Final Supplemental Environmental Impact Report

Sacramento to Roseville Third Main Track

Capitol Corridor Joint Powers Authority
2150 Webster Street, 3rd Floor
Oakland, CA 94612

February 2024

This page is intentionally blank.

Table of Contents

List of Figures

List of Tables

Appendix

List of Acronyms and Abbreviations

AB	Assembly Bill
ADL	Aerially Deposited Lead
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
APE	Area of Potential Effects
bgs	below ground surface
BMP	Best Management Practice
BSA	Biological Study Area
CAAQS	California Ambient Air Quality Standards
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCJPA	Capitol Corridor Joint Powers Authority
CDHS	California Department of Health Services
CEQA	California Environmental Quality Act
CGS	California Geology Survey
CHMIRS	California Hazardous Material Incident Reporting System
CLUP	Comprehensive Land Use Plan
CMP	Congestion Management Process
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CPRR	First Transcontinental Railroad
CRHR	California Register of Historical Resources
CWA	Federal Clean Water Act
DPM	diesel particulate matter
EPA	(United States) Environmental Protection Agency
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration

GHG	greenhouse gas
HCP	Habitat Conservation Plan
HI	Hazard Index
HRA	Health Risk Assessment
in/sec	inches per second
KVP	Key Viewpoint
MCL	Maximum Contaminant Level
MMRP	Mitigation Monitoring and Reporting Plan
MP	Mile Post
MRZ	Mineral Resource Zone
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NHRP	National Register of Historic Places
NHS	National Highway System
NO_2	nitrogen dioxide
NOA	Naturally Occurring Asbestos
NOP	Notice of Preparation
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
OPR	Office of Planning and Research
PCAPCD	Placer County Air Pollution Control District
PIA	Project Impact Area
PM	particulate matter
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
ppm	parts per million
PRC	Public Resources Code
Project	Sacramento to Roseville Third Main Track Project
RC	reinforced concrete

ROG	reactive organic gases
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SB	Senate Bill
SCS	Sustainable Communities Strategy
SEIR	Supplemental Environmental Impact Report
SIP	State Implementation Plan
SLF	Sacred Lands File
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	sulfur dioxide
SPRR	Southern Pacific Railroad
SR3T	Sacramento to Roseville Third Main Track Project
SVAB	Sacramento Valley Air Basin
SWPPP	Storm Water Pollution Prevention Plan
TAC	Toxic Air Contaminant
TAG	Transportation Analysis Guidelines
TCE	Temporary Construction Easement
TCM	Transportation Control Measure
TCR	Tribal Cultural Resource
UP	Union Pacific
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
VMT	Vehicle Miles Traveled

Preface to the Final Supplemental EIR

In compliance with California Environmental Quality Act (CEQA) Guidelines Section 15132, this document serves as the Final Supplemental Environmental Impact Report (EIR) for the Sacramento to Roseville Third Main Track (Project or SR3T Project) (State Clearinghouse #2014072005). This Final Supplemental EIR has been prepared under the direction of the Capitol Corridor Joint Powers Authority (CCJPA), acting as the lead agency, in accordance with the requirements of CEQA (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000, et seq.). In accordance with Sections 15087 and 15105 of the State CEQA Guidelines, the Draft Supplemental EIR was circulated for public review and comment for a period of 45 days, from October 27, 2023, through December 11, 2023.

State CEQA Guidelines Section 15132 requires that the Final Supplemental EIR consist of the following components:

1. The Draft Supplemental EIR or a revision of the draft;
2. Comments and recommendations received on the Draft Supplemental EIR either verbatim or in summary;
3. A list of persons, organization, and public agencies comments on the Draft Supplemental EIR;
4. The responses of the lead agency to significant environmental points raised in the review and consultation process; and
5. Any other information added by the lead agency.

This Final Supplemental EIR contains the public comments received on the Draft Supplemental EIR for the proposed Project, as well as written responses to those comments. A list of the persons, organizations, and public agencies who commented on the Draft Supplemental EIR is provided in the “Comments and Responses to Comments” chapter of this document. In addition, this document also contains revisions to the Draft Supplemental EIR with additions shown in underline and deletions shown in ~~strikethrough~~.

Introduction

This preface, which serves as an introduction to the Final Supplemental EIR, provides a summary of the public review process; an overview of the Final Supplemental EIR contents; and a summary of the changes made to the Draft Supplemental EIR text in response to comments and community input received during the public comment period as well as editorial changes to correct typographical errors. None of the revisions made to the Draft Supplemental EIR constitute significant new information, nor do they change any of the conclusions of the document.

Public Review Process

CCJPA, acting as the lead agency, prepared the Draft Supplemental EIR to inform decision makers and the public of the potential significant environmental effects associated with the proposed Project. The Draft Supplemental EIR was circulated for public review and comment for 45 days, from October 27, 2023, through December 11, 2023. A Public Notice of Availability of was provided to the State Clearinghouse, Responsible Agencies, Trustee Agencies, and interested parties who previously requested notice. The Draft Supplemental EIR, Final Supplemental EIR, and associated appendices were made available for review online at: http://sactoroseville3rdtrack.com/, https://www.capitolcorridor.org/sac-roseville-third-track/, and https://ceqanet.opr.ca.gov/Project/2018102058.

Interested persons and organizations had the opportunity to submit their written comments on the Draft Supplemental EIR during the 45-day public review period. Comment letters received on the Draft Supplemental EIR, reproduced in their entirety, and responses to those comments are provided in the "Comments and Responses to Comments" chapter following this preface.

Section 15088(c) of the State CEQA Guidelines specifies that the focus of the responses to comments shall be on the disposition of significant environmental issues. Responses are not required for comments regarding the merits of the proposed Project or on issues not related to potential physical environmental impacts and/or the Draft Supplemental EIR's analysis of such impacts. Comments on the merits of the proposed Project or other comments that do not raise environmental issues are nevertheless included within the record for consideration as part of the proposed Project approval process. The responses address environmental issues and indicate where issues raised do not pertain to environmental impacts, analysis, or address the merits of the proposed Project. In the latter instance, no further response is provided.

Only minor changes to the text of the Draft Supplemental EIR have occurred since public circulation, and none of the changes constitute "significant new information," which would require its recirculation. "Significant new information" is defined in Section 15088.5(a) of the State CEQA Guidelines as follows:

1. A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

2. A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

3. A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.

4. The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

None of these circumstances has arisen from comments on the Draft Supplemental EIR; therefore, recirculation is not required.

As required by CEQA Section 21092.5 and State CEQA Guidelines Section 15088(b), at least 10 days before consideration of the Final Supplemental EIR for certification, CCJPA provided a written proposed response to each public agency that submitted written comments on the Draft Supplemental EIR.

Overview of the Final Supplemental EIR

The Final Supplemental EIR consists of the following components, in the following order:

List of persons, organizations, and public agencies commenting on the Draft Supplemental EIR;

Comments and Responses from persons, organizations, and public agencies; and

The Draft Supplemental EIR (October 2023) with additions shown in underline and deletions shown in strikethrough.

Revisions to the Draft Supplemental EIR

The following list summarizes the substantive changes made to the Draft Supplemental EIR since public review. These changes are reflected with additions shown in underline and deletions shown in strikethrough.

Executive Summary

- A editorial change has been made on page ES-49 related to Mitigation Measure TRA-2 changing California Department of Parks and Recreation to Sacramento County Department of Regional Parks as the consulting agency for work occurring within the American River Parkway.

Chapter 1.0 Introduction

- Section 1.4 – Public Participation in the Environmental Review has been updated to reflect the closing of the 45-day public review period for the Draft SEIR.

Chapter 3.11 Transportation

- A editorial change has been made on page 3.11-16 related to Mitigation Measure TRA-2 changing California Department of Parks and Recreation to Sacramento County Department of Regional Parks as the consulting agency for work occurring within the American River Parkway. The entirety of Mitigation Measure TRA-2 has been added for clarification in the text.

Project Decision Process

This Final Supplemental EIR will be considered by CCJPA prior to a decision on whether to approve the proposed Project. If CCJPA decides to approve the proposed Project, CCJPA, as required by State CEQA Guidelines Section 15090, must first certify that the Final Supplemental EIR was completed in compliance with CEQA's requirements, was reviewed and considered by CCJPA, and reflects its independent judgment and analysis. CCJPA would then be required to adopt findings of fact on the disposition of each significant environmental impact, as required by State CEQA Guidelines Section 15091. If significant and unavoidable impacts (those that cannot feasibly be mitigated to less than significant levels) would result from implementation of the proposed Project, the proposed Project can still be approved, but the CCJPA must issue a "statement of overriding considerations" explaining in writing the specific economic, social, or other considerations that it believes, based on substantial evidence, make those significant effects acceptable (PRC Section 21002; State CEQA Guidelines Section 15093). A mitigation monitoring program, which is required by State CEQA Guidelines Section 15091(d) would be considered and adopted by CCJPA in conjunction with any project approval.

Comments and Responses to Comments

This chapter of the Final Supplemental EIR contains the comment letters received during the public review period for the Draft Supplemental EIR, which concluded on December 11, 2023. In conformance with Section 15088(a) of the State CEQA Guidelines, written responses were prepared to address comments received from reviewers of the Draft Supplemental EIR.

Commenters on the Draft Supplemental EIR

This preface, which serves as an introduction to the Final Supplemental EIR, provides a summary of the public review process; an overview of the Final Supplemental EIR contents; and a summary of the changes made to the Draft Supplemental EIR text in response to comments and community input received during the public comment period as well as editorial changes to correct typographical errors. None of the revisions made to the Draft Supplemental EIR constitute significant new information, nor do they change any of the conclusions of the document.

Table RTC-1 lists the comment letters received on the Draft Supplemental EIR. The comments and associated responses are provided in the order in which they were received by CCJPA.

Table RTC-1. Comment Letters Received on the Draft Supplemental EIR

Letter Number	Agency, Organization, or Individual	Date Received	Submission Method
1	Sacramento Metropolitan Air Quality Management District	11/17/23	Email
2	County of Sacramento Department of Regional Parks	12/8/23	Email
3	Central Valley Regional Water Quality Control Board	12/11/23	CEQAnet, email

Responses on the Draft Supplemental EIR

The written comments received on the Draft Supplemental EIR and the responses to those comments are presented below. Each comment letter has been assigned a number code, and individual comments in each letter have also been coded to facilitate responses. For example, the letter from the Sacramento Metropolitan Air Quality Management District is identified as Comment Letter 1, with comments noted as 1-1, 1-2, etc. Copies of each comment letter are provided prior to each response.

Comment Letter 1: Sacramento Metropolitan Air Quality Management District

Comment Letter 1

From: Molly Wright <MWright@airquality.org>
Sent: Tuesday, November 28, 2023 10:07 AM
To: Czechowski, Kelly
Cc: Paul Philley; James Allison
Subject: RE: Third Track to Roseville SEIR

CAUTION: [EXTERNAL] This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Thank you Kelly. Based on this answer, the only Sac Metro Air District comment on this project is to recommend that the proposed passenger train layover facility include shore power to further improve the project's environmental benefits.

Best Regards,

Molly Wright
Air Quality Planner/Analyst
Desk: (279) 207-1157
mwright@airquality.org
www.AirQuality.org
@AQMD
SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

1-1

From: Czechowski, Kelly <kelly.czechowski@hdrinc.com>
Sent: Wednesday, November 22, 2023 6:56 AM
To: Molly Wright <MWright@airquality.org>
Cc: Paul Philley <PPhilley@airquality.org>; James Allison <JimA@capitolcorridor.org>
Subject: RE: Third Track to Roseville SEIR

*** THIS EMAIL ORIGINATED OUTSIDE AIRQUALITY.ORG ***

Good morning Molly,

Thanks for reaching out – apologies for the delay in responding, I'm currently traveling for the Thanksgiving holiday.

Please see red text below for further clarification.

I'll be back in the office on the 27th , more than happy to schedule some time to discuss with you if there are any remaining questions you have.

Thanks and Happy Thanksgiving!

Best Regards,

1

Comment Letter 1

Kelly Czechowski
D 858.712.8222 M 619.861.5936

hdrinc.com/follow-us

From: Molly Wright <MWright@airquality.org>
Sent: Tuesday, November 21, 2023 9:36 AM
To: Czechowski, Kelly <kelly.czechowski@hdrinc.com>
Cc: Paul Philley <PPhilley@airquality.org>
Subject: FW: Third Track to Roseville SEIR

Good Morning Kelly,

Per the email chain below, could you please answer the following questions?

In reviewing the Third Track to Roseville SEIR, it looks as if the only significant emissions that occur from the new project are in Placer County and not Sacramento County. *Do I have that correct?*

Yes, that is correct.

All of the modeling results summarized in the body of the SEIR (as opposed to appendices) seem to indicate that, although I don't see that stated explicitly as text. Since the CalEEMod runs in Appendix B are all from the Roseville Layover, I can't tell from that either.

I know some of the changes are slated to occur in Sacramento County, replacement of the two existing rail bridges over SR 51, whereas previously only one new rail bridge over SR51, but it sounds the actual changes to construction emissions would occur only in Placer County. *Is that correct?*

Yes, that is correct as well.

1-1 cont.

Thank you in advance for your help,

Molly Wright
Air Quality Planner/Analyst
Desk: (279) 207-1157
mwright@airquality.org
www.AirQuality.org
@AQMD
SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

From: James Allison <JimA@capitolcorridor.org>
Sent: Friday, November 17, 2023 3:56 PM
To: Molly Wright <MWright@airquality.org>; kelly.czechowski@hdrinc.com

2

Comment Letter 1

Cc: Paul Philley <PPhilley@airquality.org>
Subject: Re: Third Track to Roseville SEIR

***** THIS EMAIL ORIGINATED OUTSIDE AIRQUALITY.ORG *****

Molly – Kelly from HDR is included on this email.

I am in the UK right now but feel free to reach out.

Jim Allison | Manager of Planning
Pronouns: He | Him| His
Capitol Corridor Joint Powers Authority
2150 Webster St, 3rd Floor | Oakland, CA 94612
(510) 464-6994 | jima@capitolcorridor.org or jalliso@bart.gov

From: Molly Wright <MWright@airquality.org>
Date: Friday, November 17, 2023 at 11:54 PM
To: James Allison <JimA@capitolcorridor.org>
Cc: Paul Philley <PPhilley@airquality.org>
Subject: RE: Third Track to Roseville SEIR

Thank you Jim!

Would you be able to refer me to anyone so I can ask somewhat more detailed questions about the modeling? I'm trying to determine whether we want to comment on this SEIR. If all of the significant emissions are in Placer County, we won't. However, I want to be sure.

Molly Wright
Air Quality Planner/Analyst
Desk: (279) 207-1157
mwright@airquality.org
www.AirQuality.org
@AQMD
SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

From: James Allison <JimA@capitolcorridor.org>
Sent: Friday, November 17, 2023 3:28 PM
To: Molly Wright <MWright@airquality.org>
Cc: Paul Philley <PPhilley@airquality.org>
Subject: Re: Third Track to Roseville SEIR

***** THIS EMAIL ORIGINATED OUTSIDE AIRQUALITY.ORG *****

Comment Letter 1

A layover facility (or mini yard) for our trains to layover was going to be built anyhow in Placer County it is just slightly in a different location as covered in this sEIR. I do not think that changes anything for Sacramento County

The rail bridges are in Sacramento county. In the sEIR it covers replacement of the two existing rail bridges over SR 51 (in the Elvas area) as the new elements whereas we only had the one new rail bridge over SR51 in the fEIR before (in 2015).

Jim Allison | Manager of Planning
Pronouns: He | Him| His
Capitol Corridor Joint Powers Authority
2150 Webster St, 3rd Floor | Oakland, CA 94612
(510) 464-6994 | jima@capitolcorridor.org or jalliso@bart.gov

---

From: Molly Wright <MWright@airquality.org>
Date: Friday, November 17, 2023 at 10:51 PM
To: James Allison <JimA@capitolcorridor.org>
Cc: Paul Philley <PPhilley@airquality.org>
Subject: Third Track to Roseville SEIR

Good Afternoon Jim,

Hope this finds you well. In reviewing the Third Track to Roseville SEIR, it looks as if the only significant emissions that occur from the new project are in Placer County and not Sacramento County.

Do I have that correct? All of the modeling results summarized in the body of the SEIR (as opposed to appendices) seem to indicate that, although I don't see that stated explicitly as text. Since the CalEEMod runs in Appendix B are all from the Roseville Layover, I can't tell from that either.

I know some of the changes are slated to occur in Sacramento County (changes to bridge design), but it sounds the actual changes to construction emissions would occur only in Placer County. Correct?

Thank you in advance, and have a great weekend!

Molly Wright
Air Quality Planner/Analyst
Desk: (279) 207-1157
mwright@airquality.org
www.AirQuality.org
@AQMD
SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Comment Response 1-1

The commenter requests clarification regarding construction emissions being generated as part of the revised project, with a focus on any new significant construction emissions within Sacramento County. The commenter also provides a recommendation to consider the use of shore power for the passenger rail layover facility in Roseville to further improve the project's environmental benefits. As identified in Draft SEIR Chapter 3.2 – Air Quality/Climate Change/Greenhouse Gases, project construction emissions associated with the railroad bridge crossings in Sacramento County would not exceed SMAQMD's project level thresholds with implementation of Mitigation Measures AQ-2a, AQ-2b, and AQ-2c, similar to what was identified in the 2015 EIR. "Shore power", which CCJPA refers to as "hotel power" or "wayside power" was an assumption included in the 2015 EIR and would be incorporated as part of the Project.

Comment Letter 2: County of Sacramento Department of Regional Parks

DocuSign Envelope ID: 4FEA43E3-1D8B-437D-9B02-FCE3D8469C0C

Comment Letter 2

Ann Edwards
County Executive

County of Sacramento

Dave Defanti
Deputy County Executive
Community Services Agency

Regional Parks
Liz Bellas - Director

December 8, 2023

Capitol Corridor Joint Powers Authority
Attention: Jim Allison
300 Lakeside Drive, 14th Floor East
Oakland, CA 94612

RE: County of Sacramento Department of Regional Parks Comments on the Supplemental Environmental Impact Report for the Sacramento to Roseville Third Track Project

Dear Mr. Allison:

Thank you for providing Sacramento County Department of Regional Parks (Regional Parks) the opportunity to provide comments on the Supplemental Environmental Impact Report (Document). Our concerns are related to impacts to the American River Parkway (Parkway) by the Elvas Railroad Bridge Crossings.

The Parkway from Nimbus Dam to the confluence with the Sacramento River is designated as a Wild and Scenic River by both the State and Federal Wild and Scenic Rivers Acts (WSRA) in 1972 and 1981, respectively. The management and protection of the wild and scenic river values, specifically focused on recreation and fisheries, is outlined in the American River Parkway Plan (ARPP), as adopted by the State of California under the Urban American River Parkway Preservation Act. In accordance with the ARPP, management of the Parkway and administration of the ARPP is the principal responsibility of the Sacramento County Department of Regional Parks. Therefore, projects within the American River Parkway must be reviewed by Regional Parks for consistency with the ARPP as part of the approval process, which is also outlined in the ARPP.

2-1

Comment Letter 2

As a responsible agency under the State and Federal Wild and Scenic Rivers Act, Regional Parks requests specificity of significant environmental impacts within the Parkway, with specific mitigations outlined in the Supplemental Impact Report. This request is consistent with the following policies of the ARPP:

Terrestrial Resource Policies

3.1 Any development of facilities within the Parkway, including but not limited to buildings, roads, turfed areas, trails, bridges, tunnels, pipelines, overhead electrical lines, levees and parking areas, shall be designed and located such that any impact upon native vegetation is minimized and appropriate mitigation measures are incorporated into the project.

3.1.1 Parkway facilities are those necessary for the operations, management, and permitted uses within the Parkway.

3.1.2 Development of non-Parkway facilities must have a compelling regional need, meet all applicable statutory requirements and provide mitigation and enhancements to the Parkway's natural, recreational, or interpretive resources.

2-1 cont.

Bridges

8.18 If new bridge crossings are constructed, they shall be designed and located in such a manner as to minimize negative impact to the Parkway environment, aesthetic values, and natural resources. Any additional bridge crossings should be located within Developed Recreation or Limited Recreation areas.

8.18.1 The Downtown-Natomas-Airport (DNA-RT) light rail project alignment, as approved by the Regional Transit Board of Directors in December 2003, is recognized by this Plan.

8.19 Bridge crossings should incorporate river themes and the Parkway context into its design and use muted, earth toned colors.

2-2

Comment Letter 2

8.20 If new automobile bridges are considered, expanding existing bridge capacity is preferred to constructing new bridges. If after careful study of all other alternatives, another crossing is required, a map amendment to the locally-adopted area plan(s) shall be required.

8.21 If new automobile bridges are to be constructed over the American River or existing automobile bridges enlarged, these facilities should provide a path for bicycles and pedestrians that is separated from vehicle lanes and include viewing platforms where appropriate.

8.22 New bridges for bikes, pedestrians, and equestrians may be considered when there is a need to improve Parkway connectivity, circulation and access, and shall require a map amendment to the locally-adopted area plan(s).

2-2 cont.

The Document describes permanent property acquisitions from the American River Parkway. This loss of recreational property should include a specific mitigation:

- Add appropriate bridge infrastructure, as needed, to allow connection of the Two Rivers Trail. Adding bridge safety features that will allow the paved trail to be built under the railroad bridge will connect two sections of the Two Rivers Trail. As of now, Phase I and Phase II of the Two Rivers Trail are awkwardly separated by a short unpaved segment associated with the existing railroad bridge.

2-3

The Document should also describe impacts associated with any proposed detours from the recreational trails on the American River Parkway and should specifically describe how safe access to trails will be maintained as mitigation. Communications should be made to Sacramento County Department of Regional Parks (*not* to the California Department of Parks and Recreation) for work in the American River Parkway. Detours routed outside of the Parkway should be disclosed as a project impact. Regional Parks requests the following be included as mitigation for any recreational impacts described in the Document:

2-4

DocuSign Envelope ID: 4FEA43E3-1D8B-437D-9B02-FCE3D8469C0C

Comment Letter 2

- If the paved trail requires closures, these should be limited to nighttime hours, and that the paved trail be re-opened for morning and daytime commuters.
- Daytime closure of the paved trails require a 14 day advance notice to trail users, via signage at the detour locations, and coordinated with Regional Parks.
- At least one Parkway paved or unpaved trail undercrossing be available, at all times, for walkers, equestrians, and others who should not be detoured through long detours onto the city streets.

2-4 cont.

If you have any questions please contact KC Sorgen at (916) 916-874-6099 or sorgenkc@saccounty.gov.

Sincerely,

DocuSigned by:
Liz Bellas
4FA1447F54B14F8...

Liz Bellas

Comment Response 2-1

The commenter describes the purpose of the American River Parkway Plan (ARPP) and states that the Sacramento County Department of Regional Parks is responsible for the management of the American Parkway and administration of the ARPP. The commenter recommends that environmental impacts and mitigations be consistent with terrestrial resource policies listed in the ARPP. In accordance with ARPP, development of facilities within the American Parkway shall be designed and located to minimize impact on native vegetation. American Parkway facilities are those necessary for the operations, management, and permitted uses within the American Parkway. Development of non-American Parkway facilities must have a compelling regional need, meet all applicable statutory requirements, and provide mitigation and enhancements to the American Parkway.

Based on a review of the 2008 American River Parkway Plan and the Two Rivers Trail (Phase II) Draft EIR, the improvements associated with the B Street Underpass (Bridge 23-0023) and Elvas Underpass (Bridge 24-0031) are located outside the boundaries of the ARPP (See Figure RTC-1).

Although the modified bridge improvements would be located outside the boundaries of the ARPP, the Draft SEIR identified that the bridge improvements are located near where special-status plant species and sensitive habitats would occur. These include Sanford's arrowhead and the Elderberry Savanna (Draft SEIR page 3.3-34, Chapter 3.3 Biological Resources). Mitigation Measures BIO-1a (Install fencing and/or flagging to protect sensitive biological resources), BIO-1b (Implement a worker environmental awareness training program for construction personnel), BIO-1c (Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats), and BIO-3 (Implement measures to avoid long-term effects on special-status plants documented in the Project impact area) were identified as reducing and minimizing impacts to these special status plant species.

Comment Response 2-2

The commenter identified ARPP policies concerning the construction of bridges in the American Parkway which include that new bridge crossings should minimize negative impacts to the American Parkway environment with additional bridge crossing located within Developed Recreation or Limited Recreation areas. Other ARPP policies identified by the commenter include recommendations for bridge crossings to use muted, earth toned colors and for any new automobile bridges that would be constructed over the American River to provide a path for bicycles and pedestrians.

As identified in the Draft SEIR, the two railroad bridge crossings under consideration currently span across Business I-80 (Draft SEIR page 1-2, Chapter 1.0 – Introduction; Draft EIR Figure 1-3). Based on a review of the 2008 American River Parkway Plan and the Two Rivers Trail (Phase II) Draft EIR, the improvements associated with the B Street Underpass and Elvas Underpass are located outside the boundaries of the ARPP. No new automobile bridges are proposed to be constructed over the American River with implementation of the improvements associated with the two underpasses. No further response is required.

THIS PAGE IS INTENTIONALLY BLANK.

Figure RTC-1. Existing and Proposed Recreational Resources and Features

THIS PAGE IS INTENTIONALLY BLANK.

Comment Response 2-3

The commenter notes that the Draft SEIR described permanent property acquisitions from the American River Parkway and recommends including a specific mitigation to add bridge infrastructure to allow connection of the Two Rivers Trail. The comment notes that Phase I and Phase II of the Two Rivers Trail are separated by a short unpaved segment associated with the existing railroad bridge.

Based on a review of the Two Rivers Trail (Phase II) Draft EIR, the improvements associated with the B Street and Elvas Underpasses are not located near Phase I of the Two Rivers Trail. As identified in Figure ES-2 of the Two Rivers Trail (Phase II) Draft EIR, some portions of Elvas Underpass project area would be located in an area identified as Segment 3 while some portions of the B Street Underpass project area would be located in an area identified as Segment 2. The unpaved segment that the commenter refers to appears to be located in Segment 1.

Comment Response 2-4

The commenter states that the document describe impacts associated with any proposed detours from the recreational trails on the American River Parkway and should specifically describe how safe access to trails will be maintained as mitigation. The commenter requests that mitigation for recreational impacts include limiting closures to paved trails to nighttime hours, notifying trail users 14 days in advance if there will be daytime closures, and having at least one American Parkway trail undercrossing be available at all times for pedestrians and equestrians.

As identified in the Draft SEIR, construction of the railroad bridges crossing over Business I-80 could cause short-term impacts on local transportation networks which could affect drivers, transit service/riders, bicyclists, pedestrians, and American River uses (Draft SEIR page 3.11-16, Chapter 3.11 – Traffic and Transportation). To mitigate for potential and temporary disruptions, Mitigation Measure TRA-2 would be implemented. Mitigation Measure TRA-2 requires implementation of site specific construction traffic management plans (TMPs). Mitigation Measure TRA-2 identifies that measures to be considered in the TMPs include but are not limited to the development of signage, flagging limits on period of closure, and provision for passage of emergency vehicles during construction activities. Mitigation Measure TRA-2 also identifies that the TMPs be developed in consultation with various applicable transportation entities and stakeholders, include city and county park departments. Mitigation Measure TRA-2 has been modified to reflect the Sacramento County Department of Regional Parks as the listed agency for work in the American River Parkway.

> **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** CCJPA, in coordination with UPRR, shall prepare site-specific TMPs for each road crossing prior to the initiation of construction. UPRR shall be responsible for project management or may contract with one or more construction management firms to in ensure that construction contractors' crews and schedules are coordinated and that the plans and TMP specifications are being followed. The TMPs shall address the specific steps to be taken before, during, and after construction to minimize transportation impacts on all modes, including the mitigation measures and environmental commitments identified in this environmental document. Such measures include but are not limited to signage, flagging, limits on periods of closure, and provision for passage of emergency vehicles during construction. UPRR shall be responsible for developing the TMPs in consultation with the applicable transportation entities listed below.

- Caltrans for state and federal roadway facilities.
- Local agencies including City of Sacramento, County of Sacramento, City of Citrus Heights, and City of Roseville for local transportation facilities such as roads and bike paths.
- Transit providers, including but not limited to, Regional Transit and Roseville Transit.
- Rail operators.
- U.S. Coast Guard.
- City and county parks departments.
- ~~California Department of Parks and Recreation (DPR)~~ Sacramento County Department of Regional Parks for work in the American River Parkway.

UPRR shall ensure that the TMPs are implemented prior to beginning construction at any given site, including in-water construction sites. If necessary to minimize unexpected operational impacts or delays experienced during real-time construction, UPRR shall be responsible for modifying the TMP in coordination with the appropriate transportation entities to address these effects.

Each TMP shall include the following provisions, as applicable to the conditions.

- Description and deployment of signage warning of roadway surface conditions such as loose gravel, steel plates, or similar conditions that could be hazardous to road cycling activity on roadways open to bicycle traffic.
- Description and deployment of signage and barricades to be used around the work sites.
- Description and deployment of buoys, signage, or other effective means to warn boaters of in-water work areas and restrictions on access. Description of warning devices and signage (e.g., buoys labeled “boats keep out” or “no wake zone”) in compliance with U.S. Coast Guard Private Aid to Navigation requirements and effective during non-daylight hours and periods of dense fog.
- Use of flag people or temporary traffic signals/signage as necessary to slow or detour traffic.
- Notifications for the public, emergency service providers, cycling organizations, bike shops, schools, the U.S. Coast Guard, boating organizations, marinas, city and county parks departments, and DPR, where applicable, describing construction activities that could affect transportation and water navigation.
- Outreach (through public meetings and/or flyers and other advertisements).
- Procedures for construction area evacuation in the case of an emergency declared by county or other local authorities.
- Designation of alternate access routes via detours and bridges to maintain continual circulation for local travelers in and around construction zones, including bicycle riders, pedestrians, and boaters, where applicable.
- Description of construction staging areas, material delivery routes, and specification of construction vehicle travel hour limits.

