7.8200e-003		7.3500e-003	7.3500e-003	0.0000	10.3856	10.3856	2.5800e-003	0.0000	10.4398
Total	**0.0126**	**0.1194**	**0.0771**	**1.1000e-004**		**7.8200e-003**	**7.8200e-003**		**7.3500e-003**	**7.3500e-003**	**0.0000**	**10.3856**	**10.3856**	**2.5800e-003**	**0.0000**	**10.4398**

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	4.0000e-005	2.7000e-004	4.3000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0544	0.0544	0.0000	0.0000	0.0544
Worker	1.8900e-003	2.4000e-003	0.0242	4.0000e-005	0.0128	3.0000e-005	0.0128	3.2100e-003	3.0000e-005	3.2300e-003	0.0000	3.3086	3.3086	1.9000e-004	0.0000	3.3126
Total	**1.9300e-003**	**2.6700e-003**	**0.0246**	**4.0000e-005**	**0.0128**	**3.0000e-005**	**0.0129**	**3.2200e-003**	**3.0000e-005**	**3.2500e-003**	**0.0000**	**3.3629**	**3.3629**	**1.9000e-004**	**0.0000**	**3.3670**

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	0.0126	0.1194	0.0771	1.1000e-004		7.8200e-003	7.8200e-003		7.3500e-003	7.3500e-003	0.0000	10.3855	10.3855	2.5800e-003	0.0000	10.4398
Total	**0.0126**	**0.1194**	**0.0771**	**1.1000e-004**		**7.8200e-003**	**7.8200e-003**		**7.3500e-003**	**7.3500e-003**	**0.0000**	**10.3855**	**10.3855**	**2.5800e-003**	**0.0000**	**10.4398**

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	4.0000e-005	2.7000e-004	4.3000e-004	0.0000	5.0000e-005	0.0000	6.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.0544	0.0544	0.0000	0.0000	0.0544
Worker	1.8900e-003	2.4000e-003	0.0242	4.0000e-005	0.0128	3.0000e-005	0.0128	3.2100e-003	3.0000e-005	3.2300e-003	0.0000	3.3086	3.3086	1.9000e-004	0.0000	3.3126
Total	**1.9300e-003**	**2.6700e-003**	**0.0246**	**4.0000e-005**	**0.0128**	**3.0000e-005**	**0.0129**	**3.2200e-003**	**3.0000e-005**	**3.2500e-003**	**0.0000**	**3.3629**	**3.3629**	**1.9000e-004**	**0.0000**	**3.3670**

3.7 Grading 2 - 2015

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					0.0166	0.0000	0.0166	9.1100e-003	0.0000	9.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1346	1.2465	0.7776	1.0900e-003		0.0881	0.0881		0.0818	0.0818	0.0000	101.3403	101.3403	0.0276	0.0000	101.9201
Total	**0.1346**	**1.2465**	**0.7776**	**1.0900e-003**	**0.0166**	**0.0881**	**0.1047**	**9.1100e-003**	**0.0818**	**0.0909**	**0.0000**	**101.3403**	**101.3403**	**0.0276**	**0.0000**	**101.9201**

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	3.4000e-003	0.0369	0.0365	9.0000e-005	2.0000e-003	5.8000e-004	2.5800e-003	5.5000e-004	5.4000e-004	1.0900e-003	0.0000	8.1481	8.1481	6.0000e-005	0.0000	8.1495
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	3.7000e-003	4.7000e-003	0.0473	8.0000e-005	6.9500e-003	6.0000e-005	7.0100e-003	1.8500e-003	5.0000e-005	1.9000e-003	0.0000	6.4701	6.4701	3.8000e-004	0.0000	6.4780
Total	**7.1000e-003**	**0.0416**	**0.0838**	**1.7000e-004**	**8.9500e-003**	**6.4000e-004**	**9.5900e-003**	**2.4000e-003**	**5.9000e-004**	**2.9900e-003**	**0.0000**	**14.6182**	**14.6182**	**4.4000e-004**	**0.0000**	**14.6275**

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					7.1000e-003	0.0000	7.1000e-003	3.8900e-003	0.0000	3.8900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1346	1.2465	0.7776	1.0900e-003		0.0881	0.0881		0.0818	0.0818	0.0000	101.3402	101.3402	0.0276	0.0000	101.9200
Total	**0.1346**	**1.2465**	**0.7776**	**1.0900e-003**	**7.1000e-003**	**0.0881**	**0.0952**	**3.8900e-003**	**0.0818**	**0.0857**	**0.0000**	**101.3402**	**101.3402**	**0.0276**	**0.0000**	**101.9200**

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	3.4000e-003	0.0369	0.0365	9.0000e-005	2.0000e-003	5.8000e-004	2.5800e-003	5.5000e-004	5.4000e-004	1.0900e-003	0.0000	8.1481	8.1481	6.0000e-005	0.0000	8.1495
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	3.7000e-003	4.7000e-003	0.0473	8.0000e-005	6.9500e-003	6.0000e-005	7.0100e-003	1.8500e-003	5.0000e-005	1.9000e-003	0.0000	6.4701	6.4701	3.8000e-004	0.0000	6.4780
Total	**7.1000e-003**	**0.0416**	**0.0838**	**1.7000e-004**	**8.9500e-003**	**6.4000e-004**	**9.5900e-003**	**2.4000e-003**	**5.9000e-004**	**2.9900e-003**	**0.0000**	**14.6182**	**14.6182**	**4.4000e-004**	**0.0000**	**14.6275**

3.8 Building Construction 2 - 2015

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	7.6000e-003	0.0766	0.0464	8.0000e-005		4.9400e-003	4.9400e-003		4.5600e-003	4.5600e-003	0.0000	7.1184	7.1184	2.0600e-003	0.0000	7.1616
Total	**7.6000e-003**	**0.0766**	**0.0464**	**8.0000e-005**		**4.9400e-003**	**4.9400e-003**		**4.5600e-003**	**4.5600e-003**	**0.0000**	**7.1184**	**7.1184**	**2.0600e-003**	**0.0000**	**7.1616**

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	6.0000e-005	4.3000e-004	6.9000e-004	0.0000	3.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.0870	0.0870	0.0000	0.0000	0.0870
Worker	5.0000e-005	6.0000e-005	6.4000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0882	0.0882	1.0000e-005	0.0000	0.0883
Total	**1.1000e-004**	**4.9000e-004**	**1.3300e-003**	**0.0000**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**4.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.1752**	**0.1752**	**1.0000e-005**	**0.0000**	**0.1754**

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	7.6000e-003	0.0766	0.0464	8.0000e-005		4.9400e-003	4.9400e-003		4.5600e-003	4.5600e-003	0.0000	7.1184	7.1184	2.0600e-003	0.0000	7.1616
Total	**7.6000e-003**	**0.0766**	**0.0464**	**8.0000e-005**		**4.9400e-003**	**4.9400e-003**		**4.5600e-003**	**4.5600e-003**	**0.0000**	**7.1184**	**7.1184**	**2.0600e-003**	**0.0000**	**7.1616**

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	6.0000e-005	4.3000e-004	6.9000e-004	0.0000	3.0000e-005	1.0000e-005	3.0000e-005	1.0000e-005	1.0000e-005	1.0000e-005	0.0000	0.0870	0.0870	0.0000	0.0000	0.0870
Worker	5.0000e-005	6.0000e-005	6.4000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0882	0.0882	1.0000e-005	0.0000	0.0883
Total	**1.1000e-004**	**4.9000e-004**	**1.3300e-003**	**0.0000**	**1.2000e-004**	**1.0000e-005**	**1.3000e-004**	**4.0000e-005**	**1.0000e-005**	**4.0000e-005**	**0.0000**	**0.1752**	**0.1752**	**1.0000e-005**	**0.0000**	**0.1754**

3.8 Building Construction 2 - 2016

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	0.0517	0.5153	0.3324	5.5000e-004		0.0331	0.0331		0.0305	0.0305	0.0000	51.1138	51.1138	0.0149	0.0000	51.4268
Total	**0.0517**	**0.5153**	**0.3324**	**5.5000e-004**		**0.0331**	**0.0331**		**0.0305**	**0.0305**	**0.0000**	**51.1138**	**51.1138**	**0.0149**	**0.0000**	**51.4268**

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	4.0000e-004	2.7300e-003	4.5200e-003	1.0000e-005	1.9000e-004	4.0000e-005	2.3000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6229	0.6229	0.0000	0.0000	0.6230
Worker	3.2000e-004	4.1000e-004	4.1400e-003	1.0000e-005	6.9000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6175	0.6175	3.0000e-005	0.0000	0.6182
Total	**7.2000e-004**	**3.1400e-003**	**8.6600e-003**	**2.0000e-005**	**8.8000e-004**	**5.0000e-005**	**9.2000e-004**	**2.3000e-004**	**4.0000e-005**	**2.8000e-004**	**0.0000**	**1.2404**	**1.2404**	**3.0000e-005**	**0.0000**	**1.2412**