- Notifications to commercial and leisure boating communities of proposed operations in the waterways, including posting notices at local marinas and public launch ramps. This information shall provide details regarding construction site location(s); construction schedules; and identification of no-wake zones, speed-restricted zones, and detours, where applicable
- No-wake zones and speed restrictions shall be established as part of development of the site-specific plans and shall be designated to protect the safety of construction workers and recreationists.
- Scheduling for oversized material deliveries to the work site to minimize peak hour traffic conflicts, and location of haul routes.
- Provisions that direct haulers pull over in the event of an emergency. If an emergency Vehicle is approaching on a narrow two-way roadway, specify measures to ensure that appropriate maneuvers shall be conducted by the construction vehicles to allow continual access for the emergency vehicles at the time of an emergency.
- Control for any temporary road closure, detour, or other disruption to traffic circulation, including any temporary partial closures of the water channel.
- Designation and posting of offsite vehicle staging and parking areas.
- Posting of information for contact in case of emergency or complaint.
- Designation of daily construction time windows during which construction is restricted or rail operations would need to be suspended for any activity within the UPRR ROW.
- Coordination with rail providers (i.e., Amtrak, UPRR) to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures.
- Coordination with transit providers (i.e., RT, Roseville Transit) to develop, where feasible, daily construction time windows during which transit operations would not be either detoured or substantially slowed.
- Routine posting of information to the 511.org website regarding construction delays and detours
- Other actions to be identified and developed as necessary by the construction manager/resident engineer to ensure that temporary impacts on transportation facilities are minimized.

Comment Letter 3: Central Valley Regional Water Quality Control Board

Comment Letter 3

California Water Boards

Gavin Newsom, Governor

Yana Garcia, Secretary for Environmental Protection

Central Valley Regional Water Quality Control Board

11 December 2023

Jim Allison
Capitol Corridor Joint Powers Authority
2150 Webster Street, 3rd Floor
Oakland, CA 92612
jima@capitolcorridor.org

COMMENTS TO REQUEST FOR REVIEW FOR THE SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT, SACRAMENTO TO ROSEVILLE THIRD MAIN TRACK PROJECT, SCH#2014072005, PLACER AND SACRAMENTO COUNTIES

Pursuant to the State Clearinghouse's 27 October 2023 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Supplemental Environmental Impact Report* for the Sacramento to Roseville Third Main Track Project, located in Placer and Sacramento Counties.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

3-1

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has

CommentLetter 3

adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations
All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

3-1 cont.

II. Permitting Requirements

Construction Storm Water General Permit
Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the

3-2

CommentLetter 3

State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Clean Water Act Section 404 Permit
If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification
If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

3-2 cont.

Waste Discharge Requirements – Discharges to Waters of the State
If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources

CommentLetter 3

Sacramento to Roseville
Third Main Track Project
Placer and Sacramento Counties

- 4 -

11 December 2023

Control Board website at:
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit
If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

3-2 cont.

Limited Threat General NPDES Permit
If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit
If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

CommentLetter 3

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.

Peter Minkel

Peter Minkel
Engineering Geologist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

Comment Response 3-1

The comment provides background information on the regulatory setting for the Central Valley Regional Water Quality Control Board's Basin Plan. The comment also refers to the Antidegradation Policy and Antidegradation Implementation Policy that all wastewater discharges must comply with. The commenter states that the antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System (NPDES) and land discharge Waste Discharge Requirements (WDRs) permitting processes. The commenter recommends that the environmental review document should evaluate potential impacts to both surface and groundwater quality.

The Draft SEIR provides an evaluation of potential impacts to both surface and groundwater quality in Chapter 3.7 – Hydrology and Water Resources. The analysis provides a summary of the evaluation conducted as part of the 2015 EIR as well as an updated analysis of impacts associated with water quality standards and waste discharge requirements.

Comment Response 3-2

This comment provides information pertaining to permitting requirements associated with the Construction Storm Water General Permit, Clean Water Act Section 404 Permit, Clean Water Act Section 401 Permit (Water Quality Certification), Waste Discharge Requirement Permit, Dewatering Permit, and National Pollutant Discharge Elimination System (NPDES) permit, including a Limited Threat General NPDES Permit.

As identified in the Chapter 3.7 (Hydrology and Water Resources) of the Draft SEIR, implementation of the improvements associated with the railroad bridge crossings and the passenger train layover facility would require construction and operational activities that could increase the potential for the release of potential contaminants into receiving waters. Construction and operational activities would be required to adhere to applicable federal, state, and local laws and regulations pertaining to water quality and water discharge requirements. The Draft SEIR identified that compliance to relevant regulations included but is not limited to conditions set forth in the Construction General Permit, NPDES Low Threat Discharge Permit, State Small MS4 Permit, Sacramento MS4 Permit, and Caltrans Statewide NPDES MS4 Permit.

THIS PAGE IS INTENTIONALLY BLANK.

Executive Summary

This Draft Supplemental Environmental Impact Report (SEIR) was prepared in accordance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines §15132. The Capitol Corridor Joint Powers Authority (CCJPA) is the Lead Agency for the environmental review of the Sacramento to Roseville Third Main Track (Project or SR3T Project). The SEIR examines the potential effects of the proposed revised Project, which involves two components – the Railroad Bridge Crossings and the Passenger Train Layover Facility.

The revised Project would constitute a change to the previously approved SR3T Project. Therefore, the Draft SEIR evaluates whether any new or substantially more severe impacts on the environment would result from the proposed modifications on these two components, compared to the environmental impacts disclosed in the previously certified SR3T Project EIR. The Draft SEIR also incorporates the applicable mitigation measures that were identified in the previously certified EIR.

ES.1 Project Location and Description

The original SR3T Project is located in Sacramento County and Placer County between the existing Sacramento Valley Station and the existing City of Roseville Station (Figures 1-1 and 1-2). The SR3T Project proposed the construction and operation of approximately 17.8 miles of new main track within the existing rail corridor and identified the following improvements:

- Minor reconfiguration of the City of Roseville Station to accommodate increased Capitol Corridor service in the future.
- Grading and installation of new subgrade and drainage
- Placement of new rail and ties
- Special track work with turnouts, crossovers and associated switches and equipment
- New wayside track signals
- Eleven replaced railroad bridges, including a new bridge across the American River in Sacramento

The Final EIR for the SR3T Project was certified on November 18, 2015 (State Clearinghouse No. 2014072005). This supplement to the certified EIR will contain only the information necessary to make the previously certified EIR adequate for the Project as revised, would be given the same notice and public review as was given to the original draft EIR as per 14 CCR § 15087, and would be circulated by itself without re-circulating the previous draft or final EIR.

Subsequent to that original CEQA certification, CCJPA is seeking to accommodate changes in design associated with the SR3T Project. The SR3T Project SEIR covers two revised Project components:

- *Railroad Bridge Crossings:* Supplemental analysis for up to three railroad bridge crossings across Business I-80 to accommodate changes in project design. This includes

modifications (replacement and realignment) to the existing Elvas Underpass (Caltrans Bridge 24-0031) and to the existing B Street Underpass (Caltrans Bridge 24-0023) (Figure 1-3). The modified Elvas Underpass would consist of Elvas East Underpass and Elvas West Underpass. Elvas East Underpass would be a single track structure on the existing Union Pacific (UP) Fresno Subdivision. Elvas West Underpass would consist of a two track structure on the UP Martinez Subdivision. The modified B Street Underpass would consist of two separate track structures (e.g., two track and one single track structure) on the UP Martinez Subdivision.

- *Passenger Train Layover Facility:* The original SR3T EIR contemplated a passenger train layover facility adjacent to Old Town Roseville, located along the west leg of the Union Pacific (UP) wye track connecting the UP Roseville Subdivision with the UP Valley Subdivision. Subsequent to certification of the Final EIR for the SR3T Project, supplemental analysis would be conducted for a revised location of the proposed passenger train layover facility (Figure 1-4).

ES.2 Summary of Impacts and Mitigation Measures

An analysis of the environmental impacts associated with implementation of the revised Project has been conducted and is contained in this Supplemental EIR. Eleven issue areas are analyzed in detail and presented in Chapter 3 of this SEIR. Table ES-1 provides a summary of the potentially significant environmental impacts that would result during construction and operation of the revised Project, mitigation measures that would lessen potential environmental impacts, and the level of significance of the environmental impacts that would remain after implementation of the proposed mitigation, if necessary.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Aesthetics and Visual Resources			
Threshold 3.1-A: Would the revised Project have a substantial adverse effect on a scenic vista? **Threshold 3.1-B:** Would the revised Project substantially damage scenic resources, including, not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The railroad bridge crossings and revised passenger train layover facility would not be located within a scenic vista or state designated scenic highway. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable	Not Applicable
Threshold 3.1-C: Would the revised Project, in In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage points). If in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality?	*Railroad Bridge Crossings* Potentially Significant. During construction, viewers in the open space/recreation and residential visual assessment units would see construction activities for limited periods. *Passenger Train Layover Facility* Potentially Significant. During construction, viewers adjacent to the site would see construction activities for limited periods. The revised location of the proposed	*Railroad Bridge Crossings and Passenger Train Layover Facility* **AES-2a: Minimize visual disruption through vegetation retention and placement of staging areas**. To minimize visual disruption, construction activities would implement the following measures. • Limit preconstruction vegetation removal to that necessary for construction. • Where possible, preserve existing vegetation, particularly along the edge of construction areas, to help screen views.	*Railroad Bridge Crossings* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. *Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	tracks and access road would be visible, but would be visually consistent with existing UPRR tracks. While the majority of the proposed layover tracks and access road would not be visible to nearby residences due to existing landscaping, fencing, and intervening businesses, some adjacent uses would see railcars and locomotives stored at the site.	• After construction, regrade and revegetate areas disturbed by construction and staging to pre-project conditions. • To the extent feasible, do not site construction staging areas immediately adjacent to existing residential, recreational, or other sensitive visual receptors. **AES-2b: Minimize fugitive light from portable sources used for construction**. The construction contractor shall minimize fugitive light from portable lighting sources used during construction by adhering to the following practices. • Project-related light and glare shall be minimized to the maximum extent feasible within the constraints of safety considerations. • Color-corrected halide lights shall be used. • Portable lights shall be operated at the lowest allowable wattage and height and shall be raised to no more than 20 feet above ground level. • All lights shall be screened and directed down toward work activities and away from the night sky and nearby residents to the maximum extent within the constraints of safety considerations. • The number of nighttime lights used shall be minimized to the greatest extent possible. Implementation of this measure will reduce—to the extent feasible as governed by site-specific safety requirements—the overall amount of nighttime light and glare introduced to the Project vicinity during construction.	new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		Passenger Train Layover Facility **AES-2c: Screen Ancillary Project Facilities**. Ancillary Project facilities shall not be sited near residences, parks, or other sensitive visual receptors. Where avoidance is not feasible, facilities shall be screened with perimeter landscape screening.	
Threshold 3.1-D: Would the revised Project create a new source of light or glare that would adversely affect day or nighttime views in the area?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Sensitive receptors, including residential uses would be exposed to higher levels of lighting during the nighttime hours for a temporary duration throughout project construction.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **AES-2b: Minimize fugitive light from portable sources used for construction**. *Passenger Train Layover Facility*	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Air Quality/Climate Change/Greenhouse Gases			
Threshold 3.2-A: Would the revised Project conflict with or obstruction of implementation of the applicable air quality plan?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project would not conflict with or obstruct implementation of appliable air quality plans. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable	Not Applicable
Threshold 3.2-B: Would the revised Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is a nonattainment area for a applicable federal or state ambient air quality standard?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Emissions associated with the revised Project would exceed the SMAQMD's and PCAPCD's daily NOx threshold.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure AQ-2a: Implement air district–recommended basic and enhanced best management practices to reduce construction-related NOX emissions (SMAQMD and PCAPCD).** CCJPA shall require construction contractors to implement basic and enhanced NOX construction mitigation measures recommended by SMAQMD and PCAPCD. Emission reduction measures shall include, at a minimum, the following applicable measures (additional measures may be identified by SMAQMD, PCAPCD, or the contractor, as appropriate). All measures shall be included in the final design and contractor specifications for the Project. • Minimize idling time either by shutting equipment off when not in use or by reducing the time of idling to 5 minutes [required by California Code of Regulations,	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)

		Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. Many construction companies comply with the idling restriction through equipment inspection and maintenance programs.
		• Maintain all construction equipment in proper working condition in accordance with manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
		• Submit to SMAQMD and PCAPCD a comprehensive inventory of all offroad construction equipment of 50 or more horsepower that shall be used an aggregate of 40 or more hours during any portion of construction.
		  ○ The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment.
		  ○ The Project representative shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and onsite foreman.
		  ○ This information shall be submitted at least 4 business days prior to the use of subject heavy-duty offroad equipment.
		  ○ The inventory shall be updated and submitted monthly throughout the duration of the Project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.
		• Provide a plan for approval by SMAQMD and PCAPCD demonstrating that the heavy-duty offroad vehicles (50	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		horsepower or more) to be used in Project construction, including owned, leased, and subcontractor vehicles, shall achieve a Project-wide fleet-average 20 percent NOX reduction and 45 percent particulate reduction compared to the most recent ARB fleet average. ○ This plan shall be submitted in conjunction with the equipment inventory. ○ Acceptable options for reducing emissions may include use of late model engines, low emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. • Ensure that emissions from all offroad diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. ○ Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. ○ Noncompliant equipment shall be documented and a summary provided to SMAQMD and PCAPCD monthly. ○ A visual survey of all in-operation equipment shall be made at least weekly. ○ A monthly summary of the visual survey results shall be submitted throughout the duration of the Project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		vehicles surveyed as well as the dates of each survey. • SMAQMD, PCAPCD, and/or other officials may conduct periodic site inspections to determine compliance. **Mitigation Measure AQ-2b: Use modern fleet for on-road material delivery and haul trucks during construction to reduce NOX emissions (SMAQMD and PCAPCD).** CCJPA shall ensure that construction contracts stipulate that all on road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site shall comply with EPA 2007 on road emission standards for PM10 and NOX (0.01 and 0.20 grams per break horsepower-hour, respectively). These PM10 and NOX standards were phased in through the 2007 and 2010 model years on a percent of sales basis (50 percent of sales in 2007–2009 and 100 percent of sales in 2010). This mitigation measure assumes that all on road heavy-duty diesel trucks are compliant with EPA 2007 on road emission standards. **Mitigation Measure AQ-2c: Reduce construction emissions to below SMAQMD and PCAPCD NOX thresholds (SMAQMD and PCAPCD).** CCJPA shall ensure that construction-related emissions do not exceed SMAQMD's construction NOX threshold of 85 pounds per day. Potential measures in addition to those listed in Mitigation Measures AQ-2a and AQ-2b include but are not limited to those listed below. • Require the usage of EPA-rated Tier 3 or higher rated construction equipment. In general, the following NOX reductions can be achieved when replacing Tier 2 equipment (fleet average) with higher rated engine tiers.	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		• Tier 3—38 percent NOX reduction. • Tier 4 interim—68 percent NOX reduction. • Tier 4 final—94 percent NOX reduction. • Work with SMAQMD to purchase NOX credits to offset remaining NOX construction emissions exceeding SMAQMD thresholds. CCJPA shall also ensure that construction-related emissions do not exceed PCAPCD's construction NO_X threshold of 82 pounds per day. Potential measures include but are not limited to those listed below. • Require the usage of EPA-rated Tier 4 Final rated construction equipment. In general, replacing Tier 2 equipment with Tier 4 Final equipment can result in a 94% reduction in NO_X emissions. • Require the usage of EPA-rated Tier 4 locomotives for ballast hauling between quarries and the Project site. • Work with PCAPCD to purchase NO_X credits to offset remaining NO_X construction emissions exceeding PCAPCD thresholds.	
Threshold 3.2-C: Would the revised Project expose sensitive receptors to substantial pollutant concentrations?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. CO hot spots are not anticipated to occur. Construction activities would not result in exceedance of SMAQMD or PCAPCD health risk thresholds. Operational activities are not anticipated to	Not Applicable	Not Applicable

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	expose sensitive receptors to substantial pollutant concentrations. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Threshold 3.2-D: Would the revised Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No impact. The proposed Project would not create objectionable odors affecting a substantial number of people. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable	Not Applicable

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.2-E: Would the revised Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. GHG emissions generated by the revised Project would not exceed any published draft emissions thresholds or the net zero threshold used for this analysis. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable	Not Applicable
Threshold 3.2-F: Would the revised Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. Implementation of the revised Project would support CARB and SACOG strategies to reduce single-occupancy vehicle usage and increase alternative transportation, as well as attainment of regional and statewide GHG polices and reduction targets. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable	Not Applicable