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	0.0517	0.5153	0.3324	5.5000e-004		0.0331	0.0331		0.0305	0.0305	0.0000	51.1138	51.1138	0.0149	0.0000	51.4268
Total	**0.0517**	**0.5153**	**0.3324**	**5.5000e-004**		**0.0331**	**0.0331**		**0.0305**	**0.0305**	**0.0000**	**51.1138**	**51.1138**	**0.0149**	**0.0000**	**51.4268**

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	4.0000e-004	2.7300e-003	4.5200e-003	1.0000e-005	1.9000e-004	4.0000e-005	2.3000e-004	5.0000e-005	4.0000e-005	9.0000e-005	0.0000	0.6229	0.6229	0.0000	0.0000	0.6230
Worker	3.2000e-004	4.1000e-004	4.1400e-003	1.0000e-005	6.9000e-004	1.0000e-005	6.9000e-004	1.8000e-004	0.0000	1.9000e-004	0.0000	0.6175	0.6175	3.0000e-005	0.0000	0.6182
Total	**7.2000e-004**	**3.1400e-003**	**8.6600e-003**	**2.0000e-005**	**8.8000e-004**	**5.0000e-005**	**9.2000e-004**	**2.3000e-004**	**4.0000e-005**	**2.8000e-004**	**0.0000**	**1.2404**	**1.2404**	**3.0000e-005**	**0.0000**	**1.2412**

3.9 Paving 2 - 2015

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	8.1300e-003	0.0784	0.0480	8.0000e-005		5.0900e-003	5.0900e-003		4.7000e-003	4.7000e-003	0.0000	6.9338	6.9338	1.9600e-003	0.0000	6.9749
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.1300e-003**	**0.0784**	**0.0480**	**8.0000e-005**		**5.0900e-003**	**5.0900e-003**		**4.7000e-003**	**4.7000e-003**	**0.0000**	**6.9338**	**6.9338**	**1.9600e-003**	**0.0000**	**6.9749**

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	4.0000e-004	5.1000e-004	5.1000e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.6000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6985	0.6985	4.0000e-005	0.0000	0.6993
Total	**4.0000e-004**	**5.1000e-004**	**5.1000e-003**	**1.0000e-005**	**7.5000e-004**	**1.0000e-005**	**7.6000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.6985**	**0.6985**	**4.0000e-005**	**0.0000**	**0.6993**

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	8.1300e-003	0.0784	0.0480	8.0000e-005		5.0900e-003	5.0900e-003		4.7000e-003	4.7000e-003	0.0000	6.9338	6.9338	1.9600e-003	0.0000	6.9749
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.1300e-003**	**0.0784**	**0.0480**	**8.0000e-005**		**5.0900e-003**	**5.0900e-003**		**4.7000e-003**	**4.7000e-003**	**0.0000**	**6.9338**	**6.9338**	**1.9600e-003**	**0.0000**	**6.9749**

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	4.0000e-004	5.1000e-004	5.1000e-003	1.0000e-005	7.5000e-004	1.0000e-005	7.6000e-004	2.0000e-004	1.0000e-005	2.1000e-004	0.0000	0.6985	0.6985	4.0000e-005	0.0000	0.6993
Total	**4.0000e-004**	**5.1000e-004**	**5.1000e-003**	**1.0000e-005**	**7.5000e-004**	**1.0000e-005**	**7.6000e-004**	**2.0000e-004**	**1.0000e-005**	**2.1000e-004**	**0.0000**	**0.6985**	**0.6985**	**4.0000e-005**	**0.0000**	**0.6993**

3.10 Architectural Coating - 2016

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	0.0898					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-004	5.9300e-003	4.7100e-003	1.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6399
Total	**0.0907**	**5.9300e-003**	**4.7100e-003**	**1.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6399**

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	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0177	0.0177	0.0000	0.0000	0.0178
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0177**	**0.0177**	**0.0000**	**0.0000**	**0.0178**

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	0.0898					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2000e-004	5.9300e-003	4.7100e-003	1.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	0.6383	0.6383	8.0000e-005	0.0000	0.6399
Total	**0.0907**	**5.9300e-003**	**4.7100e-003**	**1.0000e-005**		**4.9000e-004**	**4.9000e-004**		**4.9000e-004**	**4.9000e-004**	**0.0000**	**0.6383**	**0.6383**	**8.0000e-005**	**0.0000**	**0.6399**

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	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0177	0.0177	0.0000	0.0000	0.0178
Total	**1.0000e-005**	**1.0000e-005**	**1.2000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0177**	**0.0177**	**0.0000**	**0.0000**	**0.0178**

Industrial Avenue Bridge Replacement Project

Sacramento Valley Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.00		0.00	7,749.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	2			**Operational Year**	2016
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	793.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 126'L, 60'W (including 1.5' railings) = 7,749SF

Construction Phase - Anticipated Construction Schedule

Off-road Equipment - Proposed Construction Equipment
3 Dump Trucks

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment
1 Striping Truck

Off-road Equipment - Proposed Construction Equipment
3 Dump Trucks

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment
1 Striping Truck

Off-road Equipment -

Grading - Acres disturbed split amont 2 grading phases
Grading: 6,300CY Cut and Fill
Grading 2: 2,400CY Import

Demolition -

Trips and VMT - Grading Hauling Distance = 0.4 to reflect distance across the project site.

Construction Off-road Equipment Mitigation - Mitigation per PCAPCD Rule 228

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	67.00
tblConstructionPhase	NumDays	0.00	66.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	44.00
tblConstructionPhase	NumDays	0.00	44.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	PhaseEndDate	1/4/2016	3/29/2016
tblConstructionPhase	PhaseEndDate	3/29/2016	12/28/2015
tblConstructionPhase	PhaseStartDate	12/29/2015	3/23/2016
tblConstructionPhase	PhaseStartDate	3/23/2016	12/22/2015
tblGrading	AcresOfGrading	22.00	0.09
tblGrading	AcresOfGrading	22.00	0.09
tblGrading	MaterialExported	0.00	6,300.00
tblGrading	MaterialImported	0.00	2,400.00
tblOffRoadEquipment	HorsePower	171.00	9.00
tblOffRoadEquipment	HorsePower	171.00	9.00
tblOffRoadEquipment	HorsePower	162.00	81.00

tblOffRoadEquipment	HorsePower	174.00	81.00
tblOffRoadEquipment	HorsePower	205.00	226.00
tblOffRoadEquipment	HorsePower	205.00	226.00
tblOffRoadEquipment	HorsePower	226.00	89.00
tblOffRoadEquipment	HorsePower	226.00	89.00
tblOffRoadEquipment	HorsePower	226.00	255.00
tblOffRoadEquipment	HorsePower	64.00	255.00
tblOffRoadEquipment	HorsePower	174.00	255.00
tblOffRoadEquipment	HorsePower	100.00	97.00
tblOffRoadEquipment	HorsePower	100.00	97.00
tblOffRoadEquipment	HorsePower	162.00	97.00
tblOffRoadEquipment	HorsePower	80.00	97.00
tblOffRoadEquipment	HorsePower	80.00	97.00
tblOffRoadEquipment	HorsePower	199.00	97.00
tblOffRoadEquipment	HorsePower	199.00	97.00
tblOffRoadEquipment	HorsePower	162.00	78.00
tblOffRoadEquipment	HorsePower	162.00	9.00
tblOffRoadEquipment	HorsePower	171.00	89.00
tblOffRoadEquipment	HorsePower	100.00	174.00
tblOffRoadEquipment	HorsePower	199.00	125.00
tblOffRoadEquipment	HorsePower	6.00	80.00
tblOffRoadEquipment	LoadFactor	0.42	0.56
tblOffRoadEquipment	LoadFactor	0.42	0.56
tblOffRoadEquipment	LoadFactor	0.38	0.73
tblOffRoadEquipment	LoadFactor	0.41	0.73
tblOffRoadEquipment	LoadFactor	0.50	0.29
tblOffRoadEquipment	LoadFactor	0.50	0.29
tblOffRoadEquipment	LoadFactor	0.29	0.20
tblOffRoadEquipment	LoadFactor	0.29	0.20
tblOffRoadEquipment	LoadFactor	0.29	0.40

tblOffRoadEquipment	LoadFactor	0.37	0.40
tblOffRoadEquipment	LoadFactor	0.41	0.40
tblOffRoadEquipment	LoadFactor	0.40	0.37
tblOffRoadEquipment	LoadFactor	0.40	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.48
tblOffRoadEquipment	LoadFactor	0.38	0.56
tblOffRoadEquipment	LoadFactor	0.42	0.20
tblOffRoadEquipment	LoadFactor	0.40	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.42
tblOffRoadEquipment	LoadFactor	0.82	0.38
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders

tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Air Compressors	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes

tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	0.40
tblTripsAndVMT	VendorTripNumber	0.00	1.00