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		Biological Resources	
Threshold 3.3-A: Would the revised Project 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 Wildlife or U.S. Fish and Wildlife Service?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Implementation of the revised Project has the potential to impact several sensitive or special status species and associated habitats during construction activities.	*Railroad Bridge Crossings* **Mitigation Measure BIO-1a: Install fencing and/or flagging to protect sensitive biological resources.** Prior to construction, UPRR's contractor shall install high-visibility orange construction fencing and/or flagging, as appropriate, along the perimeter of the work area adjacent to Environmentally Sensitive Areas (e.g., sensitive habitats and elderberry shrubs). Where specific buffer distances are required for sensitive biological resources, they shall be specified under the corresponding measures below. UPRR shall ensure that the final construction plans show the locations where fencing will be installed. The plans shall also define the fencing installation procedure. UPRR or contractor (at the discretion of UPRR) shall ensure that the fencing is maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities shall cease until the fencing is repaired or replaced. The Project's special provisions package shall provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within Environmentally Sensitive Area. **Mitigation Measure BIO-1b: Implement a worker environmental awareness training program for construction personnel.** Before any equipment staging, grading, or tree removal is undertaken in the PIA, UPRR shall prepare and implement a worker environmental awareness training program. The training program shall be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid effects	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		on sensitive biological resources (e.g., riparian habitat, active bird nests, bat roosts) located in the PIA and the penalties for not complying with applicable state and federal laws and permit requirements. The training program shall be delivered by a biologist who will inform all construction personnel about the life history and habitat requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of the BOs and other permits. The training program shall also cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during construction of the Build alternative. **Mitigation Measure BIO-1c: Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats.** UPRR shall retain a qualified biologist to implement the worker environmental awareness training program and to conduct periodic site visits during construction activities that involve ground disturbance (e.g., vegetation removal, grading, excavation, bridge construction) within or adjacent to Environmentally Sensitive Areas. The timing and frequency shall be determined through coordination with UPRR, but monitoring shall take place at least weekly. The purpose of the monitoring is to ensure that measures identified in this report are properly implemented to avoid and minimize effects on sensitive biological resources and to ensure that the Project complies with all applicable permit requirements and agency conditions of approval. The biologist shall ensure that fencing around Environmentally Sensitive Areas remains in place during construction and that no construction personnel, equipment, or runoff/sediment from the construction area enters Environmentally Sensitive Areas. The monitor shall	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		complete a monitoring log for each site visit, and a final monitoring report shall be prepared at the end of construction for submittal to CCJPA, the Federal Railroad Administration (FRA), and other overseeing agencies (i.e., CDFW, USFWS, and NMFS), as appropriate. **Mitigation Measure BIO-3: Implement measures to avoid long-term effects on special-status plants documented in the Project impact area.** If special-status plant species are found during the floristic survey, to the extent practicable and in consideration of other design requirements and constraints (e.g., meeting Project objectives and needs, avoidance of other sensitive resources) UPRR shall design the third track alignment to avoid or minimize potential impacts on special-status plants. If special-status plants cannot be avoided, UPRR shall consult with CDFW and USFWS (if federally listed species are found) to determine the appropriate compensatory measures for direct and indirect impacts that could result from Build Alternative construction. Measures may include preserving and enhancing existing populations, creation of offsite populations on Project mitigation sites through seed collection or transplantation, and restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals. A mitigation and monitoring plan shall be developed that describes how unavoidable effects on special-status plants will be compensated. **Mitigation Measure BIO-4: Implement measures to avoid and minimize impacts on valley elderberry longhorn beetles and their habitat.** A buffer zone of 100 feet or more shall be established and maintained around elderberry shrubs within the PIA, as feasible. Complete avoidance may be assumed when a 100-foot (or wider) buffer is established and maintained around elderberry	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		plants with stems measuring 1 inch or more in diameter at ground level. In addition, the following avoidance and minimization efforts shall be implemented for construction operations in the vicinity of any elderberry shrubs that are not removed. • All areas to be avoided during construction activities, specifically the 100-foot buffer zone around elderberry shrubs, shall be fenced and flagged. In areas where encroachment on the 100-foot buffer has been approved by USFWS, a minimum setback of at least 20 feet from the dripline of each elderberry shrub shall be provided to the extent practicable. In some cases, construction activity may be required within 20 feet of a shrub; in such cases, k-rails shall be placed at the greatest possible distance from the shrubs. • Signage shall be erected every 50 feet along the edge of avoidance areas with the following information: “This area is habitat of the valley elderberry longhorn beetle, a federally listed threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment.” The signage shall be clearly readable from a distance of 20 feet and shall be maintained for the duration of construction. • Preconstruction surveys shall be conducted for elderberry shrubs in the PIA and within 100 feet of the PIA. Preconstruction surveys shall be conducted to comply with mitigation measures. • Temporary construction impacts within the buffer area (i.e., within 100 feet of elderberry shrubs) shall be restored. If any portion of the buffer area is temporarily disturbed during construction, it shall be revegetated	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		with native plants and erosion control shall be provided. • No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant shall be used within 100 feet of any elderberry plant with one or more stems measuring 1 inch or more in diameter at ground level. All drainage water during and following construction shall be diverted away from elderberry shrubs. • A written description of how buffer areas are to be restored, protected, and maintained after construction is completed shall be provided to USFWS. Mowing of grass can occur from July through April to reduce fire hazard; however, no mowing should occur within 5 feet of elderberry shrub stems. Mowing shall be conducted in a manner to avoid damaging shrubs. • Dirt roadways and other areas of disturbed bare ground within 100 feet of elderberry shrubs shall be watered at least twice a day to minimize dust emissions. Water shall not be sprayed directly on elderberry shrubs to avoid attracting Argentine ants. • For those shrubs that require being moved, direct impacts on valley elderberry longhorn beetles could occur during transplanting. Transplanting of elderberry shrubs has the potential to result in take of individual beetles because larvae or adults, if present in the stems, could be crushed or dislodged from the stems and become separated from the shrub. Transplanted elderberry shrubs may also experience stress, decline in health, or die due to changes in soil, hydrology, microclimate, or associated vegetation. The following measures shall be implemented in the event that	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		transplantation or replacement of existing elderberry shrubs is required. ○ The transplantation guidelines outlined in the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (U.S. Fish and Wildlife Service 1999) shall be followed. These transplantation guidelines dictate the necessary timing and details of the transplanting. At the discretion of USFWS, shrubs that are unlikely to survive transplantation because of poor condition or location, or plants that would be extremely difficult to move because of access problems, may be exempted from transplantation. ○ The loss of elderberry shrubs that must be transplanted or removed to facilitate construction of the Project shall be mitigated according to the requirements contained in the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (U.S. Fish and Wildlife Service 1999). Elderberry shrubs shall be transplanted to or replaced in an offsite conservation area along with the appropriate number of elderberry seedlings/cuttings and associative native species as described in the Guidelines. ○ In cases where transplantation is not possible, minimization ratios shall be increased to offset the additional habitat loss. ○ Each elderberry stem measuring 1 inch or more in diameter at ground level that is adversely affected (i.e., transplanted, removed, or trimmed) shall be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems) depending	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		on the size class of the affected stem, presence or absence of exit holes, and whether the shrub is located in a riparian or a nonriparian area. **Mitigation Measure BIO-10a: Implement measures to avoid and minimize impacts on Swainson's hawk and other nesting raptors.** UPRR shall implement the following measures to avoid and minimize impacts on Swainson's hawk and other nesting raptors. • If construction activities occur during the Swainson's hawk nesting period (February 15– September 15), UPRR shall retain a qualified biologist to conduct preconstruction surveys to identify active nests in accessible areas within 0.5 mile of the PIA according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley established by the Swainson's Hawk Technical Advisory Committee (2000). The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no more than 14 days before the beginning of construction for all Project phases. If no nests are found, no further measures are required. • If active nests are found, impacts on nesting Swainson's hawk shall be avoided by establishment of a 1,000-foot no-disturbance buffer between the nest and Project activities. No Project activity shall commence within the buffer area until a qualified biologist confirms that any young have fledged and the nest is no longer active. The size of the buffer may be adjusted if a qualified biologist and the City of Sacramento, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nesting hawks. If the buffer distance is reduced, nest monitoring may be required	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		by CDFW to ensure that the Project does not result in adverse effects (nest failure). • If construction begins during the typical breeding season for other raptors (February 15– September 15), preconstruction surveys shall be conducted by a qualified biologist within 72 hours prior to commencement of construction to determine presence/absence of nests in and directly adjacent to the BSA. If no nests are found during the survey, no further actions are necessary. If construction begins outside the breeding season, no preconstruction surveys are necessary. • If active nests for other raptors are identified during the preconstruction surveys, they shall be protected during the breeding season while the nest is occupied by adults or young. The occupied nest shall be monitored by a qualified biologist to determine when the nest is no longer in use. Protection will include the establishment of a 500-foot no-disturbance buffer around the nest, and highly visible temporary construction fencing will delineate the identified buffer zone. This buffer may be reduced in areas with dense vegetation, buildings, or other habitat features between Project activities and the active nest, or as determined by a qualified biologist coordinating with CDFW. No construction shall take place within this buffer zone unless approved by CDFW. **Mitigation Measure BIO-11: Implement measures to avoid and minimize impacts on other migratory birds.** UPRR shall implement the following measures to avoid and minimize impacts to other migratory birds. • If construction begins during the typical breeding season for migratory birds (February 15– September	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		15), preconstruction surveys shall be conducted by a qualified biologist within 72 hours prior to commencement of construction to determine presence/absence of nests in and directly adjacent to the BSA. If no nests are found during the survey, no further actions are necessary. If construction begins outside the breeding season, no preconstruction surveys are necessary. • If active bird nests are identified during the preconstruction surveys, they shall be protected during the breeding season while the nest is occupied by adults or young. The occupied nest shall be monitored by a qualified biologist to determine when the nest is no longer in use. Protection shall include the establishment of a minimum 50- foot no-disturbance buffer around the nest and highly visible temporary construction fencing will delineate the identified buffer zone. The extent of the buffer shall be determined by a qualified biologist, coordinating with USFWS as necessary, and shall be based on the species, type of construction activity, presence of barriers between the nest and Project activities, and ambient noise levels. The following additional avoidance and minimization measures shall be incorporated if nesting barn or cliff swallows, black phoebes, purple martins, or song sparrows are identified in the BSA. Swallows, black phoebes, and purple martins could attempt to establish nests and/or occupy existing nests under bridges in the BSA prior to construction. The following measures shall be followed to prevent impacts on bridge-nesting swallows, black phoebes, or other migratory birds. • All existing unoccupied swallow and black phoebe nests found on the undersides of the bridges shall be	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		removed between September 16 and February 14 prior to the year of construction. • Exclusionary netting shall be installed around the undersides of the bridges before February 15 of the construction year to prevent new nests from being constructed and to prevent the reoccupation of existing nests that were not removed. Netting will remain in place until the end of the typical nesting season (September 15) or the completion of construction activities, whichever is first. During the nesting season, the netting shall be monitored weekly to ensure that it remains intact and does not entrap birds. More frequent monitoring visits shall be made as necessary, especially in areas with high foot-traffic. *Passenger Train Layover Facility* **Mitigation Measure BIO-1a: Install fencing and/or flagging to protect sensitive biological resources.** **Mitigation Measure BIO-1b: Implement a worker environmental awareness training program for construction personnel.** **Mitigation Measure BIO-1c: Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats.** **Mitigation Measure BIO-3: Implement measures to avoid long-term effects on special-status plants documented in the Project impact area.** **Mitigation Measure BIO-5: Compensate for direct and indirect effects on vernal pool fairy shrimp and vernal pool tadpole shrimp habitat.** UPRR shall compensate for direct and indirect effects on vernal pool fairy shrimp and vernal pool tadpole shrimp habitat by implementing habitat	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		preservation and creation as mitigation. Mitigation credits shall be purchased prior to commencement of any Project activities that could result in habitat loss or degradation. • **Habitat preservation:** UPRR shall compensate for the direct permanent and temporary loss of habitat and indirect (habitat degradation) impacts on habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp at a ratio of 2:1 by purchasing vernal pool preservation credits from a USFWS-approved conservation bank. • **Habitat creation:** UPRR shall compensate for the direct permanent or temporary loss of habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp at a ratio of 1:1 by purchasing vernal pool creation credits from a USFWS-approved conservation bank. **Mitigation Measure BIO-11: Implement measures to avoid and minimize impacts on other migratory birds.**	
Threshold 3.3-B: Would the revised Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? **Threshold 3.3-C:** Would the revised Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Implementation of the revised Project sensitive habitats during construction activities.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure BIO-1a: Install fencing and/or flagging to protect sensitive biological resources.** **Mitigation Measure BIO-1b: Implement a worker environmental awareness training program for construction personnel.** **Mitigation Measure BIO-1c: Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats.** **Mitigation Measure BIO-1d: Compensate for temporary and permanent impacts on waters of the United States, including wetlands.** To compensate for temporary and permanent Project impacts on waters of the United States,	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
the Clean Water Act (including, but not limited to, marshes, vernal pools, coastal wetlands, etc.) through direct removal, filling, hydrological interruption, or other means?		UPRR shall purchase credits at an approved mitigation bank to ensure no net loss of wetland functions and values. The acreage or value of compensatory mitigation for the loss of aquatic habitat for vernal pool crustaceans and giant gartersnake (discussed in Impacts BIO-5 and BIO-7) may be counted toward compensatory mitigation for waters of the United States. The minimum compensation ratio for wetlands and other waters shall be 1:1 (1 acre of wetland or other waters habitat credit for every 1 acre of impact) to ensure no net loss of habitat functions and values.	
Threshold 3.3-D: Would the revised Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less Than Significant. The revised Project is not locate within an established wildlife corridor or wildlife nursery site. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable	Not Applicable
Threshold 3.3-E: Would the revised Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less Than Significant. Construction of the revised Project may require the removal of existing trees. However, the revised Project would be required to comply with local tree ordinances. The revised Project	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Threshold 3.3-F: Would the revised Project conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project is not located within a HCP, NCCP, or other local, regional, or state HCP. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.
		Cultural Resources	
Threshold 3.4-A: Would the revised Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? **Threshold 3.4-B:** Would the revised Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Ground disturbing activities associated with the revised Project may cause a substantial adverse change of a previously unidentified historical or archaeological cultural resource.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure CUL-1a: Conduct archaeological presence/absence testing in areas of the APE adjacent to the American River prior to final design.** Prior to completion of final design, CCJPA shall retain a qualified archaeologist meeting the Secretary of Interior's Standards for archeological documentation, to conduct archaeological presence/absence testing in areas of the APE adjacent to the American River where bridge construction activities shall occur. The purpose of the testing will be to determine whether buried archaeological resources are present in these portions of the APE. The study shall include	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		contacting the NAHC and interested parties, conducting presence/absence testing, and reporting. The testing shall consist of at least six mechanically excavated trenches, three on each side of the American River where the proposed bridge would be constructed. All attempts shall be made to place trenches in those locations where the proposed bridge footings would be located. Trenches shall measure at least 15 feet long and shall be excavated with a backhoe equipped with a bucket at least 3 feet wide. Trenches shall be excavated to at least 2 feet below the maximum depth of ground disturbance that would result from bridge construction, or until trenching is no longer feasible or safe. An archaeologist shall study excavated sediments placed in backfill piles on a backhoe bucket-by-bucket basis and shall examine trench sidewalls for evidence of archaeological deposits. When potential archaeological material is observed in either excavated sediments or trench sidewalls, an archaeologist shall enter trenches to better view the material and determine its nature. Buried archaeological material can range from a single flake (lithic debitage) or discolored soil to an obvious buried midden component. Indicators of archaeological sensitivity or the presence of archaeological deposits may include patches of reddish oxidized soils, fire affected rock (FAR), carbon, bone, shell, or artifacts. The location and potential extent of the site shall be taken into consideration to determine appropriate next steps. For the purposes of the subsurface survey, the threshold for terminating the investigation and requiring either	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		avoidance measures or archaeological evaluative testing shall be the identification of more than three pieces of lithic debitage per trench, any midden soil, formal tools, any culturally associated prehistoric faunal remains, any discrete prehistoric or historic-period features, or historic-period refuse with multiple artifact types. The archaeologist shall document the results of the testing in a cultural resources technical report. The report shall include: (1) a summary of relevant background information; (2) a complete discussion of methods and results; (3) recommendations of NRHP and CRHR eligibility for any identified resources; (4) assessment of Project impacts on the resources; and (5) recommended mitigation measures for any identified resources, if applicable. If a site is determined to be eligible for listing in the NHRP, further consultation with SHPO will be necessary for treatment of this site. Examples of potential treatment measures include modifying Project design for avoidance of identified archaeological resources and additional archaeological testing of the archaeological resources to evaluate them for NRHP-eligibility, eligibility as a historical resource pursuant to CEQA Guidelines Section 15064.5, and eligibility as a unique archaeological resource pursuant to PRC Section 21083.2. **Mitigation Measure CUL-1b: Conduct archaeological construction monitoring during ground-disturbing activities in archaeologically sensitive areas and halt work if previously unrecorded cultural resources are encountered and determined to be NRHP eligible.** CCJPA shall retain an archaeologist to conduct archaeological construction monitoring during ground-disturbing construction activities in previously undisturbed soil in archaeologically sensitive areas as identified in the	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		cultural resources inventory and evaluation report (ICF International 2014). The monitoring shall be supervised by an archaeologist that meets the Secretary of Interior's Standards for archeological documentation. The onsite archaeological monitor shall observe the ground-disturbing activities to ensure that no archaeological material is present or disturbed during those activities. CCJPA may invite, and retain if so desired, a Native American monitor to assist in the archaeological monitoring. If potential archaeological material is observed, all work within 100 feet of the find shall cease, and the archaeologist and (if appropriate) a Native American representative shall assess the significance of the find. If the find is determined to be potentially (1) NRHP-eligible; (2) a historical resource pursuant to CEQA Guidelines Section 15064.5; or (3) a unique archaeological resource pursuant to PRC Section 21083.2, CCJPA shall consult with SHPO, appropriate Native American tribes, and other appropriate interested parties to determine treatment measures pursuant to 36 CFR 800.13.	
Threshold 3.4-C: Would the revised Project disturb any human remains, including those interred outside of formal cemeteries?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Ground disturbing activities associated with construction may encounter previously unidentified or unmarked burials containing human remains.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure CUL-3: Conduct archaeological construction monitoring during ground-disturbing activities in archaeologically sensitive areas and halt work if human remains are encountered.** CCJPA shall retain an archaeologist to conduct archaeological construction monitoring during ground-disturbing construction activities in previously undisturbed soil in archaeologically sensitive areas as identified in the cultural resources inventory and evaluation report (ICF International 2014). The monitoring shall be supervised by an archaeologist that meets the Secretary of Interior's Standards for Archeology. The onsite archaeological	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		monitor shall observe the ground-disturbing activities to ensure that no human remains are present or disturbed during those activities. CCJPA may invite, and retain if so desired, a Native American monitor to assist in the archaeological monitoring. During any Project excavation, regardless of the presence of an archaeological monitor, if human remains (or remains that are suspected to be human) are discovered, all work shall cease in the vicinity of the find (within a minimum of 100 feet) and the appropriate county coroner shall be notified immediately. If the coroner determines the remains to be Native American in origin, the coroner shall be responsible for notifying the NAHC, which will appoint a most-likely descendant (MLD) (PRC Section 5097.99). The archaeologist, CCJPA, lead federal agency, SHPO, and MLD shall make all reasonable efforts to develop an agreement for the dignified treatment of human remains and associated or unassociated funerary objects (CCR Title 14 Section 15064.5[d]). The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. The MLD shall have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). If the MLD does not agree to the reburial method, the Project shall follow PRC Section 5097.98(b), which states, “the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.”	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.4-D: Would the revised Project cause a substantial adverse change in the significance of a tribal cultural resource, as defined by PRC §21074, and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined by PRC §5024.1? **Threshold 3.4-E:** Would the revised Project cause a substantial adverse change in the significance of a tribal cultural resource, as defined by PRC §21074, and that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant to a California Native tribe pursuant to PRC §5024.1?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. While there are no known tribal cultural resources located in or near where the improvements would occur, there is still a possibility that tribal cultural resources may be encountered during ground-disturbing activities.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure CUL-1a: Conduct archaeological presence/absence testing in areas of the APE adjacent to the American River prior to final design.** **Mitigation Measure CUL-1b: Conduct archaeological construction monitoring during ground-disturbing activities in archaeologically sensitive areas and halt work if previously unrecorded cultural resources are encountered.**	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.
Geology and Soils			
Threshold 3.5-A: Would the revised Project result in exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault, strong	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less Than Significant. The revised Project is not located near a known earthquake fault and geotechnical hazards (landslides, embankment	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides? **Threshold 3.5-C:** Would the revised Project be located on a geologic unit that is unstable, or would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, liquefaction, or collapse? **Threshold 3.5-D:** Would the revised Project be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	failures, ground subsidence, or collapse) are not anticipated due to the existing topography. The revised Project the railroad would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies, such as the preparation of a soil subsurface investigation seismic design recommendations. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Threshold 3.5-B: Would the revised Project result in substantial soil erosion or loss of topsoil?	*Railroad Bridge Crossings and Passenger Train Layover Facility*	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	Less Than Significant. Adherence to BMPs and measures identified as part of NPDES permit requirements would minimize construction impacts to a less than significant level. Operation of the revised Project would not result in additional soil erosion impacts. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Threshold 3.5-E: Would the revised Project 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?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. No septic systems or alternative wastewater disposal systems are proposed as part of the revised Project. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.
Threshold 3.5-F: Would the revised Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. No mineral extraction zones or resources are identified as occurring in the area of the revised Project. The revised Project would not change the	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.5-G: Would the revised Project 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?	significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Threshold 3.5-H: Would the revised Project directly or indirectly destroy a unique paleontological resource or site or unique geologic features?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. While there are no known paleontological resources located in or near where the improvements would occur, there is still a possibility that previously undiscovered paleontological resources may be encountered during ground-disturbing activities.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure GEO-8a: Educate construction personnel in recognizing fossil material.** Prior to construction, UPRR shall ensure that all construction personnel receive training provided by a qualified professional paleontologist who is experienced in teaching non specialists to ensure that construction personnel can recognize fossil materials in the event any are discovered during construction. **Mitigation Measure GEO-8b: Stop work if substantial fossil remains are encountered during construction.** If substantial fossil remains (particularly vertebrate remains) are discovered during earth disturbing activities, the construction contractor shall stop activities immediately until a State registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. UPRR shall be responsible for ensuring that	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		recommendations regarding treatment and reporting are implemented. **Mitigation Measure GEO-8c: Retain a qualified professional paleontologist to monitor significant ground-disturbing activities.** Prior to construction, UPRR shall retain a qualified professional paleontologist as defined by SVP's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) to monitor activities with the potential to disturb sensitive paleontological resources. Data gathered during detailed Project design shall be used to determine the activities that will require the presence of a monitor. In general, these activities include any ground-disturbing activities involving excavation deeper than 3 feet in areas with high potential to contain sensitive paleontological resources. Recovered fossils shall be prepared so that they can be properly documented. Recovered fossils shall then be curated at a facility that will properly house and label them, maintain the association between the fossils and field data about the fossils' provenance, and make the information available to the scientific community.	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Hazards and Hazardous Materials			
Threshold 3.6-A: Would the revised Project result in the creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? **Threshold 3.6-B:** Would the revised Project result in the creation of 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? **Threshold 3.6-D:** Would the revised Project result in the placement of Project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Construction and operational activities associated with the revised Project would use limited quantities of miscellaneous hazardous materials (e.g., petroleum-based and could result in accidental spills of hazardous materials. Contaminants could be present in soils in areas of proposed improvements and released through Project-related construction activities.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials.** Before the commencement of Project construction, the construction contractor shall ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials per all applicable regulations (e.g., OSHA hazardous materials standards listed in 29 CFR 1910 Subpart H), and staging areas where hazardous materials would be stored during construction shall be identified in accordance with applicable state and federal regulations. Similarly, during operations, UPRR and CCJPA personnel shall be likewise trained in the safe handling and storage of hazardous materials. **Mitigation Measure HAZ-2a: Conduct Phase II Environmental Site Assessment studies.** Prior to construction of the Build Alternative, Phase II soil studies shall be conducted to assess areas of proposed improvements to provide site-specific data upon which to rely when developing the Soil Management Plan (discussed in Mitigation Measure HAZ-3). The Phase II studies can include but are not limited to the following. • A scope of work consisting of prefield activities, such as preparation of a Health and Safety Plan (HASP), marking boring locations, and obtaining utility clearance; and field activities, such as identifying appropriate sampling procedures, health and safety measures, chemical testing methods, and quality	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		assurance/quality control (QA/QC) procedures in accordance with the ASTM Standard. • Necessary permits for boring advancement. • A Sampling and Analysis Plan (SAP) in accordance with the scope of work. • Laboratory analyses conducted by a state-certified laboratory. **Mitigation Measure HAZ-2b: Prepare a Soil Management Plan.** The Soil Management Plan (SMP) shall address the concerns associated with releases of contaminated soil within and adjacent to the railroad ROW and railyard areas. The SMP shall include specifications for procedures to manage affected soil during construction.	
Threshold 3.6-C: Would the revised Project result in the emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. One school (Courtyard Private School) was identified as being within 0.25 mile of the Project corridor for the railroad bridge crossing component in the 2015 Draft EIR. The modifications associated with the railroad bridge crossings as part of the revised Project does not change the existing school facilities located in the area. In the 2015 Draft EIR, one school (Adelante High School) was	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials** **Mitigation Measure HAZ-2a: Conduct Phase II Environmental Site Assessment studies** **Mitigation Measure HAZ-2b: Prepare a Soil Management Plan**	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	identified and is located adjacent to the originally proposed passenger train layover facility site. With the change in passenger train layover facility site, two additional school facilities (Roseville Joint Union High School and Independence High School) were identified and are located within 0.25 mile of the revised passenger train layover facility. Construction and operation of the revised passenger train layover facility would not change the type or handling of materials that would be used. Construction and operational activities would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies.		
Threshold 3.6-F: Would the revised Project result the placement of Project-related facilities in the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the Project corridor?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project is not located in the vicinity of a private airstrip. The revised Project would not change the significance conclusions or result in any new significant impacts	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	not previously identified in the 2015 Draft EIR.		
Threshold 3.6-G: Would the revised Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. During construction activities, the revised Project could interfere with traffic through movement of construction vehicles and while improvements are being installed.	**Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).**	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.
Threshold 3.6-G: Would the revised Project expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. During construction activities, equipment and vehicles containing flammable fuels may come in contact with vegetated areas and could accidentally spark and ignite the vegetation.	**Mitigation Measure HAZ-4: Minimize risk of wildland fire.** Before the commencement of construction of the Build Alternative, the construction contractor shall ensure that staging areas, welding areas, or other areas slated for construction equipment are cleared of dried vegetation or other materials that could serve as fire fuel. Any construction equipment that normally includes a spark arrester shall be equipped with an arrester in good working order.	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Hydrology and Water Quality			
Threshold 3.7-A: Would the revised Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? **Threshold 3.7-E:** Would the revised Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Ground-disturbing activities would disturb existing vegetation cover and soils, would expose areas of disturbed ground that could be subject to rainfall and erosion, and could cause temporary discharges of sediment and other contaminants into receiving waters or onto the ground where they can be carried into receiving waters.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials.** **Mitigation Measure HAZ-2a: Conduct Phase II Environmental Site Assessment studies** **Mitigation Measure HAZ-2b: Preparation of a Soil Management Plan**	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.
Threshold 3.7-B: Would the revised Project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less Than Significant. The revised Project would not require the use of groundwater supplies during construction or operation and is not located in an area identified for groundwater recharge. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.7-C: Would the revised Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. Result in a substantial erosion or siltation on- or off-site. ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. iv. Impede or redirect flood flows.	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less Than Significant. The revised Project would not substantially alter existing drainage patterns in a manner that would result in erosion, siltation, or flooding on or offsite. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.
Threshold 3.7-D: Would the revised Project be located In flood hazard, tsunami, or seiche zones, risk release of	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project geographically removed from areas where the potential for	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
pollutants due to project inundation?	inundation by seiche, tsunami, or mudflow could occur. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR,		
	Land Use and Planning		
Threshold 3.8-A: Would the revised Project physically divide an established community?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project would not physically divide an established community. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.
Threshold 3.8-B: Would the revised Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project would not conflict with any land use plan, policy, or regulation of an agency with jurisdiction over the Project. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.8-C: Would the revised Project conflict with any applicable habitat conservation plan or natural community conservation plan?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project is not located within an applicable habitat conservation plan or natural community conservation plan. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.
		Noise and Vibration	
Threshold 3.9-A: Would the revised Project expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies? **Threshold 3.9-C:** Would the revised Project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? **Threshold 3.9-D:** Would the revised Project result in a substantial temporary or periodic increase in ambient	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Noise-sensitive receivers are present within the impact distance for all construction scenarios. Construction and operational activities have the potential to exceed noise level standards at noise-sensitive receivers.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure NOI-1a: Implement Noise Control Plan and noise-reducing construction practices.** The construction contractor shall implement noise-reducing construction practices to limit construction noise to the maximum levels recommended by FTA. On days when work is limited to the hours of 7:00 a.m. to 10:00 p.m., the 1-hour Leq at any noise-sensitive receiver shall be limited to 77 dBA where feasible. On days when work will include nighttime activity, the 1-hour Leq at any noise sensitive receiver shall be limited to 69 dBA. The construction contractor shall prepare a Noise Control Plan that demonstrates how the contractor will comply with the noise limits specified above. Measures that can be implemented to control noise include but are not limited to the following.	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
noise levels in the project vicinity above levels existing without the project?		• Use specialty equipment with enclosed engines and/or high-performance mufflers. • Locate equipment and staging areas as far from noise-sensitive receivers as possible. • Limit unnecessary idling of equipment. • Install temporary noise barriers between noise sources and noise sensitive uses. • Route construction-related truck traffic away from residential streets to the extent permitted by the relevant jurisdiction. • Avoid impact pile driving when possible (the current construction plans do not include any impact pile driving). **Mitigation Measure NOI-1b: Relocate special trackwork farther from sensitive receivers or install low-impact frog.** One of the two noise mitigation options below shall be implemented to reduce predicted noise levels near crossovers to below the FTA/FRA moderate noise impact threshold. • Relocate the special trackwork so that it is farther from sensitive receivers. • If the special trackwork cannot be relocated away from sensitive receivers, install a low-impact frog.	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
Threshold 3.9-B: Would the revised Project expose persons to or generate excessive groundborne vibration or groundborne noise levels?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. Construction associated with the revised Project would involve site grading, foundation work, and trackwork along portions of the Project corridor that are adjacent to sensitive receptors which may generate vibration levels greater than the 0.016 in/sec threshold for annoying and intrusive vibration.	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure NOI-2a: Implement vibration-reducing construction practices.** In the event that vibration generated by soil compaction and other high-vibration construction processes cause vibration inside residences that is intrusive to building occupants, one or more of the measures below shall be implemented to reduce the potential for annoyance from construction vibration. • Avoid performing high-vibration construction activities such as soil compaction and pile driving near residences. For example, use drilled piles instead of impact pile driving. • Alert residents and building owners when there will be construction activities that could cause vibration amplitudes sufficient to be intrusive to building occupants. An understanding as to what is causing vibration can often reduce the potential for annoyance. • Provide residents and building owners a liaison to contact for reporting vibration levels that are annoying. If a sufficient number of complaints are made, measure the vibration levels to determine if vibration reduction efforts are required.	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.
Threshold 3.9-E: Would the revised Project be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project is not located within the vicinity of a public or private airstrip, construction or operation of the revised Project would not result	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
the project area to excessive noise levels? **Threshold 3.9-F:** Would the revised Project be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	in the exposure of people working in the Project corridor to excessive noise levels. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Population and Housing			
Threshold 3.10-A: Would the revised Project result in the displacement of a large number of people, housing, or businesses, necessitating the construction of replacement housing or business space elsewhere?	*Railroad Bridge Crossings* Less Than Significant. No housing or businesses would be displaced with the replacement and realignment of the Elvas railroad bridge crossings. However, the replacement and realignment of the B Street railroad bridge crossing would require the demolition of one building associated with a self-storage facility and two buildings associated with the existing Caltrans maintenance yard facilities. It is anticipated that the existing self-storage activities would continue to operate and that the business would not be required to relocate. It is also anticipated that maintenance activities and employees at the existing	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	Caltrans maintenance yard facility would be relocated to other Caltrans maintenance facilities. Therefore, the revised Project would not result in the displacement of existing housing or businesses that would necessitate the construction of replacement facilities elsewhere. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. *Passenger Train Layover Facility* Less Than Significant. Construction of the revised passenger train layover facility would occur within existing UPRR ROW which would require the removal of uses associated with two existing UPRR tenants,. It is anticipated that operations associated with these two existing UPRR tenants would shift over to other existing locations. The revised Project would not result in the displacement of existing housing or a substantial number of businesses that would necessitate the construction of		

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	replacement facilities elsewhere. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Threshold 3.10-B: Would the revised Project induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? **Threshold 3.10-C:** Would the revised Project cause a substantial change in local employment or the labor force (e.g., through extension of roads or other infrastructure)?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Construction activities associated with the revised Project are not anticipated to induce substantial unplanned population growth, as construction activities are temporary and would be filled by those who reside within the region. Operation of the revised Project components would not result in changes in land use that would result in or indirectly influence population growth. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.
Threshold 3.10-D: Would the revised Project result in a substantial reduction in community cohesion?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No impact. The revised Project would occur within an area designated for transportation uses and would not result in the physical division of an established community or result	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	in changes of community character or cohesion in the Project study area. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
		Transportation	
Threshold 3.11-A: Would the revised Project generate more VMT than accounted for in the MTP/SCS?	*Railroad Bridge Crossings and Passenger Train Layover Facility* No Impact. The revised Project would not result in generation of VMT greater than accounted for in the MTP/SCS. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.	Not Applicable.	Not Applicable.
Threshold 3.11-B: Would the revised Project cause traffic delays or detours during construction activities?	*Railroad Bridge Crossings and Passenger Train Layover Facility* Potentially Significant. While most of the construction activity would occur within the UPRR right-of-way (ROW), construction of certain elements of the revised Project could affect drivers, transit service users, bicyclists,	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** CCJPA, in coordination with UPRR, shall prepare site-specific TMPs for each road crossing prior to the initiation of construction. UPRR shall be responsible for project management or may contract with one or more construction management firms to in ensure that construction contractors' crews and schedules are coordinated and that the plans and TMP	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	and pedestrians during construction activities.	specifications are being followed. The TMPs shall address the specific steps to be taken before, during, and after construction to minimize transportation impacts on all modes, including the mitigation measures and environmental commitments identified in this environmental document. Such measures include but are not limited to signage, flagging, limits on periods of closure, and provision for passage of emergency vehicles during construction. UPRR shall be responsible for developing the TMPs in consultation with the applicable transportation entities listed below. • Caltrans for state and federal roadway facilities. • Local agencies including City of Sacramento, County of Sacramento, City of Citrus Heights, and City of Roseville for local transportation facilities such as roads and bike paths. • Transit providers, including but not limited to, Regional Transit and Roseville Transit. • Rail operators. • U.S. Coast Guard. • City and county parks departments. • ~~California Department of Parks and Recreation (DPR)~~ Sacramento County Department of Regional Parks for work in the American River Parkway. UPRR shall ensure that the TMPs are implemented prior to beginning construction at any given site, including in-water construction sites. If necessary to minimize unexpected operational impacts or delays experienced during real-time	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		construction, UPRR shall be responsible for modifying the TMP in coordination with the appropriate transportation entities to address these effects. Each TMP shall include the following provisions, as applicable to the conditions. • Description and deployment of signage warning of roadway surface conditions such as loose gravel, steel plates, or similar conditions that could be hazardous to road cycling activity on roadways open to bicycle traffic. • Description and deployment of signage and barricades to be used around the work sites. • Description and deployment of buoys, signage, or other effective means to warn boaters of in-water work areas and restrictions on access. Description of warning devices and signage (e.g., buoys labeled “boats keep out” or “no wake zone”) in compliance with U.S. Coast Guard Private Aid to Navigation requirements and effective during non-daylight hours and periods of dense fog. • Use of flag people or temporary traffic signals/signage as necessary to slow or detour traffic. • Notifications for the public, emergency service providers, cycling organizations, bike shops, schools, the U.S. Coast Guard, boating organizations, marinas, city and county parks departments, and DPR, where applicable, describing construction activities that could affect transportation and water navigation.	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		• Outreach (through public meetings and/or flyers and other advertisements). • Procedures for construction area evacuation in the case of an emergency declared by county or other local authorities. • Designation of alternate access routes via detours and bridges to maintain continual circulation for local travelers in and around construction zones, including bicycle riders, pedestrians, and boaters, where applicable. • Description of construction staging areas, material delivery routes, and specification of construction vehicle travel hour limits. • Notifications to commercial and leisure boating communities of proposed operations in the waterways, including posting notices at local marinas and public launch ramps. This information shall provide details regarding construction site location(s); construction schedules; and identification of no-wake zones, speed-restricted zones, and detours, where applicable • No-wake zones and speed restrictions shall be established as part of development of the site-specific plans and shall be designated to protect the safety of construction workers and recreationists.	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		• Scheduling for oversized material deliveries to the work site to minimize peak hour traffic conflicts, and location of haul routes. • Provisions that direct haulers pull over in the event of an emergency. If an emergency Vehicle is approaching on a narrow two-way roadway, specify measures to ensure that appropriate maneuvers shall be conducted by the construction vehicles to allow continual access for the emergency vehicles at the time of an emergency. • Control for any temporary road closure, detour, or other disruption to traffic circulation, including any temporary partial closures of the water channel. • Designation and posting of offsite vehicle staging and parking areas. • Posting of information for contact in case of emergency or complaint. • Designation of daily construction time windows during which construction is restricted or rail operations would need to be suspended for any activity within the UPRR ROW. • Coordination with rail providers (i.e., Amtrak, UPRR) to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures. • Coordination with transit providers (i.e., RT, Roseville Transit) to develop, where feasible, daily construction time windows during which transit	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
		operations would not be either detoured or substantially slowed. • Routine posting of information to the 511.org website regarding construction delays and detours • Other actions to be identified and developed as necessary by the construction manager/resident engineer to ensure that temporary impacts on transportation facilities are minimized.	
Threshold 3.11-C: Would the revised Project generate future parking demand that exceeds available supply in the vicinity of the Sacramento Valley Station or Roseville Station?	*Railroad Bridge Crossings* No Impact. The railroad bridge crossings are not located near the Sacramento Valley Station or Roseville Station. Therefore construction or operation of these railroad bridges would not generate future parking demand that exceeds available supply in the vicinity of the Sacramento Valley Station or Roseville Station. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. *Passenger Train Layover Facility* No Impact. Although the passenger train layover facility is located near the Roseville Station, construction workers would park their vehicles at	Not Applicable.	Not Applicable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	worksite and would not use station parking facilities. Once operational, the revised passenger train layover facility location also provides up to 22 employee parking spaces for train crews to start or finish their daily shifts. Therefore, operational activities associated with the revised passenger train layover facility would not contribute to parking shortages at the Roseville Station. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.		
Threshold 3.11-D: Would the revised Project cause vehicle queues at crossings to extend beyond available storage on the public roadway approaches?	*Railroad Bridge Crossings* No Impact. The railroad bridge crossings are existing grade separated rail bridges that span over the Business I-80. The modifications proposed for these bridge crossings would continue to remain grade separated bridges. Therefore, construction or operational activities associated with the railroad bridge crossings would not result in impacts associated with vehicle queues at at-grade crossings or result in any new	*Railroad Bridge Crossings* Not Applicable. *Passenger Train Layover Facility* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).**	*Railroad Bridge Crossings* Not Applicable. *Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	significant impacts not previously identified in the 2015 Draft EIR. *Passenger Train Layover Facility* Potentially Significant. Implementation of the revised Project would require additional modifications to the existing at-grade crossing at Tiger Way to accommodate rail layover track infrastructure. No additional modifications are anticipated to the existing at-grade crossing at Yosemite Street. The revised Project could contribute to short-term vehicle queues at the Tiger Way at-grade crossing while construction activities are underway at that location.		
Threshold 3.11-E: Would the revised Project disrupt existing public transit service or interferes with the implementation of planned public transit services? **Threshold 3.11-F:** Would the revised Project disrupt existing bicycle and pedestrian facilities or interferes with the implementation of planned facilities?	*Railroad Bridge Crossings* *Potentially Significant.* The existing railroad bridge crossings are not located near any existing stations and would not impact transit services currently provided or planned at existing stations. Modifications to the existing UPRR track for the bridge crossing located near the wye do cross the Two Rivers Trail, which is considered a bicycle/pedestrian facility. While not anticipated, construction	*Railroad Bridge Crossings and Passenger Train Layover Facility* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).**	*Railroad Bridge Crossings and Passenger Train Layover Facility* Less than Significant. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Significance Determination (Before Mitigation)	2015 EIR Mitigation Measures	Significance Determination (After Mitigation)
	activities may temporarily impact this bicycle/pedestrian facility. *Passenger Train Layover Facility* Potentially Significant. The revised passenger train layover facility would not be located at the existing Roseville Station and would not directly impact transit services currently provided at the existing Roseville Station. While not anticipated, construction activities may require temporary road detours within the Project area, which may impact existing public transit service and bicycle/pedestrian facilities adjacent to the revised passenger train layover facility.		

1.0 Introduction

This Draft Supplemental Environmental Impact Report (SEIR) was prepared in accordance with the California Environmental Quality Act (CEQA) and the State CEQA Guidelines §15132. The Capitol Corridor Joint Powers Authority (CCJPA) is the Lead Agency for the environmental review of the Sacramento to Roseville Third Main Track (Project or SR3T Project). The SEIR examines the potential effects of the proposed revised Project, which involves two components – the Railroad Bridge Crossings and the Passenger Train Layover Facility.

The proposed revised Project is described in detail in Section 2.0, Project Description. This section describes: (1) the general background of the revised Project; (2) the purpose and legal authority of the SEIR; (3) the scope and content of the SEIR; (4) lead, responsible, and trustee agencies; and, (5) the environmental review process required under the California Environmental Quality Act (CEQA).

1.1 Purpose and Use of this Draft SEIR

CCJPA has prepared this Draft SEIR to disclose to decision makers, public agencies, and the general public with information about the potential environmental effects of the revised Project. As set forth in the provisions of CEQA and implementing regulations, public agencies are charged with the duty to consider the environmental impacts of proposed development and to minimize these impacts where feasible while carrying out an obligation to balance a variety of public objectives, including economic, environmental, and social factors.

CEQA Guidelines §15121(a) states that an EIR is an informational document for decision-makers and the general public that analyzes the significant environmental effects of a project, identifies possible ways to minimize significant effects and describes reasonable alternatives to the project that could reduce or avoid its adverse environmental impacts. Public agencies with discretionary authority are required to consider the information in the EIR, along with any other relevant information, in making decisions on the project.

CEQA requires the preparation of an environmental impact report prior to approving any project which may have a significant effect on the environment. For the purposes of CEQA, the term “project” refers to the whole of an action which has the potential for resulting in a direct physical change or a reasonably foreseeable indirect physical change in the environment (CEQA Guidelines §15378[a]). With respect to the SR3T Project, CCJPA has determined that the proposed revisions are considered a “project” within the definition of CEQA.

In determining the level of environmental review needed for the revised Project, CCJPA as the Lead Agency reviewed CEQA Guidelines §15162 Subsequent EIRs and Negative Declarations, and §15163 Supplement to an EIR. These sections of the Guidelines provide direction with regard to when additional environmental review is appropriate.

The original SR3T Project is located in Sacramento County and Placer County between the existing Sacramento Valley Station and the existing City of Roseville Station (Figures 1-1 and 1-2). The SR3T Project proposed the construction and operation of approximately 17.8 miles of new main track within the existing rail corridor and identified the following improvements:

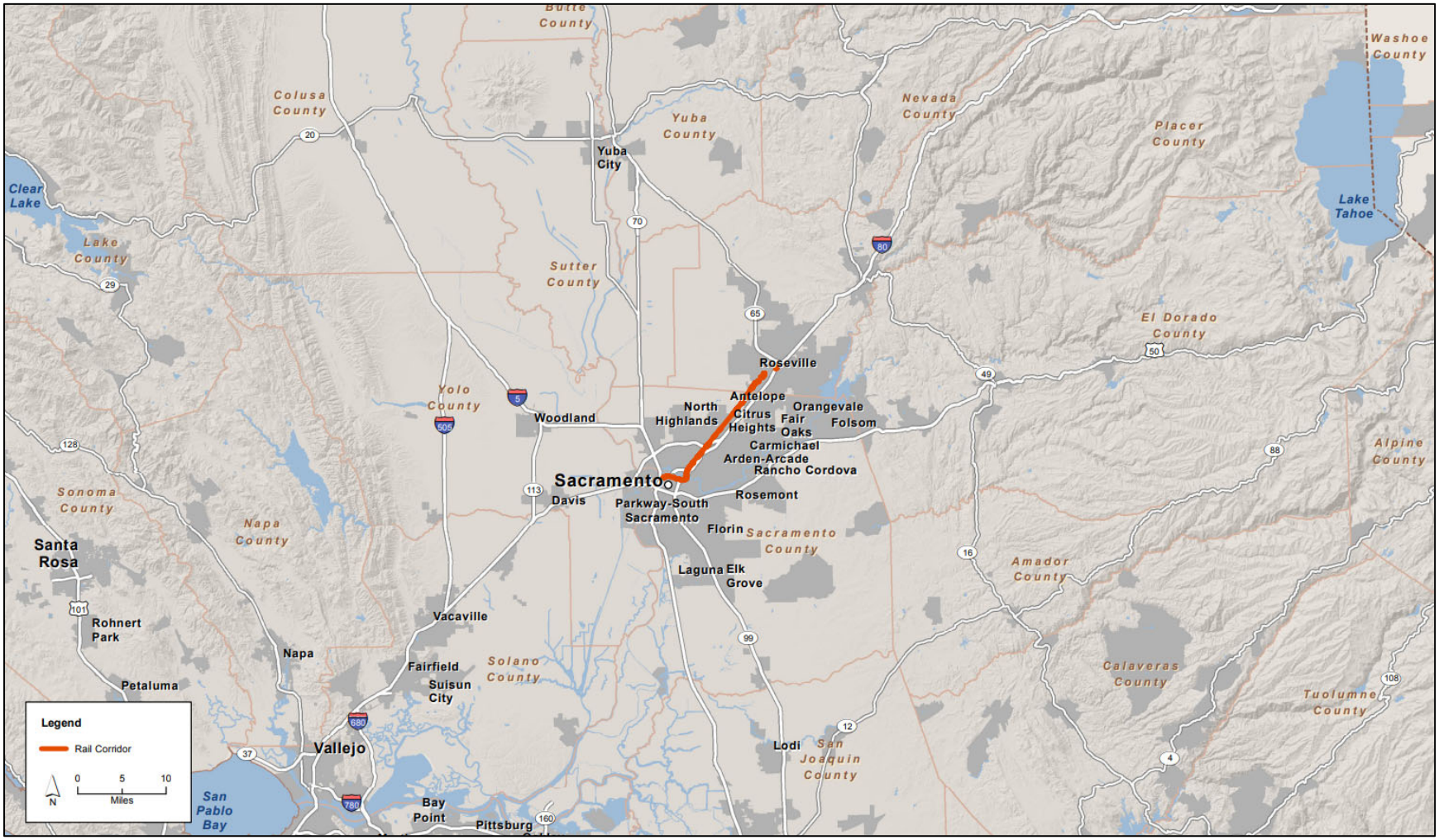
- Minor reconfiguration of the City of Roseville Station to accommodate increased Capitol Corridor service in the future.
- Grading and installation of new subgrade and drainage
- Placement of new rail and ties
- Special track work with turnouts, crossovers and associated switches and equipment
- New wayside track signals
- Eleven replaced railroad bridges, including a new bridge across the American River in Sacramento

Based on a preliminary review of the proposed modifications to the original Project, it has been determined that a SEIR would need to be prepared for CEQA compliance. The Final EIR for the SR3T Project was certified on November 18, 2015 (State Clearinghouse No. 2014072005). This supplement to the certified EIR will contain only the information necessary to make the previously certified EIR adequate for the Project as revised, would be given the same notice and public review as was given to the original draft EIR as per 14 CCR § 15087, and would be circulated by itself without re-circulating the previous draft or final EIR. Subsequent to that original CEQA certification, CCJPA is seeking to accommodate changes in design associated with the SR3T Project. The SR3T Project SEIR covers two revised Project components:

- *Railroad Bridge Crossings:* Supplemental analysis for up to three railroad bridge crossings across Business I-80 to accommodate changes in project design. This includes modifications (replacement and realignment) to the existing Elvas Underpass (Caltrans Bridge 24-0031) and to the existing B Street Underpass (Caltrans Bridge 24-0023) (Figure 1-3). The modified Elvas Underpass would consist of Elvas East Underpass and Elvas West Underpass. Elvas East Underpass would be a single track structure on the existing Union Pacific (UP) Fresno Subdivision. Elvas West Underpass would consist of a two track structure on the UP Martinez Subdivision. The modified B Street Underpass would consist of two separate track structures (e.g., two track and one single track structure) on the UP Martinez Subdivision.

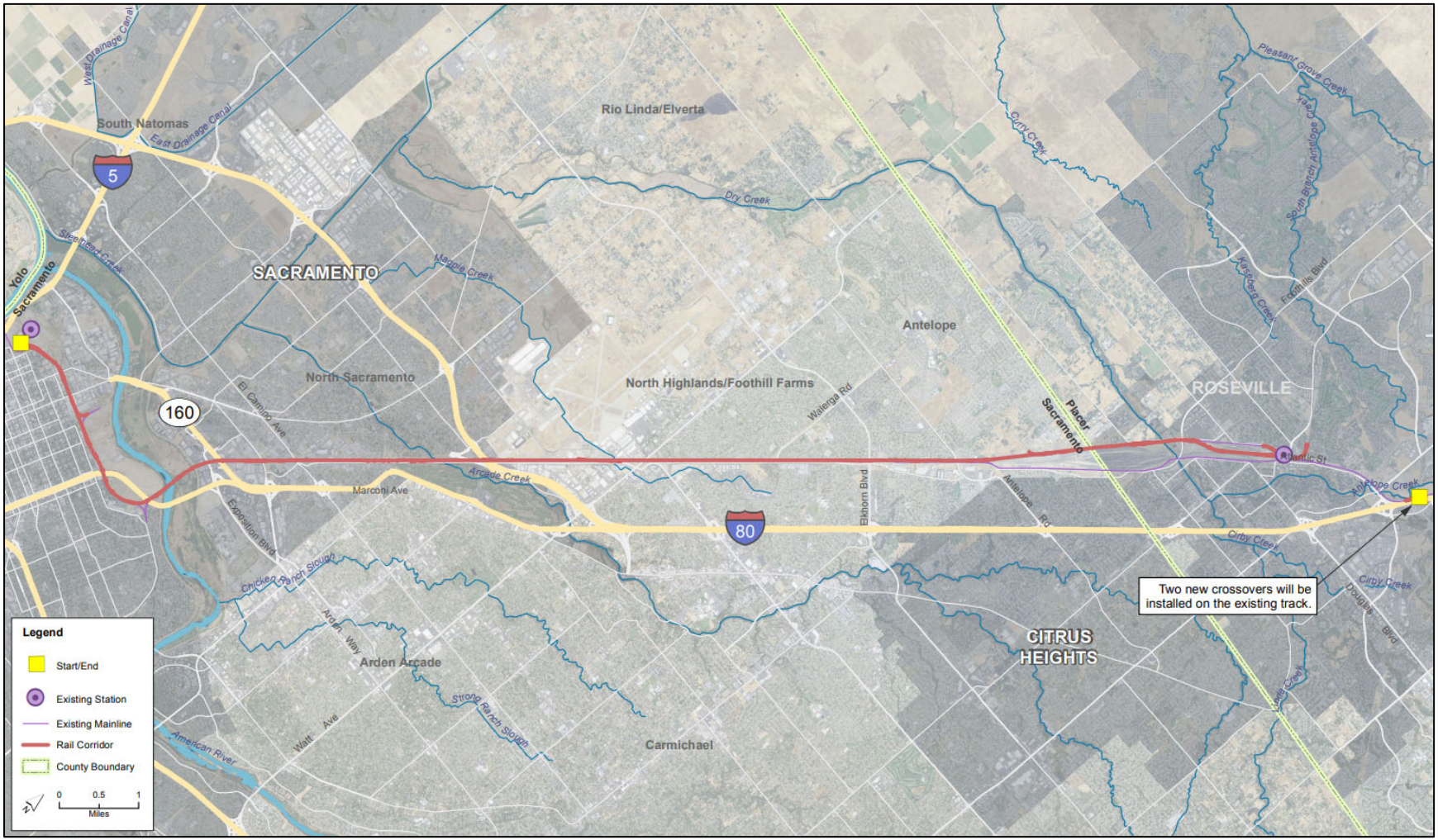
- *Passenger Train Layover Facility:* The original SR3T EIR contemplated a passenger train layover facility adjacent to Old Town Roseville, located along the west leg of the Union Pacific (UP) wye track connecting the UP Roseville Subdivision with the UP Valley Subdivision. Subsequent to certification of the Final EIR for the SR3T Project, supplemental analysis would be conducted for a revised location of the proposed passenger train layover facility (Figure 1-4).

Figure 1-1. Regional Map



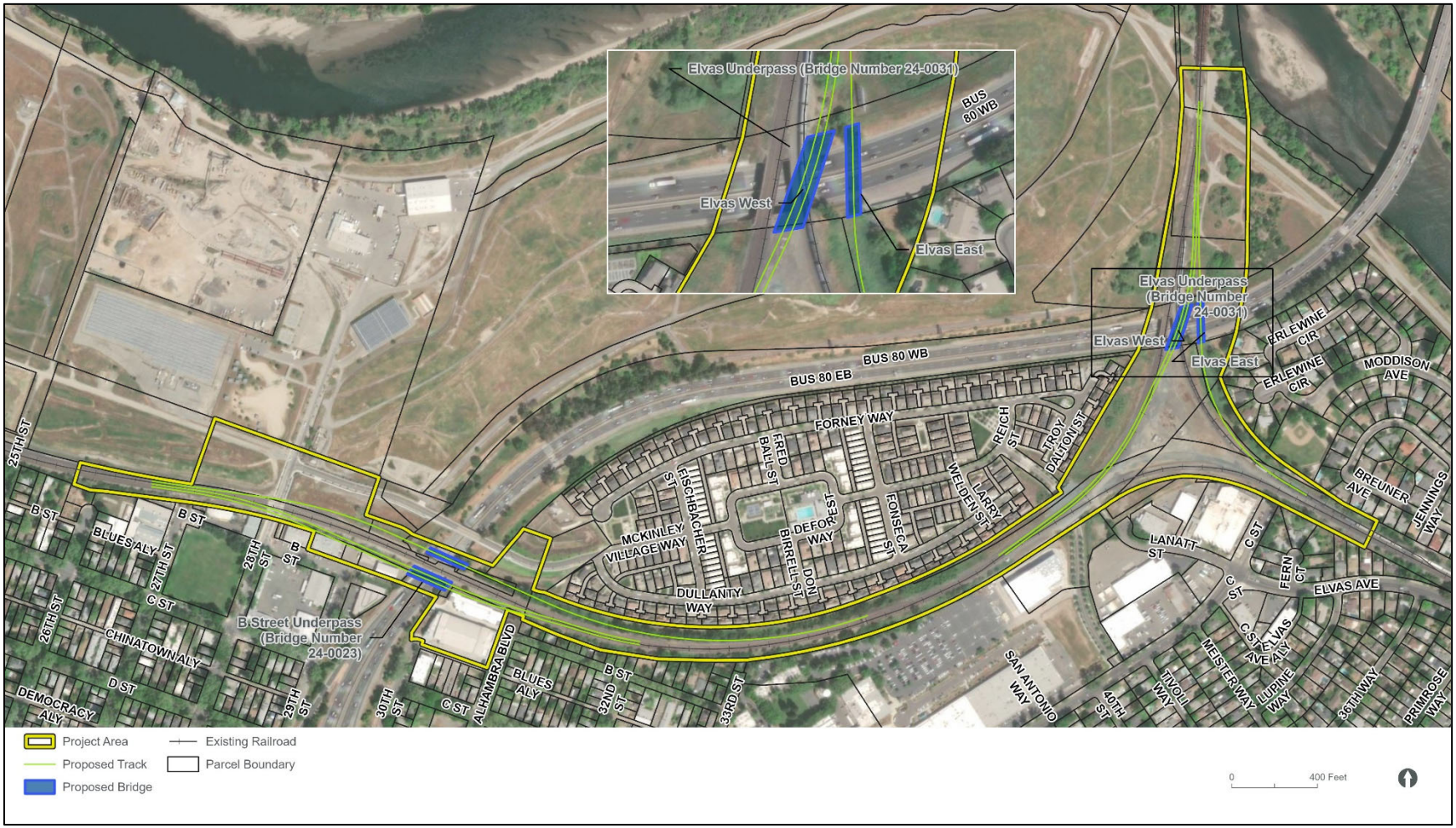
THIS PAGE IS INTENTIONALLY BLANK.

Figure 1-2. Previously Certified Project Overview Location Map



THIS PAGE IS INTENTIONALLY BLANK.

Figure 1-3. Railroad Bridge Crossings Location Map



THIS PAGE IS INTENTIONALLY BLANK.

Figure 1-4. Passenger Train Layover Facility Location Map

THIS PAGE IS INTENTIONALLY BLANK.

1.2 Terminology

To assist reviewers in understanding this Draft SEIR, the following terms are defined:

- Project means the whole of an action that has the potential for resulting in a physical change in the environment, directly or indirectly.
- Environment means the physical conditions that exist in the area and that would be affected by a proposed project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The area involved is where significant direct or indirect impacts would occur as a result of the project. The environment includes both natural and artificial conditions.
- Significant impact on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the revised Project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. An economic or social change by itself is not considered a significant impact on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.
- Mitigation consists of measures that avoid or substantially reduce the revised Project's significant environmental impacts by:
    - Avoiding the impact altogether by not taking a certain action or parts of an action;
    - Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
    - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
    - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or
    - Compensating for the impact by replacing or providing substitute resources or environment.
- Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The following statements also apply when considering cumulative impacts:
    - The individual impacts may be changes resulting from a single project or separate projects.
    - The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely

related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over time.

This Draft SEIR uses a variety of terms to describe the level of significance of adverse impacts. These terms are defined as follows:

- **No Impact.** This level of significance is used for impacts where there is clearly no impact on the environment.
- **Less than Significant.** This level of significance is used for impacts where there would be an impact, but the degree of the impact would not meet or exceed the identified thresholds. Less than significant impacts do not require mitigation.
- **Less than Significant with Mitigation Incorporated.** This level of significance is used for impacts that would meet or exceed the identified thresholds but would be reduced to a less-than-significant level through the implementation of mitigation measures.
- **Significant and unavoidable.** This level of significance describes significant impacts for which mitigation to reduce the significant impact to a less-than-significant level is not available or feasible.

1.3 Logical Termini and Independent Utility

The CEQA Guidelines define a project under CEQA as “the whole of the action” that may result directly or indirectly in physical changes to the environment. Segmenting a project into two or more pieces to then assess impacts is prohibited as evaluating projects separately may have a less than significant impact than taken as a whole. In contrast, conducting environmental review on a single component of a larger plan is appropriate when each component retains its own independent utility and provides benefit and use regardless of completion of the other components.

As part of project development, project definition involves the need to address “logical termini” and “independent utility.” “Logical termini” may be defined as rational end points for a transportation improvement, and rational end points for a review of environmental impacts. “Independent utility” means that a transportation improvement can stand alone without forcing or requiring other improvements that may have their own impacts. Defining a project with logical termini and independent utility requires that the project be well defined in terms of its project limits and purpose. The following describes how the revised Project studied in this environmental document would meet the three criteria for defining logical termini and independent utility:

- The project exhibits traits associated with logical termini and is of sufficient length to address environmental matters on a broad scope.

- The project exhibits traits associated with independent utility or independent significance (e.g., the project is usable and would be a reasonable expenditure even if no additional transportation improvements in the area are made).

- The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

As shown in Figure 1-3 and Figure 1-4, the revised Project possesses logical termini because it connects two logical endpoints for both of the revised Project components (e.g., the railroad bridge crossings and the revised passenger layover facility).

Once operational, the railroad bridge crossings and the revised passenger layover facility would function without requiring additional improvements outside the project area. In addition, a project area of sufficient length and scope was developed to ensure that implementation of the revised Project would not restrict consideration of other design features or alternatives associated with reasonably foreseeable transportation improvements in the area. Continued coordination between CCJPA, Caltrans, and UP would avoid potential conflicts with other planned transportation improvements in the area.

1.4 Public Participation in the Environmental Review

As part of the environmental process, there have been ~~will be~~ several opportunities for the public and agencies to comment on the environmental document:

1.4.1 Notice of Preparation

In accordance with §15082 of the CEQA Guidelines, CCJPA released a Notice of Preparation (NOP) for the SEIR on June 28, 2023. An NOP postcard was sent to over 4,000 agencies, residents, and businesses which provided details on the revised Project, where to obtain additional information on the revised Project, and details associated with the virtual scoping meeting. An amended NOP postcard was released to the same mailing list of contacts on July 18, 2023 which included amended information associated with the rescheduled virtual scoping meeting. The purpose of the notice was to solicit comments on the revised Project; therefore, it was circulated to interested parties as well as to the public, local, state, and federal agencies.

Comments regarding environmental impacts focused on the following areas:

Railroad Bridge Crossings component:

- American River Parkway impacts

- Recreational trail impacts during construction

- Utility relocations or removal that may be required

- Biological resource impacts

Passenger Train Layover Facility component:

- Construction impacts to Roseville Heights neighborhood
- Change in access and parking on adjacent streets in the Roseville Heights neighborhood
- Air quality impacts on residents within the Roseville Heights neighborhood
- Traffic impacts on adjacent streets in the Roseville Heights neighborhood
- Alternative locations for the proposed passenger train layover facility
- Train speed within the Roseville Heights neighborhood
- Biological resource impacts
- Noise impacts within the Roseville Heights neighborhood

The comment letters received on the scope and content of the Draft SEIR are included in Appendix A of the Draft SEIR. Four comment letters were received after the close of the NOP scoping period on June 28, 2023. Although received after the close of the NOP scoping period, these comment letters have also been included in Appendix A of the Draft SEIR.

1.4.2 Scoping Meeting

Pursuant to §15082 (c)(1) of the CEQA Guidelines, the lead agency is required to conduct at least one scoping meeting for all projects of statewide, regional, or area-wide significance. The scoping meeting is for jurisdictional agencies and interested persons or groups to provide comments regarding, but not limited to, the range of actions, alternatives, mitigation measures, and environmental effects to be analyzed. CCJPA hosted a virtual scoping meeting at 6:00 p.m. on July 24th, 2023 via Zoom.

1.4.3 Availability of the Draft SEIR

A Draft SEIR is circulated for review and comment to appropriate agencies and additional individuals and interest groups who have requested to be notified of EIR projects. Per §15105 of the State CEQA Guidelines, CCJPA conducted ~~will provide for~~ a 45-day public review period on the Draft SEIR from October 27 to December 11, 2023.

CCJPA has ~~will subsequently~~ responded to each comment on the Draft SEIR received in writing through a Response to Comments chapter in the Final SEIR. Responses have been ~~will be~~ provided to each agency or person who provided written comments on the Draft SEIR 10 days before the scheduled CCJPA Board hearing on the Final SEIR for the revised Project. Documents relating to the revised Project are available for review online at https://www.capitolcorridor.org/sac-roseville-third-track/ and http://sactoroseville3rdtrack.com/.

1.4.4 Certification of the SEIR

The Draft SEIR, together with responses to comments on the Draft SEIR and any modifications or corrections to the Draft SEIR, will constitute the Final SEIR. The CCJPA Board of Directors will review the Final SEIR, the 2015 Final EIR, and any public testimony or comments. Based on that information and all other substantial evidence, the CCJPA Board of Directors will decide whether to certify the Final SEIR and approve the proposed changes to the previously approved Project. As CEQA Guideline Section 15163(e) requires, the CCJPA Board of Directors will make a finding for each potentially significant impact identified in the 2015 Final EIR as revised, as well as the Final SEIR.

1.5 Draft SEIR Contents and Organization

The content and organization of this Draft SEIR are designed to meet the requirements of CEQA and the CEQA Guidelines, as well as to present issues, analysis, mitigation, and other information in a logical and understandable way. This Draft SEIR is organized into the following sections:

- **ES Executive Summary.** This section provides a revised Project description and a summary of environmental impacts and mitigation measures provided in the Draft SEIR.
- **1.0 Introduction.** This section describes the purpose and intended use of the SEIR, background and context of previous environmental reviews (Final EIR), content and organization of the SEIR, the changed circumstances that are the subject of the SEIR, and the environmental topic areas to be addressed in the SEIR.
- **2.0 CEQA Revised Project – Detailed Description.** This section provides a thorough description of the revised Project, environmental setting, and changed circumstances.
- **3.0 Introduction to Environmental Analysis.** This section provides an introduction to the environmental topic areas that are being analyzed. In addition, this section discusses effects found not to be significant from the changed circumstances and includes a summary of why the changed circumstances would not result in any changes to the conclusions of the 2015 Final EIR.
    - **Environmental Analysis, Impacts, and Mitigation.** This section discusses applicable updates to the environmental setting and regulatory context including any changes to the methodology used for the supplemental analysis, and the detailed analysis of potential impacts, and where necessary, a discussion of potentially feasible mitigation measures. The analysis of each environmental resource topic in Chapter 3 is organized as follows:
        - **Regulatory Framework.** This subsection identifies if the original Final EIR regulatory framework are still applicable, or if any relevant updates to the regulatory framework as well as other policies or guidelines are needed for that environmental topic area.

- **Environmental Setting.** This subsection identifies if the original Final EIR environmental setting are still applicable, or if any relevant updates to the environmental setting are part of the supplemental analysis. If updates are applicable, the discussion includes a description of the changes in physical environmental conditions in the vicinity of the revised Project.

- **Summary of Prior Analysis.** This subsection provides a summary of impacts, relevant mitigation measures and CEQA environmental determinations before and after implementation of mitigation from the original Final EIR and to provide a basis for the SEIR evaluation.

- **Thresholds of Significance.** This subsection presents the environmental checklist questions that are included in Appendix G of the 2023 CEQA Guidelines that are used in the evaluation of the revised Project. For each environmental topic area, impacts would be considered significant if the revised Project would result in new significant impacts or substantially more severe effects than previously analyzed in the original Final EIR.

- **Environmental Analysis.** This subsection describes the anticipated environmental changes to existing physical environmental conditions that may occur if the revised Project is implemented.

- **4.0 Other Statutory Considerations.** This section discusses several issues required to be include in the SEIR, significant irreversible environmental changes, the potential for the revised Project to cause or induce urban growth and development.

- **5.0 Alternatives Considered.** This section states that no additional alternatives were considered in this SEIR as the 2015 Final EIR evaluated a range of alternatives for the previously approved Project.

- **6.0 References.** This section identifies the documents (printed references) consulted in preparing this SEIR.

- **7.0 SEIR Preparers and Organizations Consulted.** This section lists the individuals involved in preparing this SEIR and any organizations consulted to prepare the CEQA documentation.

1.6 Responsible and Trustee Agencies

Projects or actions undertaken by the lead agency, in this case CCJPA, may require subsequent oversight, approvals, or permits from other public agencies in order to be implemented. Other such agencies are referred to as responsible agencies and trustee agencies. Pursuant to §15381 and §15386 of the CEQA Guidelines, as amended, responsible agencies and trustee agencies are defined as follows:

- A responsible agency is a public agency that proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term responsible agency includes all public agencies other than the lead agency that have discretionary approval power over the project (§15381).
- A trustee agency is a state agency having jurisdiction by law over natural resources affected by a project that are held in trust for the people of the State of California (§15386).

The various public agencies and jurisdictions with a particular interest in the revised Project, include but are not limited to the following:

1.6.1 State Agencies

- California Department of Fish and Wildlife
- California Department of Transportation (Caltrans)

1.6.2 Local Agencies

- Central Valley Regional Water Quality Control Board
- City of Sacramento
- City of Roseville
- County of Sacramento Department of Regional Parks
- Placer County Air Pollution Control District
- Placer County Transportation Planning Agency
- Sacramento Metropolitan Air Quality Management District
- Sacramento Municipal Utility District

THIS PAGE IS INTENTIONALLY BLANK.

2.0 Changes to the Approved Project

This section describes the approved Project that was certified in the 2015 Final EIR and discusses CCJPA's proposed changes to that Project. In addition, this section discusses changes in circumstances and introduces new information since the approval of environmental documentation prepared for the Project (e.g., the 2015 Draft and Final Environmental Impact Report.)

2.1 Approved Project

The approved Project would expand the number of daily passenger trains operating between the Sacramento Valley Station and downtown Roseville from its current single daily roundtrip (2 CCJPA trains per day) to up to 10 roundtrips per day (20 total CCJPA trains per day). The primary infrastructure improvements are the construction of approximately 17.8 miles of new main track adjacent to the existing UPRR main tracks between the Sacramento Valley Station at Milepost (MP) 89 and downtown Roseville at MP 106, construction of a new railroad bridge across the American River, construction of nine smaller bridges to accommodate the new main track, and construction of a layover facility (including tracks and an operations and maintenance building) near the Roseville Station to store passenger trains overnight. Figure 1-2 shows the general location of the approved Project described in the 2015 Draft EIR.

2.2 Changes to the Approved Project

CCJPA is proposing changes to certain components of the approved Project, which are discussed in detail in this section. The general location and overall components of the proposed changes to the approved Project are shown in Figures 1-3 and 1-4 of this SEIR and include the following.

Railroad Bridge Crossings. The revised Project includes supplemental analysis for railroad bridge crossings at two locations across Business I-80 (also known as SR-51) to accommodate changes in project design. This includes modifications (replacement and realignment) to the existing Elvas Underpass (Caltrans Bridge 24-0031) and to the existing B Street Underpass (Caltrans Bridge 24-0023). As shown in Figure 1-3, the modified Elvas Underpass would consist of the Elvas East Underpass and Elvas West Underpass, which would be separate structures, but closely spaced to one another. The Elvas East Underpass would be a new structure on the existing Union Pacific (UP) Fresno Subdivision. The Elvas West Underpass would be a new structure on the UP Martinez Subdivision. The modified B Street Underpass would, similarly, consist of two separate but also closely spaced structures on the UP Martinez Subdivision.

The replacement of the existing Elvas railroad bridge crossing would include permanently shifting the railroad tracks at the current bridges' location. Two (separate) two-span structures would be constructed, one at the location of the existing Elvas East Underpass and another to the east of the Elvas West Underpass. A new permanent rail underpass would also be constructed west of the (new) Elvas West underpass. The alignment of the railroad tracks would shift only enough to

enable the construction of the new railroad bridge structures. The Elvas East Underpass would shift 95 to 105 feet while the Elvas West Underpass would shift 28 to 42 feet to the east. In the southbound direction, the alignment of the Elvas East Underpass would shift approximately 11 degrees to the east with small ratios curves and will taper back to the existing at an approximate 7 degrees angle. The alignment of the Elvas West Underpass would shift 11 degrees to the east with a horizontal curve starting north of Business I-80, continuing southwesterly across Business I-80, and tapering back at a 7-degree angle. The construction of the Elvas East Underpass would affect approximately 2,100 feet of the railroad segment, while construction of the Elvas West Underpass would affect approximately 2,000 feet of railroad segment.

The replacement and realignment of the B Street Underpass would result in the construction of two railroad bridges. The railroad tracks would be first shifted onto temporary shoofly during construction and then permanently relocated onto the newly constructed railroad bridges. The new B Street railroad bridges would replace the current B Street railroad bridge and require a slight realignment of the existing railroad track segment. Construction of the B Street Underpass would affect approximately 2,250 to 3,600 feet of the railroad segment.

Construction would take place in stages to provide working clearance for the railroad, each stage enabling the construction of the Elvas and B Street railroad bridge structures, shifting of rail traffic, removing old underpasses, and constructing the new railroad bridge structures. The replacement and realignment of these railroad bridge crossings would require temporary rail tracks (a shoofly) to ensure continued railroad traffic/service during construction. Retaining walls in reinforced concrete, 20 to 24 feet high, and embankments with a 2:1 slope are also proposed to be constructed at either end of the new structures, extending east and west, parallel to the new track alignment. The existing railroad bridge structure are proposed to be ultimately demolished and removed. The new railroad bridges would retain the same aesthetic as the existing railroad bridges but with longer spans and deeper girders. The embankments would also retain a 2:1 slope, remaining similar to the existing embankments.

Revised Passenger Train Layover Facility. The 2015 Draft EIR contemplated a passenger train layover facility adjacent to Old Town Roseville, located along the west leg of the Union Pacific (UP) wye track connecting the UP Roseville Subdivision with the UP Valley Subdivision. Subsequent to certification of the 2015 Final EIR for the SR3T Project, a revised location of the proposed passenger train layover facility was identified along the UP right-of-way between Yosemite Street and Galleria Boulevard.

The passenger train layover facility would occupy approximately 9.5 acres and serve as an endpoint where passenger trains begin and end their runs in Roseville, California. Similar to what was identified in the 2015 Draft EIR, the passenger train layover facility would also be used for storage and light maintenance of up to four full passenger train sets at any one time. Typical activities at the passenger train layover facility would include the storage of passenger trains, cleaning the interiors of the passenger trains, emptying of sanitary retention tanks, and light maintenance. Locomotives may also receive fuel from trucks. The passenger train layover facility would also include an approximately 8,000 square foot layover yard building that would include a

break room, a training room, administrative spaces, a small storage area, rest rooms, a locker room, and up to 22 employee parking spaces for train crews to start or finish their daily shifts. The passenger train layover facility also includes the construction of an internal access road and modifications to the existing railroad tracks within the UP right-of-way.

2.3 Introduction of New Information

Regulations that have gone into effect since the 2015 Draft and Final EIR, and to which the proposed changes to the Project are subject, include Assembly Bill (AB) 52, case law regarding how existing environmental conditions will impact a project's future users or residents, various air quality regulations, and Senate Bill (SB) 215.

Assembly Bill 52. Effective July 1, 2015, AB 52 formally established new requirements under CEQA to protect tribal cultural resources. Specifically, the bill requires a lead agency to begin consultation with a California Native American tribe, if requested, and be informed of projects in the geographic area prior to determining if environmental documentation is required. Compliance with AB 52 is discussed in Section 3.4, Cultural Resources, of this SEIR.