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					
2015	7.3786	76.2582	51.3276	0.0759	5.3550	4.3241	8.4948	1.3440	4.0114	4.3837	0.0000	7,757.5988	7,757.5988	1.9450	0.0000	7,798.4435
2016	36.2913	17.8812	11.8074	0.0197	0.0313	1.1415	1.1728	8.4300e-003	1.0524	1.0609	0.0000	1,989.2439	1,989.2439	0.5680	0.0000	2,001.1721
Total	**43.6698**	**94.1394**	**63.1350**	**0.0955**	**5.3863**	**5.4656**	**9.6676**	**1.3524**	**5.0638**	**5.4445**	**0.0000**	**9,746.8426**	**9,746.8426**	**2.5130**	**0.0000**	**9,799.6156**

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					
2015	7.3786	76.2582	51.3276	0.0759	5.3550	4.3241	8.4948	1.3440	4.0114	4.2953	0.0000	7,757.5988	7,757.5988	1.9450	0.0000	7,798.4435
2016	36.2913	17.8812	11.8074	0.0197	0.0313	1.1415	1.1728	8.4300e-003	1.0524	1.0609	0.0000	1,989.2439	1,989.2439	0.5680	0.0000	2,001.1721
Total	**43.6698**	**94.1394**	**63.1350**	**0.0955**	**5.3863**	**5.4656**	**9.6676**	**1.3524**	**5.0638**	**5.3561**	**0.0000**	**9,746.8426**	**9,746.8426**	**2.5130**	**0.0000**	**9,799.6155**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.2150	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Total	**0.2150**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.2150	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Total	**0.2150**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	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	N20	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2015	5/7/2015	5	5	
2	Grading	Grading	5/8/2015	7/8/2015	5	44	
3	Building Construction	Building Construction	7/9/2015	10/9/2015	5	67	
4	Paving	Paving	10/10/2015	10/13/2015	5	2	
5	Demolition 2	Demolition	10/14/2015	10/20/2015	5	5	
6	Grading 2	Grading	10/21/2015	12/21/2015	5	44	
7	Building Construction 2	Building Construction	12/22/2015	3/22/2016	5	66	
8	Paving 2	Paving	12/22/2015	12/28/2015	5	5	
9	Architectural Coating	Architectural Coating	3/23/2016	3/29/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.088

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,624; Non-Residential Outdoor: 3,875 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction 2	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving 2	Signal Boards	2	8.00	6	0.82
Paving 2	Surfacing Equipment	1	8.00	253	0.30
Paving 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving 2	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading 2	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20

Building Construction 2	Forklifts	2	6.00	89	0.20
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition 2	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading 2	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	1	7.00	255	0.40
Demolition	Excavators	3	8.00	97	0.37
Grading	Excavators	3	8.00	81	0.73
Grading	Graders	1	8.00	255	0.40
Grading	Rollers	2	7.00	97	0.37
Building Construction	Bore/Drill Rigs	1	8.00	226	0.29
Building Construction	Cranes	1	7.00	89	0.20
Building Construction	Rough Terrain Forklifts	1	8.00	97	0.37
Paving	Other Construction Equipment	1	8.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	2	7.00	80	0.38
Paving	Rubber Tired Loaders	1	8.00	97	0.37
Demolition 2	Excavators	3	8.00	9	0.56
Demolition 2	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition 2	Cranes	1	7.00	226	0.29
Demolition 2	Other Construction Equipment	3	8.00	89	0.20
Demolition 2	Rough Terrain Forklifts	1	8.00	174	0.41
Demolition 2	Rubber Tired Loaders	1	8.00	125	0.42
Demolition 2	Signal Boards	2	8.00	80	0.38
Demolition 2	Skid Steer Loaders	1	8.00	255	0.40
Demolition 2	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Grading 2	Rubber Tired Loaders	1	8.00	199	0.36
Grading 2	Signal Boards	2	8.00	6	0.82
Grading 2	Skid Steer Loaders	1	8.00	64	0.37

Grading 2	Excavators	3	8.00	78	0.48
Grading 2	Graders	1	8.00	81	0.73
Grading 2	Rollers	2	7.00	97	0.37
Building Construction 2	Bore/Drill Rigs	1	8.00	226	0.29
Building Construction 2	Cranes	1	7.00	89	0.20
Building Construction 2	Rough Terrain Forklifts	1	8.00	97	0.37
Paving 2	Other Construction Equipment	1	8.00	9	0.56
Paving 2	Pavers	1	7.00	125	0.42
Paving 2	Rollers	2	7.00	80	0.38
Paving 2	Rubber Tired Loaders	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Rough Terrain Forklifts	1	8.00	100	0.40
Demolition	Rubber Tired Loaders	1	8.00	199	0.36
Demolition	Signal Boards	2	8.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	64	0.37
Demolition	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Demolition	Other Construction Equipment	3	8.00	171	0.42
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Signal Boards	2	8.00	6	0.82
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Signal Boards	2	8.00	6	0.82
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading 2	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction 2	Signal Boards	2	8.00	6	0.82

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	18	45.00	0.00	35.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	16	40.00	0.00	623.00	10.80	7.30	0.40	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	15	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	16	40.00	0.00	237.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	3.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	15	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2015

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					1.5905	0.0000	1.5905	0.2408	0.0000	0.2408			0.0000			0.0000
Off-Road	6.9486	73.7664	46.2129	0.0665		4.2866	4.2866		3.9769	3.9769		6,873.4724	6,873.4724	1.9195		6,913.7818
Total	**6.9486**	**73.7664**	**46.2129**	**0.0665**	**1.5905**	**4.2866**	**5.8771**	**0.2408**	**3.9769**	**4.2177**		**6,873.4724**	**6,873.4724**	**1.9195**		**6,913.7818**

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	0.2316	2.2228	2.5933	5.2200e-003	0.1221	0.0346	0.1567	0.0335	0.0318	0.0652		529.8454	529.8454	4.1800e-003		529.9332
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	0.1984	0.2690	2.5214	4.1600e-003	0.3697	2.9200e-003	0.3726	0.0981	2.6600e-003	0.1007		354.2809	354.2809	0.0213		354.7285
Total	**0.4300**	**2.4918**	**5.1148**	**9.3800e-003**	**0.4918**	**0.0375**	**0.5293**	**0.1315**	**0.0344**	**0.1659**		**884.1263**	**884.1263**	**0.0255**		**884.6617**

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					0.6799	0.0000	0.6799	0.1030	0.0000	0.1030			0.0000			0.0000
Off-Road	6.9486	73.7664	46.2129	0.0665		4.2866	4.2866		3.9769	3.9769	0.0000	6,873.4724	6,873.4724	1.9195		6,913.7818
Total	**6.9486**	**73.7664**	**46.2129**	**0.0665**	**0.6799**	**4.2866**	**4.9665**	**0.1030**	**3.9769**	**4.0799**	**0.0000**	**6,873.4724**	**6,873.4724**	**1.9195**		**6,913.7818**

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	0.2316	2.2228	2.5933	5.2200e-003	0.1221	0.0346	0.1567	0.0335	0.0318	0.0652		529.8454	529.8454	4.1800e-003		529.9332
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	0.1984	0.2690	2.5214	4.1600e-003	0.3697	2.9200e-003	0.3726	0.0981	2.6600e-003	0.1007		354.2809	354.2809	0.0213		354.7285
Total	**0.4300**	**2.4918**	**5.1148**	**9.3800e-003**	**0.4918**	**0.0375**	**0.5293**	**0.1315**	**0.0344**	**0.1659**		**884.1263**	**884.1263**	**0.0255**		**884.6617**

3.3 Grading - 2015

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					0.7549	0.0000	0.7549	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	5.9928	58.9601	37.6965	0.0587		3.8435	3.8435		3.5693	3.5693		6,048.3677	6,048.3677	1.6732		6,083.5042
Total	**5.9928**	**58.9601**	**37.6965**	**0.0587**	**0.7549**	**3.8435**	**4.5984**	**0.4140**	**3.5693**	**3.9833**		**6,048.3677**	**6,048.3677**	**1.6732**		**6,083.5042**

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	0.2991	0.3967	4.1229	5.1000e-004	5.2300e-003	2.9400e-003	8.1700e-003	1.4600e-003	2.6500e-003	4.1100e-003		45.3209	45.3209	1.0100e-003		45.3421
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	0.1763	0.2391	2.2413	3.6900e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		314.9164	314.9164	0.0190		315.3142
Total	**0.4754**	**0.6358**	**6.3641**	**4.2000e-003**	**0.3338**	**5.5400e-003**	**0.3394**	**0.0886**	**5.0200e-003**	**0.0936**		**360.2373**	**360.2373**	**0.0200**		**360.6564**

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					0.3227	0.0000	0.3227	0.1770	0.0000	0.1770			0.0000			0.0000
Off-Road	5.9928	58.9601	37.6965	0.0587		3.8435	3.8435		3.5693	3.5693	0.0000	6,048.3677	6,048.3677	1.6732		6,083.5042
Total	**5.9928**	**58.9601**	**37.6965**	**0.0587**	**0.3227**	**3.8435**	**4.1662**	**0.1770**	**3.5693**	**3.7463**	**0.0000**	**6,048.3677**	**6,048.3677**	**1.6732**		**6,083.5042**

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	0.2991	0.3967	4.1229	5.1000e-004	5.2300e-003	2.9400e-003	8.1700e-003	1.4600e-003	2.6500e-003	4.1100e-003		45.3209	45.3209	1.0100e-003		45.3421
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	0.1763	0.2391	2.2413	3.6900e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		314.9164	314.9164	0.0190		315.3142
Total	**0.4754**	**0.6358**	**6.3641**	**4.2000e-003**	**0.3338**	**5.5400e-003**	**0.3394**	**0.0886**	**5.0200e-003**	**0.0936**		**360.2373**	**360.2373**	**0.0200**		**360.6564**

3.4 Building Construction - 2015

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393		1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**		**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0191	0.1100	0.2148	2.4000e-004	6.6300e-003	1.8400e-003	8.4700e-003	1.8900e-003	1.6900e-003	3.5800e-003		23.8682	23.8682	2.1000e-004		23.8726
Worker	0.0132	0.0179	0.1681	2.8000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		23.6187	23.6187	1.4200e-003		23.6486
Total	**0.0323**	**0.1279**	**0.3829**	**5.2000e-004**	**0.0313**	**2.0300e-003**	**0.0333**	**8.4300e-003**	**1.8700e-003**	**0.0103**		**47.4870**	**47.4870**	**1.6300e-003**		**47.5212**

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393	0.0000	1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**	**0.0000**	**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0191	0.1100	0.2148	2.4000e-004	6.6300e-003	1.8400e-003	8.4700e-003	1.8900e-003	1.6900e-003	3.5800e-003		23.8682	23.8682	2.1000e-004		23.8726
Worker	0.0132	0.0179	0.1681	2.8000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		23.6187	23.6187	1.4200e-003		23.6486
Total	**0.0323**	**0.1279**	**0.3829**	**5.2000e-004**	**0.0313**	**2.0300e-003**	**0.0333**	**8.4300e-003**	**1.8700e-003**	**0.0103**		**47.4870**	**47.4870**	**1.6300e-003**		**47.5212**

3.5 Paving - 2015

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	3.2555	31.3641	19.2279	0.0303		2.0397	2.0397		1.8824	1.8824		3,057.3587	3,057.3587	0.8640		3,075.5034
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2555**	**31.3641**	**19.2279**	**0.0303**		**2.0397**	**2.0397**		**1.8824**	**1.8824**		**3,057.3587**	**3,057.3587**	**0.8640**		**3,075.5034**

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	0.1675	0.2271	2.1292	3.5100e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		299.1706	299.1706	0.0180		299.5485
Total	**0.1675**	**0.2271**	**2.1292**	**3.5100e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**299.1706**	**299.1706**	**0.0180**		**299.5485**

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	3.2555	31.3641	19.2279	0.0303		2.0397	2.0397		1.8824	1.8824	0.0000	3,057.3587	3,057.3587	0.8640		3,075.5034
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2555**	**31.3641**	**19.2279**	**0.0303**		**2.0397**	**2.0397**		**1.8824**	**1.8824**	**0.0000**	**3,057.3587**	**3,057.3587**	**0.8640**		**3,075.5034**

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	0.1675	0.2271	2.1292	3.5100e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		299.1706	299.1706	0.0180		299.5485
Total	**0.1675**	**0.2271**	**2.1292**	**3.5100e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**299.1706**	**299.1706**	**0.0180**		**299.5485**

3.6 Demolition 2 - 2015

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	5.0236	47.7571	30.8428	0.0448		3.1262	3.1262		2.9390	2.9390		4,579.2436	4,579.2436	1.1383		4,603.1485
Total	**5.0236**	**47.7571**	**30.8428**	**0.0448**		**3.1262**	**3.1262**		**2.9390**	**2.9390**		**4,579.2436**	**4,579.2436**	**1.1383**		**4,603.1485**

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	0.0191	0.1100	0.2148	2.4000e-004	0.0211	1.8400e-003	0.0230	5.4400e-003	1.6900e-003	7.1400e-003		23.8682	23.8682	2.1000e-004		23.8726
Worker	0.7934	1.0759	10.0858	0.0166	5.3339	0.0117	5.3456	1.3385	0.0107	1.3492		1,417.1237	1,417.1237	0.0853		1,418.9140
Total	**0.8125**	**1.1859**	**10.3006**	**0.0169**	**5.3550**	**0.0135**	**5.3686**	**1.3439**	**0.0124**	**1.3563**		**1,440.9919**	**1,440.9919**	**0.0855**		**1,442.7867**

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	5.0236	47.7570	30.8428	0.0448		3.1262	3.1262		2.9390	2.9390	0.0000	4,579.2436	4,579.2436	1.1383		4,603.1485
Total	**5.0236**	**47.7570**	**30.8428**	**0.0448**		**3.1262**	**3.1262**		**2.9390**	**2.9390**	**0.0000**	**4,579.2436**	**4,579.2436**	**1.1383**		**4,603.1485**

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	0.0191	0.1100	0.2148	2.4000e-004	0.0211	1.8400e-003	0.0230	5.4400e-003	1.6900e-003	7.1400e-003		23.8682	23.8682	2.1000e-004		23.8726
Worker	0.7934	1.0759	10.0858	0.0166	5.3339	0.0117	5.3456	1.3385	0.0107	1.3492		1,417.1237	1,417.1237	0.0853		1,418.9140
Total	**0.8125**	**1.1859**	**10.3006**	**0.0169**	**5.3550**	**0.0135**	**5.3686**	**1.3439**	**0.0124**	**1.3563**		**1,440.9919**	**1,440.9919**	**0.0855**		**1,442.7867**

3.7 Grading 2 - 2015

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					0.7549	0.0000	0.7549	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	6.1165	56.6609	35.3456	0.0494		4.0035	4.0035		3.7165	3.7165		5,077.6613	5,077.6613	1.3834		5,106.7120
Total	**6.1165**	**56.6609**	**35.3456**	**0.0494**	**0.7549**	**4.0035**	**4.7583**	**0.4140**	**3.7165**	**4.1305**		**5,077.6613**	**5,077.6613**	**1.3834**		**5,106.7120**

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	0.1782	1.7104	1.9955	4.0200e-003	0.0940	0.0266	0.1206	0.0257	0.0245	0.0502		407.7057	407.7057	3.2200e-003		407.7732
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	0.1763	0.2391	2.2413	3.6900e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		314.9164	314.9164	0.0190		315.3142
Total	**0.3546**	**1.9495**	**4.2368**	**7.7100e-003**	**0.4226**	**0.0292**	**0.4518**	**0.1129**	**0.0268**	**0.1397**		**722.6221**	**722.6221**	**0.0222**		**723.0875**

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					0.3227	0.0000	0.3227	0.1770	0.0000	0.1770			0.0000			0.0000
Off-Road	6.1165	56.6609	35.3456	0.0494		4.0035	4.0035		3.7165	3.7165	0.0000	5,077.6613	5,077.6613	1.3834		5,106.7120
Total	**6.1165**	**56.6609**	**35.3456**	**0.0494**	**0.3227**	**4.0035**	**4.3262**	**0.1770**	**3.7165**	**3.8935**	**0.0000**	**5,077.6613**	**5,077.6613**	**1.3834**		**5,106.7120**

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	0.1782	1.7104	1.9955	4.0200e-003	0.0940	0.0266	0.1206	0.0257	0.0245	0.0502		407.7057	407.7057	3.2200e-003		407.7732
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	0.1763	0.2391	2.2413	3.6900e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		314.9164	314.9164	0.0190		315.3142
Total	**0.3546**	**1.9495**	**4.2368**	**7.7100e-003**	**0.4226**	**0.0292**	**0.4518**	**0.1129**	**0.0268**	**0.1397**		**722.6221**	**722.6221**	**0.0222**		**723.0875**