California Building Industry Assoc. v. Bay Area Air Quality Management District Case Law. In December 2015, the California Supreme Court found that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents" unless the project "could exacerbate hazards that are already present." The Supreme Court identified several exceptions to this general rule in which CEQA could apply to impacts of the environment on the project, all of which are statutory provisions in CEQA that specifically require consideration of impacts of the environment, such as consideration of projects near airports, school construction projects, and statutory exemptions for housing and transit priority projects. None of these exceptions apply to the proposed changes to the approved Project. (California Building Industry Assoc. v. Bay Area Air Quality Management District (2015) 62 Cal. 4th 369).

Air Quality Regulations. SB 350 (Clean Energy and Pollution Reduction Act of 2015) was approved by the California legislature in September 2015 and signed by Governor Brown in October 2015. Its key provisions are to require the following by 2030: (1) a renewables portfolio standard of 50 percent and (2) a doubling of energy efficiency (electrical and natural gas) by 2030, including improvements to the efficiency of existing buildings. These mandates will be implemented by future actions of the California Public Utilities Commission and California Energy Commission.

SB 32 requires the California Air Resources Board (ARB) to ensure that statewide greenhouse gas (GHG) emissions are reduced to at least 40 percent below 1990 levels by 2030. The companion bill, AB 197, creates requirements to form a Joint Legislative Committee on Climate Change Policies, requires the ARB to prioritize direct emission reductions and consider social costs when adopting regulations to reduce GHG emissions beyond the 2020 statewide limit, requires ARB to prepare reports on sources of GHGs and other pollutants, establishes 6-year terms for voting members of ARB, and adds two legislators as non-voting members of ARB.

Pursuant to SB 32, ARB updated the prior AB 32 Scoping Plan to address implementation of GHG reduction strategies to meet the 2030 reduction target. The Final Plan was approved in December 2017. The 2017 plan continues the discussion from the original scoping plan and 2014 update of identifying scientifically backed policies to reduce GHGs within six of the state's economic sectors. The updated Scoping Plan includes various elements, including doubling energy efficiency savings, increasing the low carbon fuel standard from 10 to 18 percent, adding 4.2 million zero-emission vehicles on the road, implementing the Sustainable Freight Strategy, implementing a post-2020 Cap-and-Trade Program, creating walkable communities with expanded mass transit and other alternatives to traveling by car, and developing an Integrated Natural and Working Lands Action Plan to protect land-based carbon sinks. Compliance with the air quality regulations summarized above is discussed in Section 3.2, Air Quality/Climate Change/GHG, of this SEIR.

Traffic Regulations. State CEQA Guidelines Section 15064.3 was added on December 28, 2018, to address the determination of significance for transportation impacts, which requires vehicle miles traveled as the basis of transportation analysis instead of congestion (such as level of service). The change in the focus of transportation analysis is intended to shift the focus from congestion to, among other things, reduction in GHG emissions, the development of multimodal transportation networks, and encouraging a diversity of land uses. Under CEQA Guidelines Section 15064.3(b), the Project's impact on a roadway network would be significant if the Project would result in a net increase in vehicle miles traveled over baseline conditions, or otherwise conflict with CEQA Guidelines Section 15064.3(b). Compliance with the traffic regulations summarized above is discussed in Section 3.11, Transportation, of this SEIR.

3.0 Environmental Analysis

Twelve environmental topic areas require additional analysis due to the nature of the revised Project. The environmental topic areas addressed in this SEIR are as follows:

- Aesthetics and Visual Resources
- Air Quality/Climate Change/Greenhouse Gases
- Biological Resources
- Cultural Resources
- Geology, Soils, Seismicity, Minerals, and Paleontological Resources
- Hydrology and Water Resources
- Hazards and Hazardous Materials
- Hydrology and Water Resources
- Land Use
- Noise and Vibration
- Population and Housing
- Traffic and Transportation

This Draft SEIR describe substantial changes in the environmental setting, impacts, and mitigation measures for each of the environmental resource areas that were evaluated in the 2015 Draft EIR. Within each environmental resource area, only the proposed changes to the approved Project that have the potential to result in an environmental effect or a change in adopted mitigation measures are discussed. For a detailed discussion of the existing setting at the time each prior environmental document was prepared, impacts (including the thresholds of significance), and mitigation measures, refer to Chapter 3 of the 2015 Draft EIR.

Environmental Topic Areas Adequately Addressed in the 2015 Draft EIR: All of the potential impacts within the following environmental topic areas listed in Appendix G of the CEQA Guidelines have been identified as not being significantly affected by the identified changed circumstances as compared to the 2015 Draft EIR and therefore are not discussed in detail in this Draft SEIR. Those environmental topic areas include:

- Agriculture and Forestry Resources
- Energy
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

Supplemental EIR Environmental Evaluation: The environmental thresholds outlined in Appendix G of the State CEQA Guidelines (CCR Title 14, Chapter 3, Sections 15000-15397) are used to determine if the identified changed circumstances would result in a substantial change in impacts over those impacts identified in the 2015 Draft EIR. Consistent with the 2015 Draft EIR, the SEIR environmental evaluation uses the following terminology to denote the significance of environmental impacts of the changed circumstances:

- No Impact
- Less than Significant Impact
- Significant Impact
- Unavoidable Significant Impact

THIS PAGE IS INTENTIONALLY BLANK.

3.1 Aesthetics and Visual Resources

3.1.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to aesthetics and visual resources, are identified in the 2015 Draft EIR (Chapter 3.12, Aesthetics and Visual Resources). The regulatory framework for aesthetics and visual resources for this SEIR is the same as presented in 2015 Draft EIR.

3.1.2 Environmental Setting

The 2015 Draft EIR addressed visual impacts associated with the introduction of new linear infrastructure elements to the visual landscape within the Project study area. Simulation vantage points were selected to provide representative public views from which proposed Project components would be most visible to the various viewer groups that are representative of the visual assessment units. The analysis included specific viewer groups that could be exposed to the potential changes in the Project corridor including rail users, motorists, residents, workers, and recreational users.

As part of the 2015 Draft EIR analysis, computer-generated photo simulations were prepared using digital photographs and computer modeling techniques to document the visual changes that would result from implementation of the proposed Project. Determination of aesthetic impacts resulting from implementation of the proposed Project were based on direct field observation from multiple vantage points, including neighboring properties and roadways; photographic documentation of key views of the Project corridor; evaluation of existing visual character; review of Project plans and features, including construction and staging areas; and evaluation of photo simulations depicting the proposed Project components from nine key viewpoints (KVPs).

Figure 3.1-1 and Figure 3.1-2 shows the location of applicable key views associated with the 2015 Draft EIR as well as the key viewpoints associated with the revised Project. Figure 3.1-3 shows the changes at the Elvas Railroad Bridge near the UPRR Wye as envisioned in the 2015 Draft EIR. Figures 3.1-4 and 3.1-5 provide additional viewpoints of the modifications to both the Elvas Railroad Bridge and B Street Railroad Bridge crossings as proposed in this SEIR.

Figure 3.1-6 shows the changes at the passenger train layover facility site as identified in the 2015 Draft EIR. As shown in Figures 3.1-6 through 3.1-10, the revised passenger train layover facility site is adjacent to a mixture of vacant land, commercial land uses, and residences along Roseville Street, Atlantic Street, and Tiger Way.

THIS PAGE IS INTENTIONALLY BLANK.

Figure 3.1-1. Railroad Bridge Crossings Locations of Key Views Considered

Figure 3.1-2. Passenger Train Layover Facility Locations of Key Views Considered

Figure 3.1-3. Key Viewpoint #2 - Existing and Simulated Views of Elvas Railroad Bridge Crossing near UPRR Wye
(view looking southeast from westbound shoulder of Capital City Freeway)

SOURCE: SACRAMENTO TO ROSEVILLE THIRD MAIN TRACK 2015 DRAFT EIR

THIS PAGE IS INTENTIONALLY BLANK.

Figure 3.1-4. Key Viewpoint #2a – Existing and Simulated View of B Street Railroad Bridge Crossing (view looking north from eastbound shoulder of Capital City Freeway)

Source: Caltrans 2020

THIS PAGE IS INTENTIONALLY BLANK.

Figure 3.1-5. Key Viewpoint #2b – Existing and Simulated Views of Elvas Railroad Bridge Crossing near UPRR Wye
(view looking southwest from unmanned aerial vehicle above Capital City Freeway)

Source: Caltrans 2020

Figure 3.1-6. Key Viewpoint #9 - Existing and Simulated Views of 2015 EIR Passenger Train Layover Facility Site
(view looking southeast from Sierra Boulevard overpass)

Source: Sacramento to Roseville Third Main Track 2015 Draft EIR

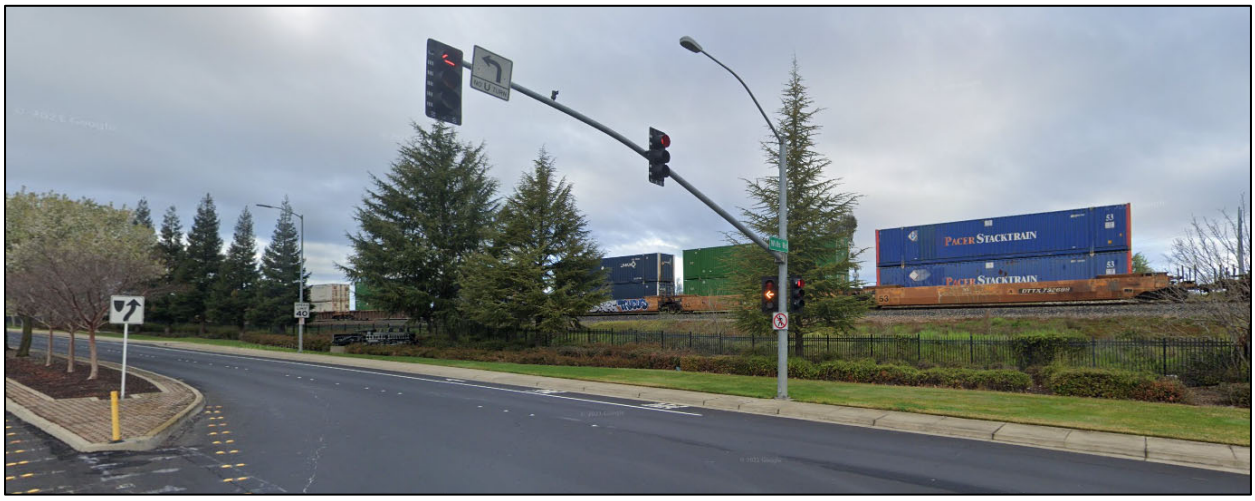
Figure 3.1-7. Key Viewpoint #9a – Existing View of Revised Passenger Train Layover Facility Site
(view looking southeast from intersection of Berry Street and Tiger Way)

Source: Google Earth Street View

Figure 3.1-8. Key Viewpoint #9b – Existing View of Revised Passenger Train Layover Facility Site
(view looking northwest from Atlantic Street)

Source: Google Earth Street View

Figure 3.1-9. Key Viewpoint #9c – Existing View of Revised Passenger Train Layover Facility Site
(view looking northwest from intersection of Willis Road and Atlantic Street)



Source: Google Earth Street View

3.1.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, **Error! Reference source not found.** summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

Table 3.1-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Aesthetics and Visual Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold AES-1: Potential to have a substantial adverse effect on a scenic highway *Construction and Operation* No designated or eligible state scenic highways are located in the Project vicinity.	*Construction* No Impact *Operation* No Impact	Not Applicable	Not Applicable
Threshold AES-2: Substantially degrade the existing visual character or quality of the site or its surroundings, including scenic vistas *Construction* During construction, viewers in the open space/recreation and residential visual assessment units would see construction activities for limited periods. *Operation* Some nearby viewers could perceive the introduction of	*Construction* Potentially Significant *Operation* Potentially Significant	*Construction* **AES-2a: Minimize visual disruption through vegetation retention and placement of staging areas**. To minimize visual disruption, construction activities would implement the following measures. • Limit preconstruction vegetation removal to that necessary for construction. • Where possible, preserve existing vegetation, particularly along the edge of construction areas, to help screen views. • After construction, regrade and revegetate areas disturbed by construction and staging to pre-project conditions. • To the extent feasible, do not site construction staging areas immediately adjacent to existing residential, recreational, or other sensitive visual receptors. **AES-2b: Minimize fugitive light from portable sources used for construction**. The construction contractor shall minimize fugitive light from portable lighting sources used during construction by adhering to the following practices.	*Construction* Less than Significant *Operation* Less than Significant

Table 3.1-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Aesthetics and Visual Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
new structures as a significant visual impact.		• Project-related light and glare shall be minimized to the maximum extent feasible within the constraints of safety considerations. • Color-corrected halide lights shall be used. • Portable lights shall be operated at the lowest allowable wattage and height and shall be raised to no more than 20 feet above ground level. • All lights shall be screened and directed down toward work activities and away from the night sky and nearby residents to the maximum extent within the constraints of safety considerations. • The number of nighttime lights used shall be minimized to the greatest extent possible. Implementation of this measure will reduce—to the extent feasible as governed by site-specific safety requirements—the overall amount of nighttime light and glare introduced to the Project vicinity during construction. *Operation* **AES-2c: Screen Ancillary Project Facilities**. Ancillary Project facilities shall not be sited near residences, parks, or other sensitive visual receptors. Where avoidance is not feasible, facilities shall be screened with perimeter landscape screening.	
Threshold AES-3: Create a new source of light or glare that would adversely affect day or nighttime views in the area *Construction*	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **AES-2b: Minimize fugitive light from portable sources used for construction**. The construction contractor shall minimize fugitive light from portable lighting sources used during construction by adhering to the following practices. • Project-related light and glare shall be minimized to the maximum extent feasible within the constraints of safety considerations.	*Construction* Less than Significant *Operation* Not Applicable

Table 3.1-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Aesthetics and Visual Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
The Residential Visual Assessment Unit would be exposed to higher levels of lighting during the nighttime hours for a temporary duration throughout project construction. *Operation* The Project corridor already contains existing lighting from urban development and transportation infrastructure. Operation of the proposed Project would not result in a new source of lighting or glare.		• Color-corrected halide lights shall be used. • Portable lights shall be operated at the lowest allowable wattage and height and shall be raised to no more than 20 feet above ground level. • All lights shall be screened and directed down toward work activities and away from the night sky and nearby residents to the maximum extent within the constraints of safety considerations. • The number of nighttime lights used shall be minimized to the greatest extent possible. • Implementation of this measure will reduce—to the extent feasible as governed by site-specific safety requirements—the overall amount of nighttime light and glare introduced to the Project vicinity during construction. *Operation* Not Applicable	

THIS PAGE IS INTENTIONALLY BLANK.

3.1.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to aesthetics and visual resources if it were to:

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 resources within a state scenic highway.

c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage points). If in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.

d) Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

3.1.5 Environmental Analysis

THRESHOLD 3.1-A	Have a substantial adverse effect on a scenic vista
THRESHOLD 3.1-B	Substantially damage scenic resources, including, not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway

The 2015 Draft EIR identified that the Project study area was not located within any scenic vistas or state designated scenic highways. Therefore, the 2015 Draft EIR concluded that no impacts associated with this topic would occur.

Railroad Bridge Crossings

The segment of Business I-80 that the railroad bridge crossings are located on is not designated as a state scenic highway. Therefore, the replacement or realignment of the railroad bridge crossings would not be located within a scenic vista or state designated scenic highway. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Adjacent roadways to the revised passenger train layover facility include Roseville Street, Atlantic Street, and Tiger Way, none of which are considered a state designated scenic highway. Therefore, construction and operation of the revised passenger train layover facility would not be located within a scenic vista or state designated scenic highway. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.1-C	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those that are experienced from publicly accessible vantage points). If in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality

The 2015 Draft EIR addressed visual impacts associated with temporary construction activities which were anticipated to entail partial or complete road and lane closures at bridges and at-grade crossings, vehicle and pedestrian detours, construction material deliveries, and transport of construction equipment. However, the 2015 Draft EIR also identified that such conditions are common due to construction and maintenance activities that normally occur in the Project vicinity, specifically in the rail corridor and industrial/commercial visual assessment units.

Railroad Bridge Crossings

During construction, viewers in the open space/recreation visual assessment units (which include Sutter's Landing Regional Park and the American River Parkway) would see construction activities for limited periods as the replacement and realignment of the railroad bridges are constructed and construction activities progress along the alignment. Vegetation removal is likely to be necessary to accommodate railroad bridge crossings; however, such removal would be limited to a short distance on either side of the alignment, and is consequently not anticipated to substantially alter the visual quality or character of those areas. In addition, construction staging areas would be restored to pre-project conditions after construction is completed. The 2015 Draft EIR concluded that although visual impacts associated with construction would be temporary, visual impacts could be potentially significant as recreationists are considered a sensitive viewer group. The inclusion of Mitigation Measure AES-2a, which requires minimization of visual disruption through vegetation retention and placement of staging areas, resulted in impacts being reduced to a less than significant level for existing viewers in the open space/recreation visual assessment units.

The 2015 Draft EIR also identified that Project-related construction activities could be more noticeable in areas adjacent to residences, especially if nighttime construction and associated lighting is undertaken near residences. Although visual impacts associated with construction would be temporary, because residents are considered a sensitive viewer group, these impacts could be potentially significant. The inclusion of Mitigation Measures AES-2a (which requires minimization of visual disruption through vegetation retention and placement of staging areas) and AES-2b (which requires the minimization of fugitive light from portable sources used for construction) resulted in impacts being reduced to a less than significant level for existing residential receptors within the Project Study Area.

The railroad bridge crossings are adjacent to industrial, commercial, and residential uses as well as vacant land. It is anticipated that the railroad bridge crossings would have similar construction activities that could temporarily impact adjacent visual sensitive receptors. Mitigation Measures AES-2a and AES-2b, which was previously identified in the 2015 Draft EIR for the overall Project

and incorporated as part of the 2015 Final EIR Mitigation Monitoring and Reporting Plan (MMRP), would also be implemented for the railroad bridge crossings component. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures AES-2a and AES-2b would minimize potential construction impacts to sensitive receptors to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Construction impacts would remain less than significant with mitigation incorporated.

For operational impacts, the 2015 Draft EIR analyzed representative changes associated with potential changes at the existing Elvas railroad bridge crossing through KVP 2. The primary viewer group at this location would be motorists on the highway. There would be a relatively large number of viewers, but views would be from vehicles traveling at highway speeds. As shown in Figure 3.1-3, the structural aspects of the proposed bridge crossing would be visually consistent with the existing features. The 2015 Draft EIR concluded that the modifications associated with the existing Elvas railroad bridge crossing at Business I-80 would not substantially obstruct long distance views or substantially alter the existing visual character or quality resulting in a less than significant impact.

The railroad bridge crossings are located in the same Visual Assessment Unit as the original railroad bridge crossing of Business I-80 identified in the 2015 Draft EIR. The identified modifications associated with the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant.

Passenger Train Layover Facility

Temporary changes to the visual landscape would occur during construction of the passenger train layover facility regardless of where the facility would be constructed. These temporary changes would include views of construction equipment, dust, material stockpiling, nighttime construction lighting, and construction and detour signage.

Mitigation Measures AES-2a and AES-2b, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the visual quality and aesthetic impacts associated with the revised passenger train layover facility. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures AES-2a and AES-2b would minimize potential construction impacts to sensitive receptors to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

The 2015 Draft EIR identified that the passenger train layover facility would consist of trailers that would not exceed heights of 10 to 12 feet. While some residences would not be able to see the trailers at the passenger train layover facility because of mature landscaping, other residences along Roseville Road and Lincoln Street would have unobstructed views of the trailers from side yards or sidewalks. However, the 2015 Draft EIR identified that rail cars are often stored in this

area, and the trailers would be near existing development and consistent with the existing industrial visual character. New tracks associated with the passenger train layover facility would be visible, especially from the Sierra Boulevard overpass, but would be visually consistent with existing UPRR tracks. The 2015 Draft EIR concluded that although the passenger train layover facility would not substantially alter the visual character or quality in this area, some nearby viewers could perceive the introduction of new structures as a potentially significant visual impact. The 2015 Draft EIR concluded that with implementation of Mitigation Measure AES-2c, impacts would be reduced to a less than significant level.

The revised passenger train layover facility site contains similar adjacent land uses (e.g., a mix of residential, commercial, and industrial uses adjacent to the UPRR right of way) as those identified in the 2015 Draft EIR for the original passenger train layover facility site. Although the revised Project component would result in the construction of a new layover yard building, the building would be similar in height to existing one-story commercial and industrial buildings in the Project area. The revised location of the proposed tracks and access road would be visible, especially from the Galleria Boulevard overpass, but would be visually consistent with existing UPRR tracks. In addition, the majority of the proposed layover tracks and access road would not be visible to nearby residences due to existing landscaping, fencing, and intervening businesses. Passenger railcars and locomotives would be stored at the revised layover site; this rail equipment would be approximately 16 feet tall.

Mitigation Measure AES-2c, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the visual impacts associated with the revised passenger train layover facility. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure AES-2c would minimize potential visual operational impacts to sensitive receptors to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant with mitigation incorporated.

THRESHOLD 3.1-D	Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area

The 2015 Draft EIR addressed temporary lighting impacts associated with nighttime construction activities at existing residential receptors throughout the Project study area. The 2015 Draft EIR identified that nearby residences in proximity to the construction work zone would be exposed to higher levels of lighting for a temporary duration throughout Project construction, resulting in a potentially significant impact. To address potentially significant impacts, the 2015 Draft EIR identified Mitigation Measure AES-2b, which requires the minimization of nighttime construction activities near residential areas and the screening of construction lighting away from residential areas. The 2015 Draft EIR concluded that with implementation of Mitigation Measure AES-2b, impacts on existing residential receptors would be reduced to a less than significant level.

The 2015 Draft EIR identified that implementation of the proposed Project would result in a slight increase in the amount of light within the Project study area due to an increased number of trains traveling through the Project corridor. However, the additional lighting would be within an existing railroad ROW not anticipated to significantly impact residents in the area. The 2015 Draft EIR concluded that a less than significant impact associated with operational lighting impacts on residential receptors would occur within the Project study area.

Railroad Bridge Crossings

The railroad bridge crossings are located in the same Visual Assessment Unit as the original railroad bridge crossing of Business I-80 identified in the 2015 Final EIR. Mitigation Measure AES-2b, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would also be implemented to address the nighttime construction lighting impacts identified for the railroad bridge crossing component. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure AES-2b would minimize nighttime construction lighting impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant with mitigation incorporated.

It is anticipated that the additional lighting associated with the railroad bridge crossings would be similar to existing conditions (e.g., bridge crossing is within an existing transportation corridor). The inclusion of lighting for the bridge crossings would be within an existing railroad ROW and is not anticipated to significantly impact residents in the area. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant.

Passenger Train Layover Facility

Mitigation Measure AES-2b, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would also be implemented to address the nighttime construction lighting impacts identified for the revised passenger train layover facility. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure AES2b would minimize nighttime construction lighting impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

As previously mentioned, the 2015 Draft EIR identified that the Project corridor already contains existing lighting from urban development and transportation infrastructure. Given the types of uses in the vicinity of the passenger train layover facility, nighttime lighting consists of surrounding residential, commercial, and industrial uses- which utilize exterior lighting for security, signage, parking, architectural building lighting, and landscaping. Other exterior lighting sources include pole-mounted streetlights as well as vehicle headlights along adjacent streets (e.g., Atlantic Street, Tahoe Avenue, and Tiger Way). Similar to other uses in the immediate project vicinity, the passenger train layover facility would utilize exterior lighting for security, parking, and building

uses. It is anticipated that lighting provided within the passenger train layover facility would follow the 2023 City of Roseville Design and Construction Standards which require all lighting to be designed with appropriate shielding to prevent unnecessary glare. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

3.2 Air Quality/Climate Change/Greenhouse Gases

3.2.1 Regulatory Framework

The 2015 Draft EIR addressed the regulatory setting for the analysis of potential impacts related to air quality, GHGs, and climate change within Chapter 3.2, *Air Quality/Climate Change/Greenhouse Gases* of the 2015 Draft EIR. The regulatory framework for air quality, GHG, and climate change for this SEIR is generally the same as presented in the 2015 Draft EIR.

3.2.2 Environmental Setting

The Project study area for the 2015 Draft EIR included the 17.8-mile-long Project corridor, as well as the greater Sacramento Valley Air Basin (SVAB), which encompasses Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo and Yuba counties. Additionally, the valley portion of Placer County to and including Auburn, as well as the northern and eastern portions of Solano County were included within the boundaries of the SVAB.

The Project is located within Sacramento Metropolitan Air Quality Management District (SMAQMD) and Placer County Air Pollution Control District (PCAPCD). Criteria air pollutants are regulated through both national and state ambient air quality standards and emissions limits for individual sources. Regulations implementing the federal Clean Air Act and its subsequent amendments established national ambient air quality standards (national standards) for six criteria pollutants: ozone, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM, including PM_{10}, $PM_{2.5}$), carbon monoxide (CO), and lead. California has adopted more stringent state standards for most of the criteria air pollutants. In addition, California has established state ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Because of the meteorological conditions in the state, there is considerable difference between some of the state and federal standards in California. For example, the federal primary standard for 8-hour ozone is now 0.070 parts per million (ppm), which is a reduction from the 0.075 ppm standard that was in place at the time of the 2015 Final EIR. All other ambient air quality standards are essentially the same as they were at the time of the 2015 Final EIR.

Under amendments to the Federal Clean Air Act, United States Environmental Protection Agency (U.S. EPA) has classified air basins or portions thereof as either “attainment” or “non-attainment” for each criteria air pollutant, based on whether the national standards have been achieved, referred to as National Ambient Air Quality Standards (NAAQS). The California Clean Air Act, which is patterned after the Federal Clean Air Act, also requires areas to be designated as “attainment” or “non-attainment” for the state standards (referred to as California Ambient Air Quality Standards [CAAQS]). Thus, areas in California have two sets of attainment/non-attainment designations: NAAQS and CAAQS. Under current conditions the area is CAAQS nonattainment for ozone and PM less than or equal to 10 microns in diameter (PM_{10}) and NAAQS nonattainment for ozone and PM less than or equal to 2.5 microns in diameter ($PM_{2.5}$). For all other pollutants, the area is designated as Unclassifiable/Attainment.

As discussed above, federal and state agencies have established NAAQS and CAAQS for six criteria pollutants: ozone, lead, CO, NO_2, SO_2, and PM_{10} and $PM_{2.5}$. Ozone and NO_2 are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO_2, and lead are considered local pollutants that tend to accumulate in the air locally. The primary criteria pollutants of concern in the Project vicinity were ozone (including nitrogen oxide [NO_X] and reactive organic gases [ROG]), CO, and PM. The Project is located near sources that emit priority Mobile Source Air Toxics, including non-mobile sources. The primary sources are traffic and stationary sources.

3.2.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.2-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR**.**

Table 3.2-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Air Quality, Climate Change and GHG

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan. *Construction and Operation* The proposed Project would not conflict with or obstruct implementation of appliable air quality plans.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold AQ-2: Violation of any California or regional air quality standard or substantial contribution to an existing or projected air quality violation. *Construction* Construction emissions associated with the proposed Project would exceed the SMAQMD's and PCAPCD's daily NOx threshold. *Operation* Operational emissions associated with the proposed Project would not exceed the SMAQMD's and PCAPCD's daily criteria pollutant thresholds.	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure AQ-2a: Implement air district–recommended basic and enhanced best management practices to reduce construction-related NOX emissions (SMAQMD and PCAPCD).** CCJPA shall require construction contractors to implement basic and enhanced NOX construction mitigation measures recommended by SMAQMD and PCAPCD. Emission reduction measures shall include, at a minimum, the following applicable measures (additional measures may be identified by SMAQMD, PCAPCD, or the contractor, as appropriate). All measures shall be included in the final design and contractor specifications for the Project. • Minimize idling time either by shutting equipment off when not in use or by reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site. Many construction companies comply with the idling restriction through equipment inspection and maintenance programs.	*Construction* Less than Significant *Operation* Not Applicable

Table 3.2-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Air Quality, Climate Change and GHG

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Maintain all construction equipment in proper working condition in accordance with manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated. • Submit to SMAQMD and PCAPCD a comprehensive inventory of all offroad construction equipment of 50 or more horsepower that shall be used an aggregate of 40 or more hours during any portion of construction. o The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. o The Project representative shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and onsite foreman. o This information shall be submitted at least 4 business days prior to the use of subject heavy-duty offroad equipment. o The inventory shall be updated and submitted monthly throughout the duration of the Project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. • Provide a plan for approval by SMAQMD and PCAPCD demonstrating that the heavy-duty offroad vehicles (50 horsepower or more) to be used in Project construction, including owned, leased, and subcontractor vehicles, shall achieve a Project-wide fleet-average 20 percent NOX	

Table 3.2-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Air Quality, Climate Change and GHG

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		reduction and 45 percent particulate reduction compared to the most recent ARB fleet average. ○ This plan shall be submitted in conjunction with the equipment inventory. ○ Acceptable options for reducing emissions may include use of late model engines, low emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. • Ensure that emissions from all offroad diesel powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. ○ Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. ○ Noncompliant equipment shall be documented and a summary provided to SMAQMD and PCAPCD monthly. ○ A visual survey of all in-operation equipment shall be made at least weekly. ○ A monthly summary of the visual survey results shall be submitted throughout the duration of the Project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.	

Table 3.2-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Air Quality, Climate Change and GHG

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)

		• SMAQMD, PCAPCD, and/or other officials may conduct periodic site inspections to determine compliance.
		
		Mitigation Measure AQ-2b: Use modern fleet for on-road material delivery and haul trucks during construction to reduce NOX emissions (SMAQMD and PCAPCD). CCJPA shall ensure that construction contracts stipulate that all on road heavy-duty diesel trucks with a gross vehicle weight rating of 19,500 pounds or greater used at the project site shall comply with EPA 2007 on road emission standards for PM10 and NOX (0.01 and 0.20 grams per break horsepower-hour, respectively). These PM10 and NOX standards were phased in through the 2007 and 2010 model years on a percent of sales basis (50 percent of sales in 2007–2009 and 100 percent of sales in 2010). This mitigation measure assumes that all on road heavy-duty diesel trucks are compliant with EPA 2007 on road emission standards.
		