3.8 Building Construction 2 - 2015

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393		1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**		**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0191	0.1100	0.2148	2.4000e-004	6.6300e-003	1.8400e-003	8.4700e-003	1.8900e-003	1.6900e-003	3.5800e-003		23.8682	23.8682	2.1000e-004		23.8726
Worker	0.0132	0.0179	0.1681	2.8000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		23.6187	23.6187	1.4200e-003		23.6486
Total	**0.0323**	**0.1279**	**0.3829**	**5.2000e-004**	**0.0313**	**2.0300e-003**	**0.0333**	**8.4300e-003**	**1.8700e-003**	**0.0103**		**47.4870**	**47.4870**	**1.6300e-003**		**47.5212**

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393	0.0000	1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**	**0.0000**	**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0191	0.1100	0.2148	2.4000e-004	6.6300e-003	1.8400e-003	8.4700e-003	1.8900e-003	1.6900e-003	3.5800e-003		23.8682	23.8682	2.1000e-004		23.8726
Worker	0.0132	0.0179	0.1681	2.8000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		23.6187	23.6187	1.4200e-003		23.6486
Total	**0.0323**	**0.1279**	**0.3829**	**5.2000e-004**	**0.0313**	**2.0300e-003**	**0.0333**	**8.4300e-003**	**1.8700e-003**	**0.0103**		**47.4870**	**47.4870**	**1.6300e-003**		**47.5212**

3.8 Building Construction 2 - 2016

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	1.7816	17.7697	11.4613	0.0191		1.1398	1.1398		1.0508	1.0508		1,942.8738	1,942.8738	0.5665		1,954.7710
Total	**1.7816**	**17.7697**	**11.4613**	**0.0191**		**1.1398**	**1.1398**		**1.0508**	**1.0508**		**1,942.8738**	**1,942.8738**	**0.5665**		**1,954.7710**

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	0.0162	0.0956	0.1978	2.4000e-004	6.6300e-003	1.5400e-003	8.1800e-003	1.8900e-003	1.4200e-003	3.3100e-003		23.5701	23.5701	1.9000e-004		23.5741
Worker	0.0116	0.0159	0.1483	2.8000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		22.7999	22.7999	1.2900e-003		22.8270
Total	**0.0278**	**0.1115**	**0.3461**	**5.2000e-004**	**0.0313**	**1.7200e-003**	**0.0330**	**8.4300e-003**	**1.5900e-003**	**0.0100**		**46.3700**	**46.3700**	**1.4800e-003**		**46.4011**

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	1.7816	17.7697	11.4613	0.0191		1.1398	1.1398		1.0508	1.0508	0.0000	1,942.8738	1,942.8738	0.5665		1,954.7709
Total	**1.7816**	**17.7697**	**11.4613**	**0.0191**		**1.1398**	**1.1398**		**1.0508**	**1.0508**	**0.0000**	**1,942.8738**	**1,942.8738**	**0.5665**		**1,954.7709**

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	0.0162	0.0956	0.1978	2.4000e-004	6.6300e-003	1.5400e-003	8.1800e-003	1.8900e-003	1.4200e-003	3.3100e-003		23.5701	23.5701	1.9000e-004		23.5741
Worker	0.0116	0.0159	0.1483	2.8000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		22.7999	22.7999	1.2900e-003		22.8270
Total	**0.0278**	**0.1115**	**0.3461**	**5.2000e-004**	**0.0313**	**1.7200e-003**	**0.0330**	**8.4300e-003**	**1.5900e-003**	**0.0100**		**46.3700**	**46.3700**	**1.4800e-003**		**46.4011**

3.9 Paving 2 - 2015

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	3.2533	31.3537	19.2122	0.0303		2.0377	2.0377		1.8805	1.8805		3,057.2764	3,057.2764	0.8640		3,075.4206
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2533**	**31.3537**	**19.2122**	**0.0303**		**2.0377**	**2.0377**		**1.8805**	**1.8805**		**3,057.2764**	**3,057.2764**	**0.8640**		**3,075.4206**

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	0.1675	0.2271	2.1292	3.5100e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		299.1706	299.1706	0.0180		299.5485
Total	**0.1675**	**0.2271**	**2.1292**	**3.5100e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**299.1706**	**299.1706**	**0.0180**		**299.5485**

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	3.2533	31.3537	19.2122	0.0303		2.0377	2.0377		1.8805	1.8805	0.0000	3,057.2764	3,057.2764	0.8640		3,075.4206
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2533**	**31.3537**	**19.2122**	**0.0303**		**2.0377**	**2.0377**		**1.8805**	**1.8805**	**0.0000**	**3,057.2764**	**3,057.2764**	**0.8640**		**3,075.4206**

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	0.1675	0.2271	2.1292	3.5100e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		299.1706	299.1706	0.0180		299.5485
Total	**0.1675**	**0.2271**	**2.1292**	**3.5100e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**299.1706**	**299.1706**	**0.0180**		**299.5485**

3.10 Architectural Coating - 2016

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	35.9189					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**36.2874**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	3.8700e-003	5.3000e-003	0.0494	9.0000e-005	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		7.6000	7.6000	4.3000e-004		7.6090
Total	**3.8700e-003**	**5.3000e-003**	**0.0494**	**9.0000e-005**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**7.6000**	**7.6000**	**4.3000e-004**		**7.6090**

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	35.9189					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**36.2874**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	3.8700e-003	5.3000e-003	0.0494	9.0000e-005	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		7.6000	7.6000	4.3000e-004		7.6090
Total	**3.8700e-003**	**5.3000e-003**	**0.0494**	**9.0000e-005**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**7.6000**	**7.6000**	**4.3000e-004**		**7.6090**

Industrial Avenue Bridge Replacement Project

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	0.00		0.00	7,749.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	2			**Operational Year**	2016
Utility Company	Roseville Electric				
CO2 Intensity (lb/MWhr)	793.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 126'L, 60'W (including 1.5' railings) = 7,749SF

Construction Phase - Anticipated Construction Schedule

Off-road Equipment - Proposed Construction Equipment
3 Dump Trucks

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment
1 Striping Truck

Off-road Equipment - Proposed Construction Equipment
3 Dump Trucks

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment

Off-road Equipment - Proposed Construction Equipment
1 Striping Truck

Off-road Equipment -

Grading - Acres disturbed split amont 2 grading phases
Grading: 6,300CY Cut and Fill
Grading 2: 2,400CY Import

Demolition -

Trips and VMT - Grading Hauling Distance = 0.4 to reflect distance across the project site.

Construction Off-road Equipment Mitigation - Mitigation per PCAPCD Rule 228

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	67.00
tblConstructionPhase	NumDays	0.00	66.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	NumDays	0.00	44.00
tblConstructionPhase	NumDays	0.00	44.00
tblConstructionPhase	NumDays	0.00	2.00
tblConstructionPhase	NumDays	0.00	5.00
tblConstructionPhase	PhaseEndDate	1/4/2016	3/29/2016
tblConstructionPhase	PhaseEndDate	3/29/2016	12/28/2015
tblConstructionPhase	PhaseStartDate	12/29/2015	3/23/2016
tblConstructionPhase	PhaseStartDate	3/23/2016	12/22/2015
tblGrading	AcresOfGrading	22.00	0.09
tblGrading	AcresOfGrading	22.00	0.09
tblGrading	MaterialExported	0.00	6,300.00
tblGrading	MaterialImported	0.00	2,400.00
tblOffRoadEquipment	HorsePower	171.00	9.00
tblOffRoadEquipment	HorsePower	171.00	9.00

tblOffRoadEquipment	HorsePower	162.00	81.00
tblOffRoadEquipment	HorsePower	174.00	81.00
tblOffRoadEquipment	HorsePower	205.00	226.00
tblOffRoadEquipment	HorsePower	205.00	226.00
tblOffRoadEquipment	HorsePower	226.00	89.00
tblOffRoadEquipment	HorsePower	226.00	89.00
tblOffRoadEquipment	HorsePower	226.00	255.00
tblOffRoadEquipment	HorsePower	64.00	255.00
tblOffRoadEquipment	HorsePower	174.00	255.00
tblOffRoadEquipment	HorsePower	100.00	97.00
tblOffRoadEquipment	HorsePower	100.00	97.00
tblOffRoadEquipment	HorsePower	162.00	97.00
tblOffRoadEquipment	HorsePower	80.00	97.00
tblOffRoadEquipment	HorsePower	80.00	97.00
tblOffRoadEquipment	HorsePower	199.00	97.00
tblOffRoadEquipment	HorsePower	199.00	97.00
tblOffRoadEquipment	HorsePower	162.00	78.00
tblOffRoadEquipment	HorsePower	162.00	9.00
tblOffRoadEquipment	HorsePower	171.00	89.00
tblOffRoadEquipment	HorsePower	100.00	174.00
tblOffRoadEquipment	HorsePower	199.00	125.00
tblOffRoadEquipment	HorsePower	6.00	80.00
tblOffRoadEquipment	LoadFactor	0.42	0.56
tblOffRoadEquipment	LoadFactor	0.42	0.56
tblOffRoadEquipment	LoadFactor	0.38	0.73
tblOffRoadEquipment	LoadFactor	0.41	0.73
tblOffRoadEquipment	LoadFactor	0.50	0.29
tblOffRoadEquipment	LoadFactor	0.50	0.29
tblOffRoadEquipment	LoadFactor	0.29	0.20
tblOffRoadEquipment	LoadFactor	0.29	0.20

tblOffRoadEquipment	LoadFactor	0.29	0.40
tblOffRoadEquipment	LoadFactor	0.37	0.40
tblOffRoadEquipment	LoadFactor	0.41	0.40
tblOffRoadEquipment	LoadFactor	0.40	0.37
tblOffRoadEquipment	LoadFactor	0.40	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	LoadFactor	0.36	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.48
tblOffRoadEquipment	LoadFactor	0.38	0.56
tblOffRoadEquipment	LoadFactor	0.42	0.20
tblOffRoadEquipment	LoadFactor	0.40	0.41
tblOffRoadEquipment	LoadFactor	0.36	0.42
tblOffRoadEquipment	LoadFactor	0.82	0.38
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Concrete/Industrial Saws	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Cranes	Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Cranes
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rubber Tired Dozers	Graders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Excavators

tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rollers
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Tractors/Loaders/Backhoes	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Air Compressors	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Cement and Mortar Mixers	Excavators
tblOffRoadEquipment	OffRoadEquipmentType	Forklifts	Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType	Graders	Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType	Pavers	Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType	Rollers	Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Rough Terrain Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Skid Steer Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards

tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Signal Boards
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	OperationalYear	2014	2016
tblTripsAndVMT	HaulingTripLength	20.00	0.40
tblTripsAndVMT	VendorTripNumber	0.00	1.00

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					
2015	7.3576	76.0396	50.8844	0.0765	5.3550	4.3239	8.4947	1.3440	4.0112	4.3836	0.0000	7,807.1434	7,807.1434	1.9449	0.0000	7,847.9870
2016	36.2918	17.8719	11.7549	0.0197	0.0313	1.1415	1.1728	8.4300e-003	1.0524	1.0608	0.0000	1,992.5394	1,992.5394	0.5680	0.0000	2,004.4675
Total	**43.6495**	**93.9114**	**62.6393**	**0.0962**	**5.3863**	**5.4654**	**9.6675**	**1.3524**	**5.0636**	**5.4444**	**0.0000**	**9,799.6827**	**9,799.6827**	**2.5129**	**0.0000**	**9,852.4545**

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					
2015	7.3576	76.0396	50.8844	0.0765	5.3550	4.3239	8.4947	1.3440	4.0112	4.2952	0.0000	7,807.1434	7,807.1434	1.9449	0.0000	7,847.9870
2016	36.2918	17.8719	11.7549	0.0197	0.0313	1.1415	1.1728	8.4300e-003	1.0524	1.0608	0.0000	1,992.5394	1,992.5394	0.5680	0.0000	2,004.4675
Total	**43.6495**	**93.9114**	**62.6393**	**0.0962**	**5.3863**	**5.4654**	**9.6675**	**1.3524**	**5.0636**	**5.3561**	**0.0000**	**9,799.6827**	**9,799.6827**	**2.5129**	**0.0000**	**9,852.4545**

	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	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

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	0.2150	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Total	**0.2150**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.2150	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Energy	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
Total	**0.2150**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	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	N20	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

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2015	5/7/2015	5	5	
2	Grading	Grading	5/8/2015	7/8/2015	5	44	
3	Building Construction	Building Construction	7/9/2015	10/9/2015	5	67	
4	Paving	Paving	10/10/2015	10/13/2015	5	2	
5	Demolition 2	Demolition	10/14/2015	10/20/2015	5	5	
6	Grading 2	Grading	10/21/2015	12/21/2015	5	44	
7	Building Construction 2	Building Construction	12/22/2015	3/22/2016	5	66	
8	Paving 2	Paving	12/22/2015	12/28/2015	5	5	
9	Architectural Coating	Architectural Coating	3/23/2016	3/29/2016	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0.088

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 11,624; Non-Residential Outdoor: 3,875 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction 2	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving 2	Signal Boards	2	8.00	6	0.82
Paving 2	Surfacing Equipment	1	8.00	253	0.30
Paving 2	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Paving 2	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading 2	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Forklifts	2	6.00	89	0.20

Building Construction 2	Forklifts	2	6.00	89	0.20
Demolition	Rubber Tired Dozers	1	1.00	255	0.40
Demolition 2	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading 2	Rubber Tired Dozers	1	1.00	255	0.40
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Cranes	1	7.00	255	0.40
Demolition	Excavators	3	8.00	97	0.37
Grading	Excavators	3	8.00	81	0.73
Grading	Graders	1	8.00	255	0.40
Grading	Rollers	2	7.00	97	0.37
Building Construction	Bore/Drill Rigs	1	8.00	226	0.29
Building Construction	Cranes	1	7.00	89	0.20
Building Construction	Rough Terrain Forklifts	1	8.00	97	0.37
Paving	Other Construction Equipment	1	8.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	2	7.00	80	0.38
Paving	Rubber Tired Loaders	1	8.00	97	0.37
Demolition 2	Excavators	3	8.00	9	0.56
Demolition 2	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition 2	Cranes	1	7.00	226	0.29
Demolition 2	Other Construction Equipment	3	8.00	89	0.20
Demolition 2	Rough Terrain Forklifts	1	8.00	174	0.41
Demolition 2	Rubber Tired Loaders	1	8.00	125	0.42
Demolition 2	Signal Boards	2	8.00	80	0.38
Demolition 2	Skid Steer Loaders	1	8.00	255	0.40
Demolition 2	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Grading 2	Rubber Tired Loaders	1	8.00	199	0.36
Grading 2	Signal Boards	2	8.00	6	0.82
Grading 2	Skid Steer Loaders	1	8.00	64	0.37

Grading 2	Excavators	3	8.00	78	0.48
Grading 2	Graders	1	8.00	81	0.73
Grading 2	Rollers	2	7.00	97	0.37
Building Construction 2	Bore/Drill Rigs	1	8.00	226	0.29
Building Construction 2	Cranes	1	7.00	89	0.20
Building Construction 2	Rough Terrain Forklifts	1	8.00	97	0.37
Paving 2	Other Construction Equipment	1	8.00	9	0.56
Paving 2	Pavers	1	7.00	125	0.42
Paving 2	Rollers	2	7.00	80	0.38
Paving 2	Rubber Tired Loaders	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Rough Terrain Forklifts	1	8.00	100	0.40
Demolition	Rubber Tired Loaders	1	8.00	199	0.36
Demolition	Signal Boards	2	8.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	64	0.37
Demolition	Tractors/Loaders/Backhoes	4	7.00	97	0.37
Demolition	Other Construction Equipment	3	8.00	171	0.42
Grading	Rubber Tired Loaders	1	8.00	199	0.36
Grading	Signal Boards	2	8.00	6	0.82
Grading	Skid Steer Loaders	1	8.00	64	0.37
Grading	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Signal Boards	2	8.00	6	0.82
Paving	Surfacing Equipment	1	8.00	253	0.30
Paving	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading 2	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction 2	Signal Boards	2	8.00	6	0.82

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	18	45.00	0.00	35.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	16	40.00	0.00	623.00	10.80	7.30	0.40	LD_Mix	HDT_Mix	HHDT
Building Construction	9	3.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	15	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	18	45.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading 2	16	40.00	0.00	237.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction 2	9	3.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving 2	15	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2015

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					1.5905	0.0000	1.5905	0.2408	0.0000	0.2408			0.0000			0.0000
Off-Road	6.9486	73.7664	46.2129	0.0665		4.2866	4.2866		3.9769	3.9769		6,873.4724	6,873.4724	1.9195		6,913.7818
Total	**6.9486**	**73.7664**	**46.2129**	**0.0665**	**1.5905**	**4.2866**	**5.8771**	**0.2408**	**3.9769**	**4.2177**		**6,873.4724**	**6,873.4724**	**1.9195**		**6,913.7818**

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	0.1848	2.0578	1.9122	5.2200e-003	0.1221	0.0344	0.1566	0.0335	0.0317	0.0651		531.0927	531.0927	4.1300e-003		531.1794
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	0.2242	0.2154	2.7593	4.7300e-003	0.3697	2.9200e-003	0.3726	0.0981	2.6600e-003	0.1007		402.5782	402.5782	0.0213		403.0258
Total	**0.4090**	**2.2732**	**4.6715**	**9.9500e-003**	**0.4918**	**0.0374**	**0.5291**	**0.1315**	**0.0343**	**0.1658**		**933.6709**	**933.6709**	**0.0254**		**934.2052**