		Mitigation Measure AQ-2c: Reduce construction emissions to below SMAQMD NOX thresholds (SMAQMD). CCJPA shall ensure that construction-related emissions do not exceed SMAQMD's construction NOX threshold of 85 pounds per day. Potential measures in addition to those listed in Mitigation Measures AQ-2a and AQ-2b include but are not limited to those listed below.
		
		• Require the usage of EPA-rated Tier 3 or higher rated construction equipment. In general, the following NOX reductions can be achieved when replacing Tier 2 equipment (fleet average) with higher rated engine tiers.
		  ○ Tier 3—38 percent NOX reduction.
		  ○ Tier 4 interim—68 percent NOX reduction.	

Table 3.2-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Air Quality, Climate Change and GHG

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		○ Tier 4 final—94 percent NOX reduction. • Work with SMAQMD to purchase NOX credits to offset remaining NOX construction emissions exceeding SMAQMD thresholds. *Operation* Not Applicable	
Threshold AQ-3: Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is a nonattainment area for a applicable federal or state ambient air quality standard. *Construction and Operation* Project emissions would exceed SMAQMD's and PCAPCD's daily threshold for NO_x.	*Construction* Potentially Significant *Operation* Potentially Significant	*Construction and Operations* **Mitigation Measure AQ-2a: Implement air district–recommended basic and enhanced best management practices to reduce construction-related NOX emissions (SMAQMD and PCAPCD)** **Mitigation Measure AQ-2b: Use modern fleet for on-road material delivery and haul trucks during construction to reduce NOX emissions (SMAQMD and PCAPCD)** **Mitigation Measure AQ-2c: Reduce construction emissions to below SMAQMD NOX thresholds (SMAQMD)**	*Construction* Less than Significant *Operation* Significant and Unavoidable (Placer County Only)
Threshold AQ-4: Expose Sensitive Receptors to Substantial Pollutant Concentrations *Construction* Earthmoving activities during construction would expose nearby sensitive receptors to increased health risk associated with localized fugitive PM emissions. CO hot spots are not anticipated to occur. Construction activities	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure AQ-4: Implement air district–recommended basic best management practices to reduce construction-related fugitive dust emissions (SMAQMD and PCAPCD).** CCJPA shall require construction contractors to implement basic fugitive dust construction mitigation measures recommended by SMAQMD and PCAPCD. Emission reduction measures shall include, at a minimum, the following applicable measures (additional	*Construction* Less than Significant *Operation* Not Applicable

Table 3.2-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Air Quality, Climate Change and GHG

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
would not result in exceedance of SMAQMD or PCAPCD health risk thresholds. *Operations* Operational activities are not anticipated to expose sensitive receptors to substantial pollutant concentrations.		measures may be identified by SMAQMD, PCAPCD, or the contractor, as appropriate). • Water all exposed surfaces two times daily. Exposed surfaces include but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads. • Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that travel along freeways or major roadways shall be covered. • Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited. • Limit vehicle speeds on unpaved roads to 15 miles per hour (mph). All roadways, driveways, sidewalks, and parking lots to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. *Operation* Not Applicable	

Table 3.2-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Air Quality, Climate Change and GHG

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold AQ-5: Create objectionable odors affecting a substantial number of people *Construction and Operation* The proposed Project would not create objectionable odors affecting a substantial number of people.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold AQ-6: Generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment *Construction and Operation* Although the proposed Project would generate GHG emissions, those emissions would not have a significant impact on the environment.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold AQ-7: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases *Construction and Operation* The proposed Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable

THIS PAGE IS INTENTIONALLY BLANK.

3.2.4 Thresholds of Significance

The Project as analyzed in the 2015 Draft EIR would have a significant impact related to air quality and GHGs if it would:

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 pollutant for which the Project region is a nonattainment area for 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.

Updates to Appendix G of the CEQA Guidelines that were finalized in December 2018 made non-substantive revisions to these significance criteria. Specifically, the content of criteria b) and c) have been combined and are now reflected as criterion b), and the odors criterion has been refined to include reference to “other emissions.”

The 2018 revised criteria address the same types of impacts that are addressed in the 2015 Draft EIR and are included in Appendix G of the 2023 CEQA Guidelines. Accordingly, the 2023 CEQA Guidelines are relevant to this Draft SEIR’s consideration of whether the revised Project components would cause any new significant impacts or a substantial increase in the severity of previously identified significant impacts than were disclosed in the 2015 Draft EIR. The revised Project would have a significant impact related to air quality and GHG if it were to:

a) Conflict with or obstruct implementation of the applicable air quality plan.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c) Expose sensitive receptors to substantial pollutant concentrations.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

e) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

f) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

3.2.5 Environmental Analysis

THRESHOLD 3.2-A	Conflict with or obstruct implementation of the applicable air quality plan

As identified in the 2015 Draft EIR, the SMAQMD and PCAPCD have adopted various strategies necessary for emissions reductions through regulatory controls. Emissions projections are based on population, vehicle, and land use trends typically identified by the local cities, counties, and air districts, as well as by the Sacramento Area Council of Governments (SACOG). The proposed Project would increase service and ridership on the Capitol Corridor system. The Project vicinity is well developed. Accordingly, increased passenger rail service would not materially increase the overall growth pressure in the communities served by CCJPA. While the proposed Project would create four additional operation and maintenance positions at the Roseville Station, the new jobs would represent less than 0.1 percent of total employment in the Roseville area. The number of new jobs created by the proposed Project would therefore be within the growth projections of PCAPCD, SMAQMD, and SACOG for the region. Based on this analysis, the 2015 Draft EIR concluded that the proposed Project would be consistent with recent growth projections for the region and would not conflict with the current air quality plans.

While short-term emissions would be generated during construction, these would be mitigated to below air district significance thresholds. Likewise, long-term operation of the proposed Project would result in a net reduction of all criteria pollutant emission except NO_X under design year (2035) conditions. While NO_X emissions would not be reduced, the NO_X emissions would also not exceed air district thresholds for NO_X. The 2015 Draft EIR identified that the design concept and scope of the proposed Project also consistent with SACOG's Metropolitan Transportation Plan/ Sustainable Communities Strategy (MTP/SCS).

Operation of the proposed Project would contribute to SACOG's goals to improve long-term air quality, reduce on-road vehicle miles traveled (VMT), and increase alternative transportation. The 2015 Draft EIR concluded that the proposed Project would not conflict with or obstruct implementation of any applicable land use plan or policy and that impacts would be less than significant.

Railroad Bridge Crossings

Transportation Conformity applies in areas that are "nonattainment" or "attainment-maintenance" for the NAAQS, and only for the standards that are or previously were violated. Conformity analysis and determinations are done at regional and project-level scales. From a practical viewpoint, the pollutant analyses addressed by project-level conformity focus on CO and PM hot-

spots. Regional conformity pollutant analyses can involve CO, PM, and O_3 precursors (ROG and NOx) emissions. The railroad bridge crossings are located within the SVAB, which is designated as a nonattainment area for the O_3 and $PM_{2.5}$ NAAQS and an attainment area for PM_{10} NAAQS. However, the area is still considered maintenance for the PM_{10} NAAQS.

Since O_3 impacts are regional in nature, projects that are included in a Regional Transportation Plan and Transportation Improvement Project regional emissions analysis do not require project-level analysis for conformity. The SMAQMD adopted the *Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment Plan and Reasonable Further Progress Plan* (i.e., O_3 State Implementation Plan [SIP]) to plan for and achieve compliance with the federal and state O_3 standards. The railroad bridge crossings would not interfere with the control measures described in the O_3 SIP. Furthermore, the revised Project would provide transportation benefits that reduce pollutant emissions, including O_3 precursors, by improving traffic operations and efficiency.

Passenger Train Layover Facility

The revised passenger train layover facility would not increase passenger train frequency beyond the additional service evaluated in the 2015 Draft EIR. Implementation of the revised Project would result in the relocation of the proposed passenger train layover facility, resulting in minor additional locomotive travel of approximately two minutes per train. Therefore, the revised Project would not increase the overall growth pressure in the communities served by CCJPA, and the revised Project would be consistent with recent growth projections for the region and would not conflict with the current air quality plans. As a result, operation of the revised Project would contribute to SACOG's goals to improve long-term air quality, reduce VMT, and increase alternative transportation. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.2-B	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard

The 2015 Draft EIR identified that construction emissions associated with the proposed Project would exceed both the SMAQMD's and PCAPCD's daily NO_X thresholds of 85 pounds per day and 82 pounds per day, respectively. To reduce NO_X emissions generated by construction activities associated with the proposed Project, the 2015 Draft EIR identified implementation of Mitigation Measures AQ-2a and AQ-2b. Mitigation Measure AQ-2a requires the proposed Project to implement enhanced construction best management practices to reduce construction related NO_X emissions while Mitigation Measure AQ-2b requires the use of modern fleet vehicles for on-road material delivery and haul trucks. With implementation of Mitigation Measures AQ-2a and AQ-2b, NO_X construction emissions that would occur within PCAPCD's jurisdiction would not exceed PCAPCD's daily NO_X threshold of 82 pounds per day.

With implementation of Mitigation Measures AQ-2a and AQ-2b, NO_X construction emissions that would occur within SMAQMD's jurisdiction would still exceed SMAQMD's daily NO_X threshold of 85 pounds per day. The 2015 Draft EIR identified Mitigation Measure AQ-2c to further reduce

NO_X construction emissions. Mitigation Measure AQ-2c requires the usage of EPA-rated Tier 3 or higher rated construction equipment and the purchase of NO_X credits to offset remaining NO_X emissions. With implementation of Mitigation Measures AQ-2a through AQ-2c, NO_X construction emissions that would occur within SMAQMD's jurisdiction would not exceed SMAQMD's daily NO_X threshold of 85 pounds per day.

The 2015 Draft EIR also identified that operations emissions associated with the proposed Project has the potential to create air quality impacts through increased train activity and maintenance activities. However, the proposed Project would also improve existing passenger rail opportunities, in turn removing single-occupancy vehicles from the transportation network. Long-term operation of the proposed Project would result in a net reduction of all criteria pollutant emissions except for NO_X under Project design year (2035) conditions. The estimated emissions reductions would be a regional air quality benefit. While NO_X emissions would slightly increase with implementation of the proposed Project, the net change in emissions under Project design year (2035) conditions would not exceed SMAQMD or PCAPCD thresholds.

The 2015 Draft EIR also identified that Sacramento and Placer Counties are in a nonattainment area for the federal ozone and $PM_{2.5}$ standards. SMAQMD's emissions thresholds represent the maximum emissions a project may generate in SMAQMD before contributing to a cumulative impact on regional air quality. Therefore, exceedances of the SMAQMD project-level thresholds would be cumulatively considerable for project activities occurring in Sacramento County.

Project construction emissions generated in Sacramento County would not exceed SMAQMD's project-level thresholds with implementation of Mitigation Measures AQ-2a through AQ-2c. Project operation emissions would result in a net reduction of all criteria pollutant emission except NO_X. However, while NO_X emissions would slightly increase, the minor increase in NO_X emissions would not exceed SMAQMD daily thresholds. With implementation of Mitigation Measures AQ-2a through AQ-2c, neither construction nor operation of the proposed Project would result in a cumulatively considerable or cumulative air quality impact in Sacramento County.

PCAPCD has developed a dual approach for evaluating cumulative air quality impacts. Construction emissions would be cumulatively considerable if they exceed the project-level thresholds identified by the PCAPCD. However, operational emissions are evaluated against a unique cumulative threshold: 10 pounds per day of ROG and NO_X. As discussed previously, with implementation of Mitigation Measures AQ-2a and AQ-2b, construction emissions in Placer County would not exceed PCAPCD's project-level thresholds.

Project operation emissions would result in a net reduction of all criteria pollutant emission except NO_X. However, project operation emissions of NO_X would exceed 10 pounds per day threshold for cumulatively considerable impacts. Since operational NO_X emissions would exceed PCAPCD's cumulative threshold, implementation of the proposed Project would result in a cumulatively considerable air quality impact in Placer County under CEQA. As part of the 2015 Final EIR certification, CCJPA adopted a statement of overriding considerations associated with operational emissions exceeding the NO_X cumulative emissions threshold set by the PCAPCD. CCJPA found that the Project benefits (improving rail service reliability and operational efficiency

within the Capitol Corridor, a reduction in VMT by nearly 12 million and lower emissions in the transportation study area) outweighed this significant and unavoidable impact.

Railroad Bridge Crossings

Site preparation and construction would involve clearing, cut-and-fill activities, grading, removing, or improving existing roadways and bridges, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment and on-road vehicles powered by gasoline and diesel engines are also anticipated and would include CO, NO_X, ROG, directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. Construction activities in the area may temporarily increase traffic congestion and slow the speed of traffic, resulting in a temporary increase in on-road emissions. These emissions would be limited to the immediate area impacted by construction-related traffic.

Passenger Train Layover Facility

The revised passenger train layover facility would still be located in Roseville, which is part of Placer County. Air quality within this air basin would continue to be governed by PCAPCD air quality rules and regulations. Table 3.2-2 summarizes the results of the emissions modeling, which are compared to PCAPCD's criteria pollutant numeric thresholds for construction emissions (PCAPCD 2017a).

The emissions shown in Table 3.2-2 are the maximum daily emissions that would occur, consistent with PCAPCD guidance. Maximum daily emissions are conservative, because they capture the emissions that would occur on the worst-case day of construction, whereas the use of average daily thresholds in other air districts results in lower emissions values that are averaged across the construction period.

It should be noted that the emissions presented in Table 3.2-2 are also conservative, because the 2015 Draft EIR included emissions for construction of a new 4,600-square-foot maintenance facility, which would be replaced by the revised passenger train layover facility. However, it is not feasible to adjust the emissions disclosed in the 2015 EIR to subtract the contribution from the original maintenance facility construction. As such, the revised Project's emissions are summed with emissions in the third year of construction associated with the original Sacramento to Roseville Third Main Track Project. As a result, there may be some unavoidable double counting of emissions between the original maintenance facility and the revised passenger train layover facility. Although double counting may occur, summing emissions in this way is a conservative approach and allows for a comprehensive evaluation of the Sacramento to Roseville Third Main Track Project with the revised passenger train layover facility.

Table 3.2-2. Estimated Construction Emissions for the Revised Project (pounds per day)

Year/Condition	ROG	NO_x	PM_{10}
Unmitigated Construction Emissions			
Construction – Year 1 (2015 EIR)	2	24	12
Construction – Year 2 (2015 EIR)	9	96	50
Construction – Year 3 (2015 EIR)	24	30	19
Revised Passenger Train Layover Facility	44	593	50
Subtotal	**68**	**623**	**69**
PCAPCD Threshold	**82**	**82**	**82**
Exceeds PCAPCD Threshold?	**No**	**Yes**	**No**
Mitigated Construction Emissions			
Construction – Year 1 (2015 EIR)	2	19	12
Construction – Year 2 (2015 EIR)	9	77	50
Construction – Year 3 (2015 EIR)	24	24	19
Revised Passenger Train Layover Facility	16	129	24
Subtotal	**40**	**153**	**43**
PCAPCD Threshold	**82**	**82**	**82**
Exceeds PCAPCD Threshold?	**No**	**Yes**	**No**

Notes: PCAPCD = Placer County Air Pollution Control District; ROG= reactive organic gases; NO_x = nitrogen oxide; PM_{10} = particulate matter no more than 10 microns in diameter.
Source: ICF 2023

As shown in Table 3.2-2, the revised Project's unmitigated construction activities would generate NO_X emissions that exceed the applicable PCAPCD numeric threshold of 82 pound per day. The primary reason for the exceedance of the emissions threshold is from the use of locomotives to haul ballast from quarries to the Project site. The ballast-hauling locomotives are high-horsepower and thus emissions-intensive equipment, but the use of the locomotives would occur for only 4 days during the construction period. On these days, the maximum daily emissions scenario would occur, and the threshold would be exceeded; however, for the majority of days during construction the emissions of NO_X would be substantially lower. The average emissions during construction would thus result in lower emissions than those presented in Table 3.2-2.

With implementation of previously identified Mitigation Measures AQ-2a and AQ-2b, NO_X construction emissions that would occur within PCAPCD's jurisdiction would still exceed PCAPCD's daily NO_X threshold of 82 pounds per day. Similar to what was identified in the 2015 Draft EIR for construction emission that would exceed SMAQMD daily thresholds, the revised Project would modify 2015 Draft EIR Mitigation Measure AQ-2c to include additional PCAPCD requirements to further reduce NO_X construction emissions as follows:

> **Mitigation Measure AQ-2c: Reduce construction emissions to below SMAQMD and PCAPCD NOX thresholds (SMAQMD and PCAPCD).** CCJPA shall ensure that construction-related emissions do not exceed SMAQMD's construction NOX threshold of 85 pounds per day. Potential measures in addition to those listed in Mitigation Measures AQ-2a and AQ-2b include but are not limited to those listed below.
>
> - Require the usage of EPA-rated Tier 3 or higher rated construction equipment. In general, the following NOX reductions can be achieved when replacing Tier 2 equipment (fleet average) with higher rated engine tiers.
>   - Tier 3—38 percent NOX reduction.
>   - Tier 4 interim—68 percent NOX reduction.
>   - Tier 4 final—94 percent NOX reduction.
> - Work with SMAQMD to purchase NOX credits to offset remaining NOX construction emissions exceeding SMAQMD thresholds.
>
> CCJPA shall also ensure that construction-related emissions do not exceed PCAPCD's construction NO_X threshold of 82 pounds per day. Potential measures include but are not limited to those listed below.
>
> - Require the usage of EPA-rated Tier 4 Final rated construction equipment. In general, replacing Tier 2 equipment with Tier 4 Final equipment can result in a 94% reduction in NO_X emissions.
> - Require the usage of EPA-rated Tier 4 locomotives for ballast hauling between quarries and the Project site.
> - Work with PCAPCD to purchase NO_X credits to offset remaining NO_X construction emissions exceeding PCAPCD thresholds.

Modified Mitigation Measure AQ-2c would require the revised Project to utilize EPA-rated Tier 4 rated construction equipment and the purchase of NO_X credits to offset remaining NO_X emissions. The use of offsets would only apply to days when the NOx threshold is exceeded. As indicated above, the number of days that emissions would be exceeded would be limited to the days that locomotive ballast hauling would occur (i.e., 3-4 days). With implementation of Mitigation Measures AQ-2a and AQ-2b and Modified Mitigation Measure AQ-2c, NO_X construction emissions that would occur as a result of the construction of the revised passenger train layover facility would not exceed PCAPCD's daily NO_X threshold of 82 pounds per day.

Table 3.2-3 summarizes the results of the emissions modeling, which are compared to PCAPCD's criteria pollutant numeric thresholds for operational emissions (PCAPCD 2017a).

Table 3.2-3. Operational Emissions – Revised Project Design Conditions (2035) (pounds per day)

Source	ROG	NO_x	CO	PM_{10}	$PM_{2.5}$	SO_2
Train Operation	0.9	21.9	28.1	0.3	0.3	0.1
Public Vehicles	- 2.7	- 5.9	- 29.1	- 6.2	- 1.9	- 0.2
Public Buses – Thruway	< - 0.1	< - 0.1	< - 0.1	< - 0.1	< - 0.1	< - 0.1
Public Buses – Roseville	< - 0.1	< - 0.1	< - 0.1	< - 0.1	< - 0.1	< - 0.1
O&M at Roseville Station	< - 0.1	< - 0.1	< - 0.1	< - 0.1	< - 0.1	< - 0.1
O&M at Roseville Layover Facility	< - 0.1	< - 0.1	0.3	0.1	< - 0.1	< - 0.1
Total Net Change	**- 1.6**	**16.1**	**- 0.6**	**-5.8**	**-1.6**	**-0.1**
PCAPCD Threshold	**55**	**55**	**-**	**82**	**-**	**-**
Exceeds PCAPCD Threshold?	**No**	**No**	**N/A**	**No**	**N/A**	**N/A**

Notes: PCAPCD = Placer County Air Pollution Control District; ROG= reactive organic gases; NO_x = nitrogen oxide; PM_{10} = particulate matter no more than 10 microns in diameter.
Source: ICF 2023

Emissions are shown for various sources in Table 3.2-3, including those that are not affected by the Project (e.g., public on-road vehicles and buses), because the location of the revised passenger train layover facility does not affect ridership (and thus on-road vehicle travel) or bus service. As shown in Table 3.2-3, operation of the revised Project would not generate ROG, NO_X, or particulate matter that would exceed the applicable PCAPCD numeric thresholds. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.2-C	Expose sensitive receptors to substantial pollutant concentrations

The 2015 Draft EIR analyzed various air quality pollutants that could be generated by implementing the proposed Project including PM_{10} fugitive dust emissions, CO concentrations, diesel particulate matter (DPM) exhaust emissions, and exposure to Naturally Occurring Asbestos.

PM_{10} Fugitive Dust Emissions. As identified in the 2015 Draft EIR, earthmoving activities during construction would generate fugitive PM emissions that could expose nearby sensitive receptors to increased health risk. SMAQMD has adopted the PM_{10} CAAQS as a threshold for the evaluation of construction-related fugitive dust emissions. Because $PM_{2.5}$ is a subset of PM_{10}, the SMAQMD

assumes that projects in excess of the PM_{10} CAAQS would also result in a significant impact associated with $PM_{2.5}$ emissions (SMAQMD 2014).

SMAQMD's CEQA guidelines consider projects that implement all SMAQMD-required BMPs and disturb less than 15 acres per day (i.e., grading, excavation, cut and fill) to not have the potential to exceed the PM_{10} CAAQS. The 2015 Draft EIR made the assumption that construction activities in SMAQMD would not disturb more than 15 acres on a daily basis. With implementation of Mitigation Measure AQ-4, which requires implementation of air quality-related BMPS recommended by SQAQMD and PCAPCD, the 2015 Draft EIR concluded that the Project would not result in the exceedance of SMAQMD's PM threshold. This impact would be less than significant after implementation of Mitigation Measure AQ-4.

CO Concentrations. The 2015 Draft EIR identified that increased passenger traffic near the Sacramento and Roseville stations would have the potential to create CO hot spots. As part of the 2015 Draft EIR, a screening-level analysis was conducted for existing (2013) and design year (2035) conditions. The screening-level analysis confirmed that CO concentrations would not contribute to any new localized violations of the 1-hour or 8-hour ambient air quality standards. Since the screening-level analysis assumed that all Project-generated traffic would use only two intersections, actual CO concentrations that would be generated at multiple intersections surrounding the transit stations would not result in CO hot spots. The 2015 Draft EIR concluded that this impact would be less than significant.

DPM Exhaust Emissions. Construction activities would generate DPM exhaust emissions from the use of heavy-duty equipment within the Project corridor. Cancer health risks associated with exposure to diesel exhaust are typically associated with chronic exposure, in which a 70-year exposure period is assumed. Multiple sensitive receptors (e.g., residences) are located within 0.5 mile of the Project corridor with the closest nearest receptor located within 25 feet from the existing Roseville station. As identified in the 2015 Draft EIR, construction associated with the proposed Project would not result in chronic non-cancer or cancer risk in excess of SMAQMD or PCAPCD health risk thresholds. In addition, the analysis contained in the 2015 Draft EIR does not account for potential DPM reductions achieved by tier 4 engines incorporated into the construction fleet as part of Mitigation Measure AQ-2c. To the extent that CCJPA elects to use tier 4 engines to meet required NOX reductions, health risks would be even lower than those identified in the 2015 Draft EIR. The 2015 Draft EIR concluded that this impact would be less than significant.

The 2015 Draft EIR also identified that there would be increased DPM emissions generated by expanded locomotive activity both along the rail line and during idling at the Roseville station. Cancer health risk from exposure to diesel exhaust is associated with chronic exposure, in which a 70-year exposure period was assumed in the 2015 Draft EIR. Under Project design year (2035) conditions, health risks associated with locomotive operation and idling at the Roseville station are below the SMAQMD's and PCAPCD's risk thresholds for chronic non-cancer hazard index (HI) and DPM cancer risk. This reduction in risk is primarily due to the use of Tier 4 engines. Since health risks at all locations under design year conditions would not exceed applicable air district thresholds, the 2015 Draft EIR concluded that this impact would be less than significant.

Naturally Occurring Asbestos (NOA). Disturbance of rock and soil that contains NOA can result in consequent exposure to the public. Asbestos most commonly occurs in serpentine rock and its parent material, ultramafic rock. According to hazard identification maps, NOA in Sacramento County is limited to eastern areas near the city of Folsom (Higgins and Clinkenbeard 2006). Therefore, the 2015 Draft EIR concluded that the proposed Project would have no potential to expose receptors to NOA in Sacramento County. The Naturally Occurring Asbestos Hazard map for Placer County indicates that the Placer County portion of the Project corridor is in an area "least likely to contain NOA" (California Geological Survey 2008). The 2015 Draft EIR identified that the submission of an NOA mitigation plan is not required for the proposed Project, but compliance with PCAPCD Rule 228 is required. The 2015 Draft EIR concluded that this impact would be less than significant.

Railroad Bridge Crossings

The railroad bridge crossings are located within the city of Sacramento, which is a densely populated urban area. The areas adjacent to the SR 51/I-80/CapCity corridor primarily include both single-family and multi-family residential developments, a regional park (i.e., Sutter's Landing Regional Park), commercial developments (i.e., restaurants, retail spaces, and offices), and some light industrial uses. The SMAQMD defines sensitive receptors to include residential dwellings (including single-family houses and multi-family residential buildings, townhouses, and apartments), schools, daycare centers, hospitals, and senior-care facilities.

PM_{10} Fugitive Dust Emissions/CO Concentrations/DPM Exhaust Emissions. As identified in the 2015 Draft EIR, earthmoving activities during construction would generate fugitive PM emissions that could expose nearby sensitive receptors to increased health risk. SMAQMD has adopted the PM_{10} CAAQS as a threshold for the evaluation of construction-related fugitive dust emissions. Because $PM_{2.5}$ is a subset of PM_{10}, the SMAQMD assumes that projects in excess of the PM_{10} CAAQS would also result in a significant impact associated with $PM_{2.5}$ emissions (Sacramento Metropolitan Air Quality Management District 2014).

Per federal transportation conformity regulations (40 CFR 93.123(c)(5)), construction-related activities that cause temporary increases in emissions do not require a hot-spot analysis. Construction emissions are defined as those that occur only during the construction phase of the project and last five years or less at any individual site. They typically fall into two main categories:

- *Fugitive Dust*: Emissions from construction due to ground disturbance. All air districts and the California Health and Safety Code (Sections 41700–41701) prohibit "visible emissions" exceeding three minutes in one hour – this applies not only to dust but also to engine exhaust. In general, this is interpreted as visible emissions crossing the right-of-way line.

  Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of materials. Unless properly controlled, vehicles leaving the site may deposit mud on the interstate or local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions may vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions depend on soil moisture, silt content of soil, wind speed, and the amount of

equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

- *Construction equipment emissions*: Diesel exhaust particulate matter is a California-identified TAC, and localized issues may exist if diesel-powered construction equipment is operated near sensitive receptors.

Project-level conformity requires project sponsors demonstrate their transportation project will not cause or contribute to any new localized CO, PM_{10}, and/or $PM_{2.5}$ violations, increase the frequency or severity of any existing CO, PM_{10}, and/or $PM_{2.5}$ violations, or delay timely attainment of any NAAQS or any required interim emission reductions or other SIP milestones. This is demonstrated through a hot-spot analysis where emissions are modeled, both with and without any mitigation measures committed to in the MTP.

The railroad bridge crossings are located in an attainment area for CO, maintenance for PM_{10}, and a nonattainment area for $PM_{2.5}$. Therefore, a project-level conformity analysis applies to the Project for particulate matter (PM_{10} and $PM_{2.5}$) under 40 CFR 93.109. Hot-spot analysis for particulate matter is only required for projects found to meet the definition of a POAQC through interagency consultation with the MPO's the Project Level Conformity Group (PLCG). The railroad bridge crossings were found not to be a POAQC by SACOG's PLCG on January 19, 2021. Therefore, a particulate matter (i.e., PM_{10} and/or $PM_{2.5}$) hot-spot analysis is not required.

40 CFR 93.123(c)(5) states that: "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site." Since construction of the railroad bridge crossings is expected to last less than five years, an evaluation of CO, PM_{10}, and $PM_{2.5}$ emissions during Project construction is not required for project-level conformity determination.

Naturally Occurring Asbestos (NOA). As identified in the 2015 Draft EIR, NOA in Sacramento County is limited to eastern areas near the city of Folsom. The replacement or realignment of the railroad bridge crossings would be located in the City of Sacramento. Therefore, the construction or operation of the railroad bridge crossings would have no potential to expose receptors to NOA. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

PM_{10} Fugitive Dust Emissions. As identified in the 2015 Draft EIR, earthmoving activities during construction would generate fugitive PM emissions that could expose nearby sensitive receptors to increased health risk. However, as noted in Table 3.2-2, construction emissions associated with the revised passenger train layover facility would not exceed the daily PM_{10} threshold. Therefore, no impacts are anticipated to occur with this topic.

CO Concentrations. As noted in the 2015 Draft EIR, increased passenger traffic near the Sacramento and Roseville stations would have the potential to create CO hot spots. The revised Project would not result in additional motor vehicles to travel to the Sacramento or Roseville transit stations, because ridership is not affected by the specific location of a passenger train layover facility. Therefore, the revised Project would not have the potential to create CO hot spots at the intersections surrounding the revised passenger train layover facility site. The revised Project would not change the significance conclusions or result in any new significant CO hot spot impacts not previously identified in the 2015 Draft EIR.

DPM Exhaust Emissions. Construction activities would generate emissions of DPM from the use of heavy-duty off-road equipment, including ballast-hauling locomotives, and trucks used for hauling materials. During the Project's operational phase, increased DPM emissions would be generated by locomotive activity along the rail line covering the additional distance to the proposed layover facility, locomotive idling at the layover facility, and the proposed diesel-fueled emergency generator. Sensitive receptors in the Project area include Roseville High School and multiple residences located directly adjacent to the Project boundary.

Because the Project would introduce DPM emissions in an area near existing sensitive receptors, a Health Risk Assessment (HRA) was conducted in accordance with PCAPCD guidelines. The HRA uses EPA's most recent air dispersion model, AERMOD (version 22112), and risk assessment methodologies for DPM provided by the Office of Environmental Health Hazard Assessment (OEHHA 2015). The HRA consists of three parts: an emissions inventory, air dispersion modeling, and risk calculations.