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					0.6799	0.0000	0.6799	0.1030	0.0000	0.1030			0.0000			0.0000
Off-Road	6.9486	73.7664	46.2129	0.0665		4.2866	4.2866		3.9769	3.9769	0.0000	6,873.4724	6,873.4724	1.9195		6,913.7818
Total	**6.9486**	**73.7664**	**46.2129**	**0.0665**	**0.6799**	**4.2866**	**4.9665**	**0.1030**	**3.9769**	**4.0799**	**0.0000**	**6,873.4724**	**6,873.4724**	**1.9195**		**6,913.7818**

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	0.1848	2.0578	1.9122	5.2200e-003	0.1221	0.0344	0.1566	0.0335	0.0317	0.0651		531.0927	531.0927	4.1300e-003		531.1794
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	0.2242	0.2154	2.7593	4.7300e-003	0.3697	2.9200e-003	0.3726	0.0981	2.6600e-003	0.1007		402.5782	402.5782	0.0213		403.0258
Total	**0.4090**	**2.2732**	**4.6715**	**9.9500e-003**	**0.4918**	**0.0374**	**0.5291**	**0.1315**	**0.0343**	**0.1658**		**933.6709**	**933.6709**	**0.0254**		**934.2052**

3.3 Grading - 2015

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					0.7549	0.0000	0.7549	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	5.9928	58.9601	37.6965	0.0587		3.8435	3.8435		3.5693	3.5693		6,048.3677	6,048.3677	1.6732		6,083.5042
Total	**5.9928**	**58.9601**	**37.6965**	**0.0587**	**0.7549**	**3.8435**	**4.5984**	**0.4140**	**3.5693**	**3.9833**		**6,048.3677**	**6,048.3677**	**1.6732**		**6,083.5042**

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	0.2045	0.3834	2.7419	5.1000e-004	5.2300e-003	2.6800e-003	7.9100e-003	1.4600e-003	2.4100e-003	3.8700e-003		47.8439	47.8439	9.1000e-004		47.8629
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	0.1993	0.1915	2.4527	4.2000e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		357.8473	357.8473	0.0190		358.2451
Total	**0.4038**	**0.5748**	**5.1946**	**4.7100e-003**	**0.3338**	**5.2800e-003**	**0.3391**	**0.0886**	**4.7800e-003**	**0.0934**		**405.6912**	**405.6912**	**0.0199**		**406.1081**

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					0.3227	0.0000	0.3227	0.1770	0.0000	0.1770			0.0000			0.0000
Off-Road	5.9928	58.9601	37.6965	0.0587		3.8435	3.8435		3.5693	3.5693	0.0000	6,048.3677	6,048.3677	1.6732		6,083.5042
Total	**5.9928**	**58.9601**	**37.6965**	**0.0587**	**0.3227**	**3.8435**	**4.1662**	**0.1770**	**3.5693**	**3.7463**	**0.0000**	**6,048.3677**	**6,048.3677**	**1.6732**		**6,083.5042**

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	0.2045	0.3834	2.7419	5.1000e-004	5.2300e-003	2.6800e-003	7.9100e-003	1.4600e-003	2.4100e-003	3.8700e-003		47.8439	47.8439	9.1000e-004		47.8629
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	0.1993	0.1915	2.4527	4.2000e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		357.8473	357.8473	0.0190		358.2451
Total	**0.4038**	**0.5748**	**5.1946**	**4.7100e-003**	**0.3338**	**5.2800e-003**	**0.3391**	**0.0886**	**4.7800e-003**	**0.0934**		**405.6912**	**405.6912**	**0.0199**		**406.1081**

3.4 Building Construction - 2015

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393		1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**		**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0145	0.1028	0.1475	2.4000e-004	6.6300e-003	1.8200e-003	8.4500e-003	1.8900e-003	1.6700e-003	3.5600e-003		24.0514	24.0514	2.1000e-004		24.0557
Worker	0.0150	0.0144	0.1840	3.2000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		26.8386	26.8386	1.4200e-003		26.8684
Total	**0.0295**	**0.1171**	**0.3315**	**5.6000e-004**	**0.0313**	**2.0100e-003**	**0.0333**	**8.4300e-003**	**1.8500e-003**	**0.0103**		**50.8900**	**50.8900**	**1.6300e-003**		**50.9241**

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393	0.0000	1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**	**0.0000**	**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0145	0.1028	0.1475	2.4000e-004	6.6300e-003	1.8200e-003	8.4500e-003	1.8900e-003	1.6700e-003	3.5600e-003		24.0514	24.0514	2.1000e-004		24.0557
Worker	0.0150	0.0144	0.1840	3.2000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		26.8386	26.8386	1.4200e-003		26.8684
Total	**0.0295**	**0.1171**	**0.3315**	**5.6000e-004**	**0.0313**	**2.0100e-003**	**0.0333**	**8.4300e-003**	**1.8500e-003**	**0.0103**		**50.8900**	**50.8900**	**1.6300e-003**		**50.9241**

3.5 Paving - 2015

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	3.2555	31.3641	19.2279	0.0303		2.0397	2.0397		1.8824	1.8824		3,057.3587	3,057.3587	0.8640		3,075.5034
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2555**	**31.3641**	**19.2279**	**0.0303**		**2.0397**	**2.0397**		**1.8824**	**1.8824**		**3,057.3587**	**3,057.3587**	**0.8640**		**3,075.5034**

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	0.1894	0.1819	2.3301	3.9900e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		339.9549	339.9549	0.0180		340.3329
Total	**0.1894**	**0.1819**	**2.3301**	**3.9900e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**339.9549**	**339.9549**	**0.0180**		**340.3329**

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	3.2555	31.3641	19.2279	0.0303		2.0397	2.0397		1.8824	1.8824	0.0000	3,057.3587	3,057.3587	0.8640		3,075.5034
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2555**	**31.3641**	**19.2279**	**0.0303**		**2.0397**	**2.0397**		**1.8824**	**1.8824**	**0.0000**	**3,057.3587**	**3,057.3587**	**0.8640**		**3,075.5034**

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	0.1894	0.1819	2.3301	3.9900e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		339.9549	339.9549	0.0180		340.3329
Total	**0.1894**	**0.1819**	**2.3301**	**3.9900e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**339.9549**	**339.9549**	**0.0180**		**340.3329**

3.6 Demolition 2 - 2015

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	5.0236	47.7571	30.8428	0.0448		3.1262	3.1262		2.9390	2.9390		4,579.2436	4,579.2436	1.1383		4,603.1485
Total	**5.0236**	**47.7571**	**30.8428**	**0.0448**		**3.1262**	**3.1262**		**2.9390**	**2.9390**		**4,579.2436**	**4,579.2436**	**1.1383**		**4,603.1485**

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	0.0145	0.1028	0.1475	2.4000e-004	0.0211	1.8200e-003	0.0229	5.4400e-003	1.6700e-003	7.1100e-003		24.0514	24.0514	2.1000e-004		24.0557
Worker	0.8969	0.8615	11.0373	0.0189	5.3339	0.0117	5.3456	1.3385	0.0107	1.3492		1,610.3128	1,610.3128	0.0853		1,612.1031
Total	**0.9115**	**0.9643**	**11.1848**	**0.0191**	**5.3550**	**0.0135**	**5.3686**	**1.3439**	**0.0123**	**1.3563**		**1,634.3642**	**1,634.3642**	**0.0855**		**1,636.1589**

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	5.0236	47.7570	30.8428	0.0448		3.1262	3.1262		2.9390	2.9390	0.0000	4,579.2436	4,579.2436	1.1383		4,603.1485
Total	**5.0236**	**47.7570**	**30.8428**	**0.0448**		**3.1262**	**3.1262**		**2.9390**	**2.9390**	**0.0000**	**4,579.2436**	**4,579.2436**	**1.1383**		**4,603.1485**

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	0.0145	0.1028	0.1475	2.4000e-004	0.0211	1.8200e-003	0.0229	5.4400e-003	1.6700e-003	7.1100e-003		24.0514	24.0514	2.1000e-004		24.0557
Worker	0.8969	0.8615	11.0373	0.0189	5.3339	0.0117	5.3456	1.3385	0.0107	1.3492		1,610.3128	1,610.3128	0.0853		1,612.1031
Total	**0.9115**	**0.9643**	**11.1848**	**0.0191**	**5.3550**	**0.0135**	**5.3686**	**1.3439**	**0.0123**	**1.3563**		**1,634.3642**	**1,634.3642**	**0.0855**		**1,636.1589**

3.7 Grading 2 - 2015

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					0.7549	0.0000	0.7549	0.4140	0.0000	0.4140			0.0000			0.0000
Off-Road	6.1165	56.6609	35.3456	0.0494		4.0035	4.0035		3.7165	3.7165		5,077.6613	5,077.6613	1.3834		5,106.7120
Total	**6.1165**	**56.6609**	**35.3456**	**0.0494**	**0.7549**	**4.0035**	**4.7583**	**0.4140**	**3.7165**	**4.1305**		**5,077.6613**	**5,077.6613**	**1.3834**		**5,106.7120**

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	0.1422	1.5834	1.4714	4.0200e-003	0.0940	0.0265	0.1205	0.0257	0.0244	0.0501		408.6655	408.6655	3.1800e-003		408.7322
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	0.1993	0.1915	2.4527	4.2000e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		357.8473	357.8473	0.0190		358.2451
Total	**0.3415**	**1.7749**	**3.9242**	**8.2200e-003**	**0.4226**	**0.0291**	**0.4517**	**0.1129**	**0.0267**	**0.1396**		**766.5128**	**766.5128**	**0.0221**		**766.9773**

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					0.3227	0.0000	0.3227	0.1770	0.0000	0.1770			0.0000			0.0000
Off-Road	6.1165	56.6609	35.3456	0.0494		4.0035	4.0035		3.7165	3.7165	0.0000	5,077.6613	5,077.6613	1.3834		5,106.7120
Total	**6.1165**	**56.6609**	**35.3456**	**0.0494**	**0.3227**	**4.0035**	**4.3262**	**0.1770**	**3.7165**	**3.8935**	**0.0000**	**5,077.6613**	**5,077.6613**	**1.3834**		**5,106.7120**

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	0.1422	1.5834	1.4714	4.0200e-003	0.0940	0.0265	0.1205	0.0257	0.0244	0.0501		408.6655	408.6655	3.1800e-003		408.7322
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	0.1993	0.1915	2.4527	4.2000e-003	0.3286	2.6000e-003	0.3312	0.0872	2.3700e-003	0.0895		357.8473	357.8473	0.0190		358.2451
Total	**0.3415**	**1.7749**	**3.9242**	**8.2200e-003**	**0.4226**	**0.0291**	**0.4517**	**0.1129**	**0.0267**	**0.1396**		**766.5128**	**766.5128**	**0.0221**		**766.9773**

3.8 Building Construction 2 - 2015

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393		1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**		**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0145	0.1028	0.1475	2.4000e-004	6.6300e-003	1.8200e-003	8.4500e-003	1.8900e-003	1.6700e-003	3.5600e-003		24.0514	24.0514	2.1000e-004		24.0557
Worker	0.0150	0.0144	0.1840	3.2000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		26.8386	26.8386	1.4200e-003		26.8684
Total	**0.0295**	**0.1171**	**0.3315**	**5.6000e-004**	**0.0313**	**2.0100e-003**	**0.0333**	**8.4300e-003**	**1.8500e-003**	**0.0103**		**50.8900**	**50.8900**	**1.6300e-003**		**50.9241**

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	1.9009	19.1492	11.5947	0.0191		1.2360	1.2360		1.1393	1.1393	0.0000	1,961.6847	1,961.6847	0.5664		1,973.5799
Total	**1.9009**	**19.1492**	**11.5947**	**0.0191**		**1.2360**	**1.2360**		**1.1393**	**1.1393**	**0.0000**	**1,961.6847**	**1,961.6847**	**0.5664**		**1,973.5799**

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	0.0145	0.1028	0.1475	2.4000e-004	6.6300e-003	1.8200e-003	8.4500e-003	1.8900e-003	1.6700e-003	3.5600e-003		24.0514	24.0514	2.1000e-004		24.0557
Worker	0.0150	0.0144	0.1840	3.2000e-004	0.0246	1.9000e-004	0.0248	6.5400e-003	1.8000e-004	6.7100e-003		26.8386	26.8386	1.4200e-003		26.8684
Total	**0.0295**	**0.1171**	**0.3315**	**5.6000e-004**	**0.0313**	**2.0100e-003**	**0.0333**	**8.4300e-003**	**1.8500e-003**	**0.0103**		**50.8900**	**50.8900**	**1.6300e-003**		**50.9241**

3.8 Building Construction 2 - 2016

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	1.7816	17.7697	11.4613	0.0191		1.1398	1.1398		1.0508	1.0508		1,942.8738	1,942.8738	0.5665		1,954.7710
Total	**1.7816**	**17.7697**	**11.4613**	**0.0191**		**1.1398**	**1.1398**		**1.0508**	**1.0508**		**1,942.8738**	**1,942.8738**	**0.5665**		**1,954.7710**

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	0.0124	0.0894	0.1300	2.4000e-004	6.6300e-003	1.5200e-003	8.1600e-003	1.8900e-003	1.4000e-003	3.2900e-003		23.7520	23.7520	1.9000e-004		23.7559
Worker	0.0133	0.0127	0.1636	3.2000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		25.9135	25.9135	1.2900e-003		25.9406
Total	**0.0256**	**0.1022**	**0.2936**	**5.6000e-004**	**0.0313**	**1.7000e-003**	**0.0330**	**8.4300e-003**	**1.5700e-003**	**0.0100**		**49.6655**	**49.6655**	**1.4800e-003**		**49.6965**

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	1.7816	17.7697	11.4613	0.0191		1.1398	1.1398		1.0508	1.0508	0.0000	1,942.8738	1,942.8738	0.5665		1,954.7709
Total	**1.7816**	**17.7697**	**11.4613**	**0.0191**		**1.1398**	**1.1398**		**1.0508**	**1.0508**	**0.0000**	**1,942.8738**	**1,942.8738**	**0.5665**		**1,954.7709**

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	0.0124	0.0894	0.1300	2.4000e-004	6.6300e-003	1.5200e-003	8.1600e-003	1.8900e-003	1.4000e-003	3.2900e-003		23.7520	23.7520	1.9000e-004		23.7559
Worker	0.0133	0.0127	0.1636	3.2000e-004	0.0246	1.8000e-004	0.0248	6.5400e-003	1.7000e-004	6.7100e-003		25.9135	25.9135	1.2900e-003		25.9406
Total	**0.0256**	**0.1022**	**0.2936**	**5.6000e-004**	**0.0313**	**1.7000e-003**	**0.0330**	**8.4300e-003**	**1.5700e-003**	**0.0100**		**49.6655**	**49.6655**	**1.4800e-003**		**49.6965**

3.9 Paving 2 - 2015

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	3.2533	31.3537	19.2122	0.0303		2.0377	2.0377		1.8805	1.8805		3,057.2764	3,057.2764	0.8640		3,075.4206
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2533**	**31.3537**	**19.2122**	**0.0303**		**2.0377**	**2.0377**		**1.8805**	**1.8805**		**3,057.2764**	**3,057.2764**	**0.8640**		**3,075.4206**

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	0.1894	0.1819	2.3301	3.9900e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		339.9549	339.9549	0.0180		340.3329
Total	**0.1894**	**0.1819**	**2.3301**	**3.9900e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**339.9549**	**339.9549**	**0.0180**		**340.3329**

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	3.2533	31.3537	19.2122	0.0303		2.0377	2.0377		1.8805	1.8805	0.0000	3,057.2764	3,057.2764	0.8640		3,075.4206
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**3.2533**	**31.3537**	**19.2122**	**0.0303**		**2.0377**	**2.0377**		**1.8805**	**1.8805**	**0.0000**	**3,057.2764**	**3,057.2764**	**0.8640**		**3,075.4206**

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	0.1894	0.1819	2.3301	3.9900e-003	0.3122	2.4700e-003	0.3146	0.0828	2.2500e-003	0.0851		339.9549	339.9549	0.0180		340.3329
Total	**0.1894**	**0.1819**	**2.3301**	**3.9900e-003**	**0.3122**	**2.4700e-003**	**0.3146**	**0.0828**	**2.2500e-003**	**0.0851**		**339.9549**	**339.9549**	**0.0180**		**340.3329**

3.10 Architectural Coating - 2016

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	35.9189					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**36.2874**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	4.4200e-003	4.2500e-003	0.0545	1.1000e-004	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		8.6378	8.6378	4.3000e-004		8.6469
Total	**4.4200e-003**	**4.2500e-003**	**0.0545**	**1.1000e-004**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**8.6378**	**8.6378**	**4.3000e-004**		**8.6469**

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	35.9189					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**36.2874**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	4.4200e-003	4.2500e-003	0.0545	1.1000e-004	8.2100e-003	6.0000e-005	8.2800e-003	2.1800e-003	6.0000e-005	2.2400e-003		8.6378	8.6378	4.3000e-004		8.6469
Total	**4.4200e-003**	**4.2500e-003**	**0.0545**	**1.1000e-004**	**8.2100e-003**	**6.0000e-005**	**8.2800e-003**	**2.1800e-003**	**6.0000e-005**	**2.2400e-003**		**8.6378**	**8.6378**	**4.3000e-004**		**8.6469**