Exposure to DPM emissions from construction activities and locomotive movement and idling during Project operation was assessed by predicting the health risks in terms of excess cancer, non-cancer hazard impacts, and elevated DPM concentrations. Cancer health risk from exposure to diesel exhaust is associated with chronic exposure, in which a 30-year exposure period is assumed. DPM exposure and associated health risks are dependent on several factors, including variation in receptor behavior and physiology, as well as meteorological conditions and the release characteristics of the engine exhaust. Depending on the release height and other variables, the highest exposure may not be at locations nearest to the track. Note that DPM concentrations, and thus cancer risks, dissipate as a function of distance from the emissions source. The results of the HRA are summarized in Table 3.2-4 and compared to PCAPCD's health risk thresholds (PCAPCD 2017b).

Table 3.2-4. Mitigated and Unmitigated Health Risks Resulting from Revised Passenger Train Layover Facility Construction and Operation

Condition	DPM Cancer Risk	Chronic Non-Cancer HI
Construction – Unmitigated	2.3	< 0.01
Construction – Mitigated	1.0	< 0.01
Operation	6.5	< 0.01
Cumulative – Unmitigated (Construction + Operation)	8.8	-
Cumulative – Mitigated (Construction + Operation)	7.5	-
PCAPCD Threshold	*10*	*1*
Exceed?	**No**	**No**

Notes: Data represent maximum health risks at evaluated receptor locations; DPM = diesel particulate matter
Source: ICF 2023

As shown in Table 3.2-4, DPM emissions generated by the revised passenger train layover facility construction, operation, and the cumulative total of both would not result in chronic non-cancer or cancer risks that exceed PCAPCD health risk thresholds under the unmitigated condition. The mitigated construction health risk estimates account for reductions in DPM emissions achieved by using Tier 4 Final construction equipment, as outlined in modified 2015 Draft EIR Mitigation Measure AQ-2c. However, this mitigation measure is not required to prevent health risks from exceeding the cancer risk threshold. The revised Project would not change the significance conclusions or result in any new significant HRA impacts not previously identified in the 2015 Draft EIR.

Naturally Occurring Asbestos. The 2015 Draft EIR evaluated the potential for construction in Placer County to expose sensitive receptors to NOA. Similar to what was identified for the original passenger train layover facility, the revised passenger train layover facility is located in an area "least likely to contain NOA" according to the *Naturally Occurring Asbestos Hazard* map for Placer County (California Geological Survey 2008). Therefore, the submission of an NOA mitigation plan is not required for the revised Project, but compliance with PCAPCD Rule 228 would be required. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.2-D	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

The 2015 Draft EIR addressed the potential for odors to be generated during construction and operation of the Project. Sources of odor that could be generated during construction activities would include diesel exhaust from construction equipment and asphalt paving. However, odors from equipment exhaust would be localized and generally confined to the immediate area

surrounding the construction site. The 2015 Draft EIR identified that operation of the Project would not include any uses identified by Air Resources Board as being associated with odors and would not produce objectionable odors. Any odors resulting from diesel fuel combustion along the extended track would be short term, occurring as trains pass by, and would not be significant during operations.

Railroad Bridge Crossings

The replacement or realignment of the railroad bridge crossings would still require the same type of construction activities previously identified in the 2015 Draft EIR. Therefore, similar impacts associated with the generation of odors would occur during construction activities in the form of diesel exhaust and asphalt paving. Operation of the railroad bridge crossings would not result in new sources of odors. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction of the passenger train layover facility at its revised location would still require the same type of construction activities previously identified in the 2015 Draft EIR. Therefore, similar impacts associated with the generation of odors would occur during construction activities in the form of diesel exhaust, asphalt paving, and application of paints. Operation of the passenger train layover facility at its revised location would not result in new sources of odors that would not already exist in the area. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.2-E	Generate greenhouse gas emissions, either directly, or indirectly, that may have a significant impact on the environment

Construction of the proposed Project would generate direct emissions of CO_2, CH_4, and N_2O from mobile and stationary construction equipment exhaust, as well as employee vehicle and haul truck exhaust. The 2015 Draft EIR identified that construction of the proposed Project would generate a total of 3,573 metric tons of CO2e. This is equivalent to adding almost 750 typical passenger vehicles per year to the road during construction. As described further below, these short-term emissions would be offset through long-term GHG savings achieved during Project operation.

Operation of the proposed Project has the potential to generate long-term GHG emissions from transit operations and changes in regional traffic patterns. Transit operations would generate GHGs through use of locomotive diesel fuel. Changes in regional traffic would primarily affect emissions levels through changes in gasoline consumption associated with the diversion of private automobile trips to passenger rail. Reductions in passenger bus service and standby electricity usage would also affect GHG emissions levels relative to existing conditions. The 2015 Draft EIR identified that GHG benefits achieved through operation of the proposed Project would offset the short-term construction emissions in approximately 8 years. Emissions savings

achieved thereafter would contribute to reductions in GHG emissions. This would be an environmental benefit. The 2015 Draft EIR concluded that GHG emission impacts were determined to be less than significant.

Railroad Bridge Crossings

It is anticipated that modifications at these railroad bridge crossings would require the same construction activities as those identified in the 2015 Draft EIR. The realignment or replacement of the existing railroad bridge crossings would generate some additional emissions of CO_2, CH_4, and N_2O from mobile and stationary construction equipment exhaust, as well as employee vehicle and haul truck exhaust. However, these short-term emissions would be offset through long-term GHG savings achieved during Project operation. Implementation of the revised Project would also reduce operational GHG emissions under design year conditions. GHG benefits achieved through operation of the revised Project would offset the short-term construction emissions. Emissions savings achieved thereafter would contribute to reductions in GHG emissions, which would be an environmental benefit. Accordingly, GHG emissions generated by the revised Project would not exceed any published draft emissions thresholds or the net zero threshold used for this analysis.

Passenger Train Layover Facility

Table 3.2-5 summarizes the revised Project's estimated construction GHG emissions.

Table 3.2-5. Estimated Construction GHG for the Revised Project (metric tons per year)

Year	CO_2	CH_4	N_2O	Other	CO_2e
Construction – Year 1 (2015 EIR)	1,716	< 1	< 1	3	1,739
Construction – Year 2 (2015 EIR)	1,675	< 1	< 1	3	1,698
Construction – Year 3 (2015 EIR)	133	< 1	< 1	< 1	135
Revised Passenger Train Layover Facility	494	< 1	< 1	< 1	508
Total	**4,018**	**< 1**	**< 1**	**6**	**4,080**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalents; other = emissions associated with on road gasoline vehicles, including CO_2, CH_4, N_2O, and HFCs; and SF_6 emissions from electricity usage.

Source: ICF 2023

As shown in Table 3.2-6, Project construction would result in GHG emissions that would generate approximately 4,080 metric tons of CO_2e for each year of construction associated with the revised passenger train layover facility. This estimate is conservative, because as previously noted, some unavoidable double counting may occur between these proposed layover facility emissions and the construction emissions from the maintenance facility from the 2015 Draft EIR. As noted in the 2015 Draft EIR, short-term emissions during construction would be offset through long-term GHG savings achieved during operations. This conclusion would still apply to the revised Project.

Table 3.2-6. Estimated Operational GHG for the Revised Project (metric tons per year)

Design Year Conditions (2035)	CO_2	CH_4	N_2O	Other	CO_2e
Train operation	3,147.9	0.2	0.1	-	3,176.1
Pubic vehicles	- 3,387.8	-	-	- 40.7	- 3,428.5
Public Buses – Thruway	- 18.4	< -0.1	< -0.1	-	- 18.4
Public Buses – Roseville	7.1	0.1	< 0.1	-	7.1
O&M at Roseville Station	18.0	0.1	< 0.1	0.1	21.2
Standby Electricity Usage	- 36.2	< -0.1	< -0.1	< -0.1	- 36.7
O&M at Roseville Layover Facility	95.3	0.3	< 0.1	-	104.1
Total Net Change	**- 174.1**	**0.6**	**0.1**	**- 40.6**	**- 175.1**

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalents; other = emissions associated with on road gasoline vehicles, including CO_2, CH_4, N_2O, and HFCs; and SF_6 emissions from electricity usage.

Source: ICF 2023

Table 3.2-6 summarizes the revised Project's estimated operational GHG emissions. The emissions shown in Table 3.2-6 represent the entire Sacramento to Roseville Third Main Track Project with the revised location of the passenger train layover facility. The only difference in emissions between what is shown in Table 3.2-6 and what is shown in the 2015 Draft EIR is the additional run-time of approximately two minutes that would occur from the revised passenger train layover facility location. Idling emissions would remain the same as in the 2015 Draft EIR and are thus not included in Table 3.2-6. As previously noted, the emissions shown in Table 3.2-6 are conservative because of the potential overlap between the proposed passenger train layover facility emissions and the 2015 Draft EIR maintenance facility emissions, which the proposed layover facility would likely replace.

As shown in Table 3.2-6, implementation of the Project would reduce operational GHG emissions under design year conditions. GHG benefits achieved through operation of the Project would offset the short-term construction emissions in approximately 23 years.[1] This timeframe is conservative, however, because of the overlap in emissions described above. In reality, the offset time is likely to be less than this value. Emissions savings achieved thereafter would contribute to reductions in GHG emissions, which would be an environmental benefit. Accordingly, GHG

[1] Calculated by dividing short-term construction emissions by the annual long-term emissions savings (4,080 metric tons CO_2e/ 175 metric tons CO_2e per year = 23 years).

emissions generated by the revised Project would not exceed any published draft emissions thresholds or the net zero threshold used for this analysis.

THRESHOLD 3.2-F	Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The 2015 Draft EIR addressed the potential impacts associated with the Project's consistency with the Global Warming Solutions Act of 2006, City of Sacramento CAP, and SACOG 2016 MTP/SCS. These benefits of the Project were determined to support implementation of SACOG's 2016 MTP/SCS and facilitate attainment of regional and statewide GHG polices and reduction targets of 7 percent for 2020 and 16 percent for 2035 through the reduction of single-occupancy vehicle usage and the provision of alternative transportation options within the Project corridor. The 2015 Draft EIR concluded that impacts associated with this topic area would be less than significant.

Railroad Bridge Crossings

SB 375 requires SACOG include SCSs in their regional transportation plan updates to describe how the GHG emissions reductions set by CARB would be met through land-use and transportation planning. In 2015, the SACOG Board adopted the *Sacramento Region Transportation Climate Adaptation Plan* as part of an update to the 2016 MTP/SCS. The plan provides high-level action and identifies key vulnerabilities to climate change in the region's transportation infrastructure and provides recommendations for best practices and strategies to meet the state targets for reducing GHG emissions from light-duty vehicles. In 2019, SACOG approved and adopted the *2020 MTP/SCS* and accompanying documents. 2020 MTP/SCS is the most recent update to its MTP, which includes implementation of transportation projects and Climate Initiatives Program that, together, would result in emissions from light-duty vehicles that meet the region's GHG reduction targets, per SB 375.[2] It provides for both priority and timely completion/implementation of the transportation control measures (TCMs).

CARB's Scoping Plan and SACOG's MTP/SCS include strategies to reduce single-occupancy vehicle usage and to increase alternative transportation (CARB 2022; SACOG 2019). The revised Project would result in additional realignment or replacement of existing railroad bridge overcrossings located on the I-80 which would support the overall Project efforts to expand passenger rail service and accommodate increased ridership throughout the Project corridor. As a result, implementation of the revised Project would support CARB and SACOG strategies to reduce single-occupancy vehicle usage and increase alternative transportation, as well as attainment of regional and statewide GHG policies and reduction targets.

[2] SACOG. 2019. *Draft Environmental Impact Report for the 2020 Metropolitan Transportation Plan/ Sustainable Communities Strategy SCH# 2019049139*. September.

Passenger Train Layover Facility

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation, including SB 32 and AB 1279. In December 2022, CARB adopted its Final 2022 Scoping Plan Update for Achieving Carbon Neutrality (2022 Scoping Plan), which identifies a technologically feasible, cost-effective and equity-focused path to achieve carbon neutrality by 2045, pursuant to AB 1279, as well as the GHG emissions reduction goal called for in SB 32. In addition, SACOG has adopted the 2020 MTP/SCS to reduce transportation-related emissions throughout the region. Consistency with these documents is evaluated below.

CARB's Scoping Plan and SACOG's MTP/SCS include strategies to reduce single-occupancy vehicle usage and to increase alternative transportation (CARB 2022; SACOG 2019). The revised Project would result in minor additional locomotive travel of approximately two minutes per train, but it would support efforts to expand passenger rail service and accommodate increased ridership, as the proposed passenger train layover facility would be used for maintenance of passenger trains. As a result, implementation of the revised Project would support CARB and SACOG strategies to reduce single-occupancy vehicle usage and increase alternative transportation, as well as attainment of regional and statewide GHG polices and reduction targets.

3.3 Biological Resources

3.3.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to biological resources, are identified in the 2015 Draft EIR (Chapter 3.3, Biological Resources). The regulatory framework for biological resources for this SEIR is the same as presented in 2015 Draft EIR.

3.3.2 Environmental Setting

The Project corridor crosses the eastern Sacramento Valley into the lower Sierra Nevada foothills. As part of the 2015 Draft EIR, a biological study area (BSA) was defined to encompass a 250-foot radius from the Project corridor centerline to capture resources that could be indirectly affected by construction activities. A smaller corridor, defined as the Project impact area (PIA) was defined for the assessment of direct effects. The PIA includes 15 feet either side of the Project corridor centerline. Because the Project would be constructed almost entirely within the existing UPRR right-of-way (ROW), the PIA itself exhibits the characteristics of a heavily utilized rail corridor traversing a predominantly urban environment, and is subject to regular and intensive disturbance associated with freight trains.

The BSA traverses the city of Sacramento, unincorporated areas of Sacramento County, and the city of Roseville. Land use in the Project vicinity consists primarily of developed land under a variety of commercial, industrial, and residential uses, as well as recreational uses. Land uses in and adjacent to the BSA are characterized by a high level of human disturbance. Habitat types within the BSA both aquatic (i.e., waters of the United States, including wetlands) and terrestrial. All aquatic habitats are considered sensitive, and some of the terrestrial habitats (primarily riparian habitats) are considered sensitive.

The following upland terrestrial habitat types are present in the BSA: annual grassland, blue oak woodland, elderberry savannah (blue elderberry stand), eucalyptus, Great Valley cottonwood riparian forest (Fremont cottonwood forest), Great Valley mixed riparian forest (Fremont cottonwood forest), montane hardwood, and urban. Of these upland terrestrial habitat types, three are considered terrestrial habitats of concern: Great Valley cottonwood riparian forest, Great Valley mixed riparian forest, and elderberry savannah. Several aquatic habitat types have been identified in the BSA: detention basin, isolated seasonal wetland, fresh emergent wetland, seasonal wetland, and other waters. All aquatic habitat types are considered habitats of concern.

3.3.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.3-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold BIO-1: 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 Wildlife or U.S. Fish and Wildlife Service *Construction* Construction of the proposed Project has the potential to impact several sensitive or special status species and associated habitats including: - Plant species (woolly rose-mallow, Sanford's arrowhead, and dwarf downingia) - Animal species (valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, Central Valley steelhead, Central Valley Chinook salmon, Sacramento winter-run Chinook salmon, giant gartersnake, western pond turtles, tricolored blackbird, Swainson's hawk and other raptors, burrowing owl, and pallid bats) *Operation* Operation and maintenance activities are unlikely to have impacts on special-status plant or animal species because these activities would occur where the vegetation communities (e.g., areas with potential habitat	*Construction* Potentially Significant *Operation* Less than Significant	**Mitigation Measure BIO-1a: Install fencing and/or flagging to protect sensitive biological resources.** Prior to construction, UPRR's contractor shall install high-visibility orange construction fencing and/or flagging, as appropriate, along the perimeter of the work area adjacent to Environmentally Sensitive Areas (e.g., sensitive habitats and elderberry shrubs). Where specific buffer distances are required for sensitive biological resources, they shall be specified under the corresponding measures below. UPRR shall ensure that the final construction plans show the locations where fencing will be installed. The plans shall also define the fencing installation procedure. UPRR or contractor (at the discretion of UPRR) shall ensure that the fencing is maintained throughout the duration of the construction period. If the fencing is removed, damaged, or otherwise compromised during the construction period, construction activities shall cease until the fencing is repaired or replaced. The Project's special provisions package shall provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within Environmentally Sensitive Area. **Mitigation Measure BIO-1b: Implement a worker environmental awareness training program for construction personnel.** Before any equipment staging, grading, or tree removal is undertaken in the PIA, UPRR shall prepare and implement a worker environmental awareness training program. The training program shall be provided to all construction personnel (contractors and subcontractors) to brief them on the need to avoid effects on sensitive biological resources (e.g., riparian habitat, active bird nests, bat roosts) located in the PIA and the penalties for not complying with applicable state and federal laws and permit requirements. The training program shall be delivered by a biologist who will inform all construction personnel about the life history and habitat	*Construction* Less than Significant *Operation* Not Applicable

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
for special-status plant and animal species) has already been removed or disturbed during construction activities.		requirements of special-status species with potential for occurrence onsite, the importance of maintaining habitat, and the terms and conditions of the BOs and other permits. The training program shall also cover general restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on sensitive biological resources during construction of the Build alternative. **Mitigation Measure BIO-1c: Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats.** UPRR shall retain a qualified biologist to implement the worker environmental awareness training program and to conduct periodic site visits during construction activities that involve ground disturbance (e.g., vegetation removal, grading, excavation, bridge construction) within or adjacent to Environmentally Sensitive Areas. The timing and frequency shall be determined through coordination with UPRR, but monitoring shall take place at least weekly. The purpose of the monitoring is to ensure that measures identified in this report are properly implemented to avoid and minimize effects on sensitive biological resources and to ensure that the Project complies with all applicable permit requirements and agency conditions of approval. The biologist shall ensure that fencing around Environmentally Sensitive Areas remains in place during construction and that no construction personnel, equipment, or runoff/sediment from the construction area enters Environmentally Sensitive Areas. The monitor shall complete a monitoring log for each site visit, and a final monitoring report shall be prepared at the end of construction for submittal to CCJPA, the Federal Railroad Administration (FRA), and other overseeing agencies (i.e., CDFW, USFWS, and NMFS), as appropriate. **Mitigation Measure BIO-3: Implement measures to avoid long-term effects on special-status plants documented in**	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		the Project impact area. If special-status plant species are found during the floristic survey, to the extent practicable and in consideration of other design requirements and constraints (e.g., meeting Project objectives and needs, avoidance of other sensitive resources) UPRR shall design the third track alignment to avoid or minimize potential impacts on special-status plants. If special-status plants cannot be avoided, UPRR shall consult with CDFW and USFWS (if federally listed species are found) to determine the appropriate compensatory measures for direct and indirect impacts that could result from Build Alternative construction. Measures may include preserving and enhancing existing populations, creation of offsite populations on Project mitigation sites through seed collection or transplantation, and restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals. A mitigation and monitoring plan shall be developed that describes how unavoidable effects on special-status plants will be compensated. **Mitigation Measure BIO-4: Implement measures to avoid and minimize impacts on valley elderberry longhorn beetles and their habitat.** A buffer zone of 100 feet or more shall be established and maintained around elderberry shrubs within the PIA, as feasible. Complete avoidance may be assumed when a 100-foot (or wider) buffer is established and maintained around elderberry plants with stems measuring 1 inch or more in diameter at ground level. In addition, the following avoidance and minimization efforts shall be implemented for construction operations in the vicinity of any elderberry shrubs that are not removed. • All areas to be avoided during construction activities, specifically the 100-foot buffer zone around elderberry shrubs, shall be fenced and flagged. In areas where	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		encroachment on the 100-foot buffer has been approved by USFWS, a minimum setback of at least 20 feet from the dripline of each elderberry shrub shall be provided to the extent practicable. In some cases, construction activity may be required within 20 feet of a shrub; in such cases, k-rails shall be placed at the greatest possible distance from the shrubs. • Signage shall be erected every 50 feet along the edge of avoidance areas with the following information: "This area is habitat of the valley elderberry longhorn beetle, a federally listed threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signage shall be clearly readable from a distance of 20 feet and shall be maintained for the duration of construction. • Preconstruction surveys shall be conducted for elderberry shrubs in the PIA and within 100 feet of the PIA. Preconstruction surveys shall be conducted to comply with mitigation measures. • Temporary construction impacts within the buffer area (i.e., within 100 feet of elderberry shrubs) shall be restored. If any portion of the buffer area is temporarily disturbed during construction, it shall be revegetated with native plants and erosion control shall be provided. • No insecticides, herbicides, fertilizers, or other chemicals that might harm the beetle or its host plant shall be used within 100 feet of any elderberry plant with one or more stems measuring 1 inch or more in diameter at ground level. All drainage water during and following construction shall be diverted away from elderberry shrubs.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• A written description of how buffer areas are to be restored, protected, and maintained after construction is completed shall be provided to USFWS. Mowing of grass can occur from July through April to reduce fire hazard; however, no mowing should occur within 5 feet of elderberry shrub stems. Mowing shall be conducted in a manner to avoid damaging shrubs. • Dirt roadways and other areas of disturbed bare ground within 100 feet of elderberry shrubs shall be watered at least twice a day to minimize dust emissions. Water shall not be sprayed directly on elderberry shrubs to avoid attracting Argentine ants. • For those shrubs that require being moved, direct impacts on valley elderberry longhorn beetles could occur during transplanting. Transplanting of elderberry shrubs has the potential to result in take of individual beetles because larvae or adults, if present in the stems, could be crushed or dislodged from the stems and become separated from the shrub. Transplanted elderberry shrubs may also experience stress, decline in health, or die due to changes in soil, hydrology, microclimate, or associated vegetation. The following measures shall be implemented in the event that transplantation or replacement of existing elderberry shrubs is required. ○ The transplantation guidelines outlined in the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (U.S. Fish and Wildlife Service 1999) shall be followed. These transplantation guidelines dictate the necessary timing and details of the transplanting. At the discretion of USFWS, shrubs that are unlikely to survive transplantation because of poor condition or location, or plants that would be extremely	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		difficult to move because of access problems, may be exempted from transplantation. ○ The loss of elderberry shrubs that must be transplanted or removed to facilitate construction of the Project shall be mitigated according to the requirements contained in the Conservation Guidelines for the Valley Elderberry Longhorn Beetle (U.S. Fish and Wildlife Service 1999). Elderberry shrubs shall be transplanted to or replaced in an offsite conservation area along with the appropriate number of elderberry seedlings/cuttings and associative native species as described in the Guidelines. ○ In cases where transplantation is not possible, minimization ratios shall be increased to offset the additional habitat loss. ○ Each elderberry stem measuring 1 inch or more in diameter at ground level that is adversely affected (i.e., transplanted, removed, or trimmed) shall be replaced, in the conservation area, with elderberry seedlings or cuttings at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems) depending on the size class of the affected stem, presence or absence of exit holes, and whether the shrub is located in a riparian or a nonriparian area. **Mitigation Measure BIO-5: Compensate for direct and indirect effects on vernal pool fairy shrimp and vernal pool tadpole shrimp habitat.** UPRR shall compensate for direct and indirect effects on vernal pool fairy shrimp and vernal pool tadpole shrimp habitat by implementing habitat preservation and creation as mitigation. Mitigation credits shall be purchased prior to commencement of any Project activities that could result in habitat loss or degradation.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• **Habitat preservation:** UPRR shall compensate for the direct permanent and temporary loss of habitat and indirect (habitat degradation) impacts on habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp at a ratio of 2:1 by purchasing vernal pool preservation credits from a USFWS-approved conservation bank. • **Habitat creation:** UPRR shall compensate for the direct permanent or temporary loss of habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp at a ratio of 1:1 by purchasing vernal pool creation credits from a USFWS-approved conservation bank. **Mitigation Measure BIO-6: Implement avoidance and minimization measures to reduce potential impacts on special-status fish.** UPRR shall comply with all water pollution protection provisions and conditions established by all regulatory authorities with jurisdiction over the Project. These measures include but are not limited to those listed below. • Risk of direct take of special-status fish species will be minimized by avoiding in-channel construction on the main channel of the American River during the peak migration period (November through May). • Prior to excavation activities at abutments, temporary sediment control structures shall be placed downslope of the area where disturbance of native soil is anticipated. Excavated soil shall be hauled away from the job site and disposed of at an appropriately permitted disposal facility. • All disturbed areas that will not be covered by paving shall be stabilized to prevent erosion by using temporary soil stabilization BMPs. • An erosion control and water quality protection plan shall be prepared subject to review and approval by the Central	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Valley Water Board. The plan will include but not be limited to the following measures to protect water quality during construction. ○ Construction activities within the area delineated by the OHWM on both sides shall be limited to the period from May 30 to October 1 of each construction year. ○ Construction activities that take place between October 15 and May 15 within the leveed floodway, but above the OHWM, shall be limited to those actions that can adequately withstand high river flows without resulting in the inundation of and entrainment of materials during flood flows. ○ Temporary stockpiling of construction material, including vehicles, portable equipment, supplies, fuels and chemicals, and stockpiled or exposed soils, shall be restricted to designated construction staging areas within the PIA. ○ Sheet metal cofferdams shall be used for all areas of extended in-water work, and pumped water will be routed to either: (1) a sedimentation pond located on a flat stable area above the OHWM that prevents silt-laden runoff to enter the river, or (2) a sedimentation tank/holding facility that allows only clear water to return to the river, with settled solids disposed of at an appropriate offsite location. ○ Erosion control measures that prevent soil or sediment from entering the river shall be implemented, monitored for effectiveness, and maintained throughout construction operations. ○ Refueling of construction equipment and vehicles within the leveed floodway shall only occur where	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		conditions meet all the following criteria: above the OHWM; within designated, paved, bermed areas where possible spills shall be readily contained; and away from all wetlands avoidance areas. ○ Truck and cement equipment shall not be cleaned within the leveed floodway. Equipment and vehicles operated within the leveed floodway shall be checked and maintained daily prior to operation to prevent leaks of fuels, lubricant, or other fluids to the river. ○ Litter and construction debris shall be removed from below the OHWM daily and disposed of at an appropriate site. All litter, debris, unused materials, equipment, and supplies shall be removed from construction staging areas above the OHWM at the end of each summer construction season. ○ No onsite harvesting of in-situ gravels shall be allowed for temporary landings and ramps. Where additional earth material is required below the OHWM, clean gravels (from an offsite commercial/permitted source) shall be the preferred material. If another type of engineered fill is required, it shall likewise be obtained from an offsite permitted source, and all excess earth material shall be properly disposed of outside the leveed floodway upon completion of the construction phase. If CDFW determines that the excess gravels used for fill would benefit fisheries, these gravels may be left onsite, consistent with an approved CDFW Streambed Alteration Agreement. • An effluent monitor plan that includes routine monitoring and reporting of discharge water and receiving water conditions must be prepared by the contractor and approved by the Central Valley Water Board.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• All tailings and drilling fluids from the construction of any cast-in-hole pilings for the new railroad bridge shall be contained and end-hauled from the site for proper disposal. • To avoid or minimize potential impacts on listed salmonids related to increased turbidity and sedimentation, turbidity increases associated with Project construction activities should not exceed the Central Valley Water Board water quality objectives for turbidity in the Sacramento River Basin (California Regional Water Quality Control Board Central Valley Region 2011). Turbidity levels are defined in nephelometric turbidity units (NTUs). The current threshold for turbidity levels in the American River, as listed in the Water Quality Control Plan for the Central Valley, is 10 NTUs. Increases in turbidity attributable to controllable water quality factors in response to Project activities may not exceed the following limits. ○ Where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU. ○ Where natural turbidity is greater than 5 NTUs, increases shall not exceed 20 percent. To ensure that turbidity levels do not exceed these thresholds during instream Project construction activities, UPRR shall retain a qualified water quality specialist to monitor turbidity levels from 50 feet upstream to 300 feet downstream of the point of in-stream construction activities. When construction activities potentially have the greatest water quality impact (e.g., during installation of temporary construction platform), water samples shall be collected four times daily or as outlined by the agencies. In the event of a detectable plume, work shall halt until the plume has dissipated to satisfactory levels.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Mitigation Measure BIO-7: Implement avoidance and minimization measures to reduce potential impacts on giant gartersnake. In areas that are identified as suitable upland and aquatic habitat for giant gartersnake, the following avoidance and minimization measures shall be implemented in accordance with the programmatic consultation. • Minimize disturbed areas to only those required to complete Project construction. • Limit construction windows to warm months (May 1–October 1) when snakes are more likely to be active and able to avoid construction activities. • Use exclusionary fencing to avoid wetland and other areas outside the proposed construction ROW. • Survey for giant gartersnakes in suitable aquatic or upland habitat in the PIA and within 200 feet of the PIA within 24 hours prior to the onset of construction and any time activities are halted for more than 2 weeks thereafter. • Allow any giant gartersnakes encountered to move away from construction activities on their own. • Prohibit the use of plastic, monofilament, jute, or similar erosion control matting that could entangle snakes in the PIA. • In giant gartersnake habitat, restore temporary impact areas to preproject conditions within the same season or, at most, the same calendar year. Monitor restored habitat and the construction zone for 1 calendar year, including a photo documentation report containing pre- and postconstruction photos, for submittal to USFWS 1 year from the date the restoration is completed.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Permanent Project-related impacts on aquatic and upland GGS habitat shall be replaced at a minimum ration of 3:1 (acres preserved to acres affected). **Mitigation Measure BIO-8: Implement measures to avoid and minimize impacts on western pond turtles.** UPRR shall implement the following measures to avoid and minimize impacts on western pond turtle. • Preconstruction surveys for western pond turtle shall be conducted within the BSA by a CDFW-approved biologist prior to the initiation of construction activities. If western pond turtle is found in the BSA during preconstruction surveys, CDFW shall be notified within 72 hours to determine the appropriate measures to prevent impacts on the species. • A qualified biologist shall be present during initial construction activities in Dry Creek, Magpie Creek, and the American River and during any dewatering activities. If any western pond turtles are observed in the construction area, including any dewatered areas, they shall be captured and relocated to an appropriate location up or downstream of the construction area. **Mitigation Measure BIO-9: Implement measures to avoid and minimize impacts on tricolored blackbirds during the breeding season.** If construction is scheduled to start during the breeding season (February 15–September 15), UPRR shall retain a CDFW-approved biologist to conduct preconstruction surveys for tricolored blackbird in the BSA. If tricolored blackbird nesting colonies are found in the BSA during preconstruction surveys, CDFW shall be notified within 72 hours to determine the appropriate measures to prevent impacts on the species. At a minimum, a 250-foot no disturbance buffer shall be established between the nesting colony and Project activities.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		The buffer distance may be modified based on coordination with CDFW and additional avoidance measures, such as periodic monitoring, may be required to ensure that the buffer distance is sufficient to avoid adverse effects. **Mitigation Measure BIO-10a: Implement measures to avoid and minimize impacts on Swainson's hawk and other nesting raptors.** UPRR shall implement the following measures to avoid and minimize impacts on Swainson's hawk and other nesting raptors. • If construction activities occur during the Swainson's hawk nesting period (February 15– September 15), UPRR shall retain a qualified biologist to conduct preconstruction surveys to identify active nests in accessible areas within 0.5 mile of the PIA according to the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley established by the Swainson's Hawk Technical Advisory Committee (2000). The surveys shall be conducted before the approval of grading and/or improvement plans (as applicable) and no more than 14 days before the beginning of construction for all Project phases. If no nests are found, no further measures are required. • If active nests are found, impacts on nesting Swainson's hawk shall be avoided by establishment of a 1,000-foot no-disturbance buffer between the nest and Project activities. No Project activity shall commence within the buffer area until a qualified biologist confirms that any young have fledged and the nest is no longer active. The size of the buffer may be adjusted if a qualified biologist and the City of Sacramento, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nesting hawks. If the buffer distance is reduced, nest	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		monitoring may be required by CDFW to ensure that the Project does not result in adverse effects (nest failure). • If construction begins during the typical breeding season for other raptors (February 15– September 15), preconstruction surveys shall be conducted by a qualified biologist within 72 hours prior to commencement of construction to determine presence/absence of nests in and directly adjacent to the BSA. If no nests are found during the survey, no further actions are necessary. If construction begins outside the breeding season, no preconstruction surveys are necessary. • If active nests for other raptors are identified during the preconstruction surveys, they shall be protected during the breeding season while the nest is occupied by adults or young. The occupied nest shall be monitored by a qualified biologist to determine when the nest is no longer in use. Protection will include the establishment of a 500-foot no-disturbance buffer around the nest, and highly visible temporary construction fencing will delineate the identified buffer zone. This buffer may be reduced in areas with dense vegetation, buildings, or other habitat features between Project activities and the active nest, or as determined by a qualified biologist coordinating with CDFW. No construction shall take place within this buffer zone unless approved by CDFW. **Mitigation Measure BIO-10b: Implement measures to avoid and minimize impacts on burrowing owls.** The following avoidance and minimization measures for western burrowing owl shall be implemented to reduce potential impacts on the species. • A qualified biologist shall conduct western burrowing owl surveys inside and adjacent to the PIA to identify burrow	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		locations within 14 days prior to site mobilization in accordance with the 2012 Staff Report on Burrowing Owl Mitigation (California Department of Fish and Wildlife 2012). If construction is delayed or suspended for more than 30 days after the survey, the area shall be resurveyed. • Surveys for occupied burrows shall be completed within all construction areas and within 250 feet from the proposed Project work areas (where possible and appropriate based on habitat). All occupied burrows will be mapped on an aerial photo. At least 15 days prior to the expected start of any Project-related ground-disturbing activities or the restart of activities, UPRR shall report any western burrowing owl observations to the CNDDB. • If no burrowing owls are detected during the preconstruction survey, no further action is necessary. • Based on the burrowing owl survey results, the following actions shall be taken by UPRR to offset impacts on occupied burrows during construction (as outlined in the 2012 Staff Report on Burrowing Owl Mitigation). ○ During the nonbreeding season (September 1–January 31), no disturbance shall occur within an approximately 160-foot radius of an occupied burrow. During the nesting season (February 1–August 31), occupied burrows shall not be disturbed within an 820- foot radius unless a CDFW-approved biologist verifies through noninvasive methods that either (1) the birds have not begun egg-laying and incubation, or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. ○ If owls must be moved away from the disturbance area, passive relocation techniques (as outlined by	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		CDFW [i.e., use of one-way doors]) rather than trapping should be used. At least 1 or more weeks will be necessary to accomplish this and allow the owls to acclimate to alternate burrows. ○ If unpaired or paired owls are present in or adjacent to areas scheduled for disturbance or degradation (e.g., grading) and nesting is not occurring, owls are to be removed per CDFW-approved passive relocation protocols. Passive relocation requires the use of one-way exclusion doors, which must remain in place at least 48 hours prior to site disturbance to ensure that owls have left the burrow prior to construction. For active burrows with nonbreeding owls that are outside the PIA but within 150 of Project activities, CDFW shall be consulted to determine if relocation is necessary. An exclusion plan shall be required subject to CDFW approval. ○ If paired owls are nesting in areas scheduled for disturbance or degradation, nest(s) shall be avoided from February 1 through August 31 by establishing a minimum 500- foot no-disturbance buffer or until fledging has occurred. Following fledging, owls may be passively relocated. This buffer may be reduced in areas with dense vegetation, buildings, or other habitat features between Project activities and the active nest, or as determined by a qualified biologist coordinating with CDFW. **Mitigation Measure BIO-11: Implement measures to avoid and minimize impacts on other migratory birds.** UPRR shall implement the following measures to avoid and minimize impacts to other migratory birds.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• If construction begins during the typical breeding season for migratory birds (February 15– September 15), preconstruction surveys shall be conducted by a qualified biologist within 72 hours prior to commencement of construction to determine presence/absence of nests in and directly adjacent to the BSA. If no nests are found during the survey, no further actions are necessary. If construction begins outside the breeding season, no preconstruction surveys are necessary. • If active bird nests are identified during the preconstruction surveys, they shall be protected during the breeding season while the nest is occupied by adults or young. The occupied nest shall be monitored by a qualified biologist to determine when the nest is no longer in use. Protection shall include the establishment of a minimum 50- foot no-disturbance buffer around the nest and highly visible temporary construction fencing will delineate the identified buffer zone. The extent of the buffer shall be determined by a qualified biologist, coordinating with USFWS as necessary, and shall be based on the species, type of construction activity, presence of barriers between the nest and Project activities, and ambient noise levels. The following additional avoidance and minimization measures shall be incorporated if nesting barn or cliff swallows, black phoebes, purple martins, or song sparrows are identified in the BSA. Swallows, black phoebes, and purple martins could attempt to establish nests and/or occupy existing nests under bridges in the BSA prior to construction. The following measures shall be followed to prevent impacts on bridge-nesting swallows, black phoebes, or other migratory birds. • All existing unoccupied swallow and black phoebe nests found on the undersides of the bridges shall be removed	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		between September 16 and February 14 prior to the year of construction. • Exclusionary netting shall be installed around the undersides of the bridges before February 15 of the construction year to prevent new nests from being constructed and to prevent the reoccupation of existing nests that were not removed. Netting will remain in place until the end of the typical nesting season (September 15) or the completion of construction activities, whichever is first. During the nesting season, the netting shall be monitored weekly to ensure that it remains intact and does not entrap birds. More frequent monitoring visits shall be made as necessary, especially in areas with high foot-traffic. **Mitigation Measure BIO-12: Implement measures to avoid and minimize impacts on pallid bats.** UPRR shall implement the following measures to avoid and minimize impacts on bats. • Preconstruction visual bat surveys shall be conducted by a bat specialist to inspect the undersides of bridges and potential roost trees in the BSA for roosting bats within 72 hours prior to commencement of construction. If no potential bat roosts are found, no further actions are necessary. • If construction activities in the vicinity of potential roosting sites stop for a period of 2 weeks or longer, surveys shall be repeated prior to reinitiating construction activities. • If an active bat roost is identified during the preconstruction survey but the structure or tree will not be disturbed, then the roost shall be identified as a sensitive resource and will be avoided; no additional measures are necessary.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• If it is determined that bats are using bridges/structures or trees that will be removed or disturbed, the bat specialist shall consult with CDFW to identify protective measures to avoid and minimize impacts on roosting bats based on the type of roost and timing of activities. These measures could include but are not limited to the following. ○ If feasible, tree removal/trimming and removal or modification of structures containing an active roost shall be avoided between April 15 and September 15 (the maternity period) to avoid impacts on reproductively active females and dependent young. ○ If a nonmaternity roost is located within a structure that would be removed or modified in a manner that would expose the roost, bats shall be excluded from the structure by a qualified wildlife management specialist working with a bat biologist. An exclusion plan shall be developed in coordination with CDFW that identifies the type of exclusion material/devices to be used, the location and method for installing the devices, and a monitoring schedule for checking the effectiveness of the devices. Because bats are expected to tolerate temporary construction noise and vibrations, bats will not be excluded from structures if no direct impacts on the roost are anticipated. ○ If a maternity roost is located, whether solitary or colonial, that roost shall remain undisturbed until September 15 or until a qualified biologist has determined that the roost is no longer active. ○ If avoidance of nonmaternity roost trees is not possible, tree removal or trimming shall be monitored by a qualified biologist. Prior to removal/trimming, the tree will be gently shaken, and several minutes should	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		pass before felling trees or trimming limbs to allow bats time to arouse and leave the tree. The tree then will be removed in pieces, rather than felling the entire tree. • At the discretion of UPRR, additional bat boxes could be installed along Dry and Magpie Creeks and the American River to provide alternate roost sites for any bats displaced by construction activities. *Operation* Not Applicable	
Threshold BIO-2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service. *Construction* Construction of the proposed Project has the potential to result in the loss or disturbance of 2.1 acres of riparian communities within the Project corridor. *Operation* Operation and maintenance activities are unlikely to have impacts on sensitive natural communities because these activities would occur where the vegetation communities has already been removed or disturbed during construction activities.	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure BIO-1a: Install fencing and/or flagging to protect sensitive biological resources.** **Mitigation Measure BIO-1b: Implement a worker environmental awareness training program for construction personnel.** **Mitigation Measure BIO-1c: Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats.** **Mitigation Measure BIO-2a: Minimize potential for the long-term loss of riparian communities.** To the extent possible, UPRR shall ensure that the contractor minimizes the potential for the long-term loss of riparian vegetation by trimming vegetation rather than removing entire shrubs. Shrubs that need to be trimmed shall be cut at least 1 foot above ground level to leave the root systems intact and allow for more rapid regeneration. Cutting shall be limited to the minimum area necessary within the construction zone. Cutting shall be allowed only for shrubs (all trees shall be avoided) in areas that do not provide habitat for special-status species.	*Construction* Less than Significant *Operation* Not Applicable

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Disturbance or removal of vegetation shall not exceed the minimum necessary to complete construction and future operations. Except for the vegetation specifically identified for trimming and/or removal in the notification, no native oak trees with a trunk diameter at breast height (dbh) greater than 6 inches will be removed or damaged without prior consultation and approval. Using hand tools (e.g., clippers, chainsaw), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation shall be removed out of the riparian/stream zone. SRA habitat or natural woody riparian habitat shall be avoided or preserved to the maximum extent practicable. Emergent and submergent vegetation shall be retained where feasible. **Mitigation Measure BIO-2b: Compensate for the loss of riparian communities (including SRA cover)**. UPRR shall compensate for temporary and permanent impacts on riparian communities and the associated SRA cover by preparing and implementing a riparian mitigation plan. The primary goals of the plan will be to compensate for Project-related loss or degradation of riparian habitats toward achieving no net loss of habitat acreage and functions over the long term through vegetation planting, habitat enhancement, and/or offsite compensation (mitigation bank credit purchase). The plan shall consider and incorporate the applicable policies (CO- 58, CO-59, CO-60, CO-61, CO-62, CO-138, CO-139, CO-140, and CO-141) in the Sacramento County 2030 General Plan (Sacramento County 2011) and their associated implementation measures. The following compensatory mitigation options shall be described in detail in the plan. • Mitigation bank credit purchase. UPRR may choose to purchase mitigation bank credits for non-SRA riparian	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		communities if this approach is determined to be appropriate and is acceptable to the resource agencies. UPRR shall provide written evidence to the resource agencies that compensation has been established through the purchase of mitigation credits. The amount to be paid will be the fee that is in effect at the time the fee is paid. The mitigation will be approved by CDFW and may be modified during the permitting process. • Onsite and/or offsite restoration in the local watersheds. Restoration activities shall be undertaken for both SRA communities and non-SRA communities as specified below. Onsite restoration shall be required for all areas temporarily disturbed by construction. For onsite or offsite replacement plantings, UPRR shall prepare a mitigation planting plan that specifies the species list, number of each species, planting locations, and maintenance requirements. Plantings shall consist of cuttings taken from local plants or plants grown from local material. Planted species for mitigation plantings shall be similar to those removed from the PIA and shall include native species such as valley oak, Fremont cottonwood, Oregon ash, black willow, red willow, and arroyo willow. All plantings shall be fitted with exclusion cages or other suitable protection from herbivory. Plantings shall be irrigated for up to 3 years or until established. Onsite restoration efforts should occur in the same year as construction impacts. Plantings shall be monitored annually for 3 years or as required in the Project permits. If 75 percent of the plants survive at the end of the monitoring period, the revegetation shall be considered successful. If the survival criterion is not met at the end of the monitoring period, planting and monitoring shall be repeated after mortality causes have been identified and corrected.	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Riparian forest compensation shall be consistent with the requirements of the local tree ordinances to ensure compensation for losses of individual protected trees. To provide a more accurate estimate of tree loss, an arborist survey shall be conducted upon completion of 90 percent design plans for the Project. In addition to a description of the potentially affected trees, the arborist survey report shall include the precise location of the trunk and the size of the dripline for all trees whose trunk or canopy overlap with the PIA. To satisfy NMFS and compensate for the loss of SRA cover, this measure includes the following provisions. ○ Replace affected SRA cover vegetation at a 2:1 linear replacement ratio by planting native riparian trees in temporary impact areas and along existing unshaded banks (i.e., 2 linear feet replaced for every 1 foot affected). This ratio will be confirmed with NMFS and should be consistent with the BO issued for the Project. ○ Plant native riparian trees onsite to the maximum extent practicable, followed by planting on adjacent reaches of affected streams to minimize the need for offsite mitigation. ○ Plant riparian trees that are intended to provide SRA cover along the water's edge at summer low flows and at levels sufficiently dense to provide shade along at least 85 percent of the bank's length when the plant reaches maturity. ○ Ensure that riparian plantings intended for SRA cover mitigation are planted within 10 feet (horizontal distance) of the summer wetted channel. This	

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		maximum planting distance will ensure that riparian plantings will contribute to SRA cover once they approach maturity. ○ Monitor and evaluate the revegetation success of riparian plantings intended for SRA cover mitigation as described above. *Operation* Not Applicable	
Threshold BIO-3: 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 wetlands, etc.) through direct removal, filling, hydrological interruption, or other means *Construction* Construction of the proposed Project would involve the placement of permanent fill into a portion of the 9.4 acres of waters of the United States, including wetlands. *Operation* Operation and maintenance activities are unlikely to have impacts because these activities would occur where the wetland areas has already been disturbed during construction activities.	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure BIO-1a: Install fencing and/or flagging to protect sensitive biological resources.** **Mitigation Measure BIO-1b: Implement a worker environmental awareness training program for construction personnel.** **Mitigation Measure BIO-1c: Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats.** **Mitigation Measure BIO-1d: Compensate for temporary and permanent impacts on waters of the United States, including wetlands.** To compensate for temporary and permanent Project impacts on waters of the United States, UPRR shall purchase credits at an approved mitigation bank to ensure no net loss of wetland functions and values. The acreage or value of compensatory mitigation for the loss of aquatic habitat for vernal pool crustaceans and giant gartersnake (discussed in Impacts BIO-5 and BIO-7) may be counted toward compensatory mitigation for waters of the United States. The minimum compensation ratio for wetlands and other waters shall be 1:1 (1 acre of wetland or other waters	*Construction* Less than Significant *Operation* Not Applicable

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		habitat credit for every 1 acre of impact) to ensure no net loss of habitat functions and values. *Operation* Not Applicable	
Threshold BIO-4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites *Construction* The proposed Project has the potential to interfere with the movement of migratory fish in areas where in-water work would occur. *Operation* Operation and maintenance activities are unlikely to have impacts because these type of resources would have already been disturbed during construction activities.	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure BIO-6: Implement avoidance and minimization measures to reduce potential impacts on special-status fish.** *Operation* Not Applicable	*Construction* Less than Significant *Operation* Not Applicable
Threshold BIO-5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance *Construction* Construction of the proposed Project would require the removal or disturbance (e.g., work within the trees' driplines) of native trees that	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure BIO-1a: Install fencing and/or flagging to protect sensitive biological resources.** **Mitigation Measure BIO-1b: Implement a worker environmental awareness training program for construction personnel.**	*Construction* Less than Significant *Operation* Not Applicable

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
are protected by Sacramento County, the City of Sacramento, and the City of Roseville. *Operation* Operation and maintenance activities are unlikely to have impacts because these types of resources would have already been disturbed during construction activities.		**Mitigation Measure BIO-1c: Retain a qualified biologist to conduct periodic monitoring during construction in sensitive habitats.** *Operation* Not Applicable	
Threshold BIO-6: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. *Construction and Operation* No HCP, NCCP, or other local, regional, or state HCP is in effect in the Project vicinity.	*Construction* No Impact *Operation* No Impact	Not Applicable.	Not Applicable.
Threshold BIO-8: Result in the introduction or spread of an invasive species. *Construction* The proposed Project has the potential to spread invasive species during construction activities. *Operation* It is unlikely that the proposed Project during operational activities would result in the introduction or spread of invasive species.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure BIO-14: Avoid and minimize the spread of invasive plant species during Project construction.** UPRR or its contractor shall be responsible for avoiding and minimizing the introduction of new invasive plants and the spread of invasive plants previously documented in the BSA. Two or more of the BMPs listed below shall be written into the construction specifications and implemented during Project construction. • Retain all fill material onsite to prevent the spread of invasive plants to uninfested areas.	*Construction* Less than Significant *Operation* Not Applicable

Table 3.3-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Biological Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Use a weed-free source for erosion control materials (e.g., straw wattles for erosion control that are weed-free or contain less than 1 percent weed seed). • Prevent invasive plant contamination of Project materials during transport and when stockpiling (e.g., by covering soil stockpiles with a heavy-duty, contractor-grade tarpaulin). • Use sterile wheatgrass seed and native plant stock during revegetation. • Revegetate and/or mulch disturbed soils within 30 days of completion of ground-disturbing activities to reduce the likelihood of invasive plant establishment. *Operation* Not Applicable	

THIS PAGE IS INTENTIONALLY BLANK.

3.3.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to biological resources if it were to:

a) 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 Wildlife or U.S. Fish and Wildlife Service.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

c) Have a substantial adverse effect on state or federal federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruptions, or other means.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or within established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local regional or state habitat conservation plan.

3.3.5 Environmental Analysis

Most effects related to biological resources would occur during construction when sensitive plant communities or habitat is disturbed from clearing for construction; placement of permanent structures (e.g., track, stations); staging of equipment; and stockpiling of soil, ballast, or other construction materials. Other short-term construction-related effects on adjacent habitats and corresponding wildlife could be caused by noise, vibration, and air pollution from construction equipment and activities. Operational effects on biological resources could result in an increased strike risk to wildlife from the additional rail traffic along the rail line. Additionally, construction of new tracks on railbeds elevated above areas crossing floodplains could create barriers to wildlife movement.

THRESHOLD 3.3-A	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 Wildlife or U.S. Fish and Wildlife Service

The 2015 Draft EIR identified that impacts on special-status plant species may result from the removal of vegetation for the placement of new permanent rail infrastructure or facilities within the Project corridor. Additional construction impacts may result from construction vehicles and personnel disturbing vegetation (e.g., trampling, covering, and crushing individual plants, populations, or suitable potential habitat for special-status plant species). Other construction impacts identified included the clearing, grubbing, covering, undercutting and damaging roots, or unearthing of individual plants. Dust and airborne soil, which may settle on plants, particularly herbs, may inhibit their ability to photosynthesize or reproduce through pollination. Soil compaction and the placement of fill may directly affect special-status plant species by causing decreased fitness or death by root compaction, decreased germination from the seed bank, and/or the plants being covered with soil. In addition, chemical spills have the potential to contaminate the soil and groundwater, resulting in mortality, habitat degradation, or reduced reproductive success of special-status plant species.

To address potential construction impacts to special-status plant species, the 2015 Draft EIR identified Mitigation Measure BIO-1a (which requires the installation of fencing and/or flagging to protect sensitive biological resources), Mitigation Measure BIO-1b (which requires the implementation of a worker environmental awareness training program for construction personnel), Mitigation Measure BIO-1c (which requires the retention of a qualified biologist to conduct monitoring during construction in sensitive habitats), and Mitigation Measure BIO-3 (which requires development of design requirements and constraints to avoid or minimize impacts on special-status plants). The 2015 Draft EIR concluded that with implementation of Mitigation Measures BIO-1a through BIO-1C and Mitigation Measure BIO-3, impacts to special-status plant species would be reduced to a less than significant level.

Operation and maintenance activities are unlikely to have impacts on special-status plant species because these activities would occur where the vegetation communities (e.g., areas with potential habitat for special-status plant species) has already been removed or disturbed during construction activities. Maintenance of rail infrastructure provides additional opportunities for establishment and/or spread of invasive species. Soil erosion, sedimentation, oil and lubricant runoff from rail infrastructure and station facilities could result in these substances entering adjacent drainage channels and exposing special-status plant species to chemicals. However, operational maintenance requires vegetation and pest control through a variety of methods, including the application of herbicides and pesticides. Pesticides and herbicides would be applied by certified pesticide applicators in accordance with all requirements of the California Department of Pesticide Regulation and County Agricultural Commissioners. The 2015 Draft EIR did not

identify significant impacts resulting from operational and maintenance activities on special-status plant species.

The 2015 Draft EIR identified that construction activities associated with the proposed Project could potentially result in disturbance to, and mortality of, special-status wildlife species. Staging areas, access roads, vegetation removal, ground clearing, placement of fill material, new, replaced, or extended culverts and bridges could result in permanent loss of habitat or reduction of habitat values. Disturbance during construction, and later reclamation of such areas, would result in a temporary loss of habitat.

As identified in the 2015 Draft EIR, there are multiple special-status wildlife species with the potential to occur within the Project corridor. These special-status wildlife species include invertebrates, fish, amphibians, reptiles, birds, and mammals, each with a specific set of habitat requirements. Depending on the location of the rail infrastructure improvements and facilities, there is the potential for construction activities to affect these special-status wildlife species.

For special-status aquatic species (invertebrates, fish, amphibians), construction activities may result in aquatic habitats being disturbed, penetrated, filled, polluted, or otherwise destroyed or degraded by construction equipment, siltation, and sedimentation. Construction equipment traveling off road in suitable aquatic habitats could cause erosion, soil compaction, increased siltation, destruction of native vegetation, and alteration of hydrology, which could negatively affect special-status aquatic species through loss of the acreage and quality of suitable habitat. Construction impacts on special-status aquatic species may also consist of physical disturbance, temporary interruptions to fish passage, sedimentation, turbidity, altered water temperatures, oxygen depletion, and contaminants.

Construction of bridges would likely require work below the ordinary high-water mark of water bodies that support, or have the potential to support, special-status aquatic species. Dewatering during construction, if needed, may result in the stranding and mortality of special-status aquatic species. Pile driving in areas when surface water is present could lead to behavioral changes, injury, and possible mortality as a result of vibrations. Changes in sedimentation and nutrient loading caused by soil eroding into occupied habitat related to construction disturbance of channel sediments and adjacent soils may result in habitat degradation or reduced reproductive success. Chemical spills from construction equipment (e.g., fuel, transmission fluid, lubricating oil, and motor oil) could contaminate the water column, resulting in habitat degradation or reduced reproductive success of special-status aquatic species in downstream habitats.

For special-status terrestrial species (invertebrates, reptiles, birds, mammals), the 2015 Draft EIR identified that construction activities may result in effects on suitable habitat that could cause mortality, injury, or harassment of adults or juveniles. Construction activities may also result in the temporary destruction, degradation, or pollution of habitat and the temporary loss of nesting areas, burrows, or other refugia. Construction impact also include the permanent conversion of occupied habitat to rail infrastructure improvement or station facility use and fragmentation of habitats and landscapes resulting from construction of the Project. Mortality, injury, or harassment

may also occur if these special-status terrestrial species become trapped in open, excavated areas or are stuck by construction vehicles driving on and off roads.

Vibration from construction equipment could collapse inhabited burrows located within or in the vicinity of the construction site. Construction activities requiring soil compaction and the placement of fill in suitable habitat may also affect special-status terrestrial species by prohibiting burrowing or changing the frequency of vegetative cover. Construction activities could result in temporary shifts in foraging patterns or territories and the use of daily or seasonal refugia. Impacts during the construction period may include the permanent or temporary displacement of special-status terrestrial species to avoid disturbance (e.g., noise, vibration, visual stimuli); such displacement could also result from fragmentation of the landscape caused by the construction of Project features (e.g., security fences, elevated structures, railbeds, and associated facilities).

Construction impacts on special-status terrestrial species may occur either through direct mortality or habitat modifications if there would be a permanent reduction in the acreage and quality of suitable habitat for these species. For special-status avian and bat species, construction activities could result in the removal or disturbance of potential nesting habitat, mortality or injury; the permanent conversion of occupied nesting and foraging habitat to rail or station infrastructure; and fragmentation of habitats resulting from construction of the Project.

To address potential construction impacts to special-status animal species, the 2015 Draft EIR identified Mitigation Measure BIO-1a through BIO-1c as well as Mitigation Measures BIO-4 through BIO-12 (which outlines specific mitigation requirements for each special-status animal species that could be impacted by the Project). The 2015 Draft EIR concluded that with implementation of Mitigation Measures BIO-1a through BIO-1C and Mitigation Measures BIO-4, through BIO-12, impacts to special-status animal species would be reduced to a less than significant level.

Operational impacts are anticipated to be limited to maintenance of culverts, bridges, and embankments. The number of structural features, such as culverts and bridges may influence the frequency and nature of maintenance activities, the removal of vegetation from the ROW, and disturbances due to the presence of maintenance crews and equipment. Soil erosion, sedimentation, oil and lubricant runoff from rail infrastructure and facilities, and the potential for spills during maintenance activities, could result in these substances entering adjacent drainage channels and exposing wildlife to toxic chemicals. Efforts during the design phase to avoid sensitive vegetation communities or critical habitat would help to minimize potential operational impacts on special-status wildlife species. The 2015 Draft EIR did not identify significant impacts resulting from operational and maintenance activities on special-status animal species.

Railroad Bridge Crossings

The railroad bridge crossings are located within the 2015 Draft EIR BSA and would be situated near where special-status plant species and sensitive habitats could occur. These include potential California Natural Diversity Database (CNDDB) sightings of Sanford’s arrowhead, and Elderberry Savanna.

Mitigation Measures BIO-1a through BIO-1c and Mitigation Measure BIO-3, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would also be implemented to address the potential for construction activities to impact special-status plant species and sensitive habitats. Similar to what was originally identified in the 2015 Draft EIR, implementation of the identified mitigation measures would minimize impacts to a less than significant level.

The railroad bridge crossings are located within the 2015 Draft EIR BSA and would be situated near where special-status animal species could occur. These include potential CNDDB sightings of valley elderberry longhorn beetle, Cooper's hawk, Swainson's hawk, and the purple martin. Mitigation Measures BIO-1a through BIO-1c and Mitigation Measures BIO-4, BIO-10a, and BIO-11, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would also be implemented to address the potential for construction activities to impact special-status animal species. Similar to what was originally identified in the 2015 Draft EIR, implementation of the identified mitigation measures would minimize impacts to a less than significant level.

Once constructed, the revised Project would result in the operation of multiple rail bridges with operations conducted in accordance with current UPRR management practices similar to what was identified in the 2015 Final EIR. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site would be located within an urbanized part of the City of Roseville. The site would be located within the existing rail ROW, which is developed with paved surfaces and railroad tracks. However, there are portions of the site that contain vegetated areas. Although the location of the passenger train layover facility has changed, it is anticipated that construction of the facility would require the same construction activities as those identified for the original passenger train layover facility. The revised passenger train layover facility site is located within the 2015 Draft EIR BSA and is situated near where special-status plant species and sensitive habitats could occur. These include potential CNDDB sightings of dwarf downingia, Boggs Lake hedge-hyssop, Northern Hardpan vernal pool, and Northern Volcanic Mud Flow vernal pool.

Mitigation Measures BIO-1a through BIO-1c and Mitigation Measure BIO-3, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would also be implemented to address the potential for construction activities to impact special-status plant species and sensitive habitats. Similar to what was originally identified in the 2015 Draft EIR, implementation of the identified mitigation measures would minimize impacts to a less than significant level.

The revised passenger train layover facility site is located within the 2015 Draft EIR BSA and is situated near where special-status animal species could occur. These include potential CNDDB

sightings of vernal pool fairy shrimp and the purple martin. Mitigation Measures BIO-1a through BIO-1c and Mitigation Measures BIO-5, BIO-10a, and BIO-11, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would also be implemented to address the potential for construction activities to impact special-status plant species and sensitive habitats. Similar to what was originally identified in the 2015 Draft EIR, implementation of the identified mitigation measures would minimize impacts to a less than significant level.

Once constructed, the revised Project would result in the operation of a passenger train layover facility with operations conducted in accordance with current UPRR management practices similar to what was identified in the 2015 Final EIR. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.3-B	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service
THRESHOLD 3.3-C	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruptions, or other means

The 2015 Draft EIR addressed the potential for impacts associated with the construction and operation of new railroad infrastructure on state or federal protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.). The 2015 Draft EIR identified that construction activities would result in the placement of permanent fill in 9.4 acres of waters of the United States, including wetlands, that occur within the Project corridor.

All wetland and water features identified within the Project site may be regulated by the United States Army Corps of Engineers (USACE) as waters of the U.S. through Section 404 of the Federal Clean Water Act (CWA) and by the Regional Water Quality Control Board (RWQCB) as waters of the State through Section 401 of the CWA and/or the State Porter-Cologne Act. All ecological systems associated with drainages (e.g., riparian wetlands), and drainage features with bed and bank topography may be regulated by Sections 1600–1616 of the California Fish and Game Code. In conjunction with the Section 404 permit, impacts to wetlands and waters will likely require a Section 401 Water Quality Certification or Waste Discharge Requirement from RWQCB and CDFW Section 1602 Streambed Alteration Agreement. Effects on wetlands and other waters would be considered permanent if construction activities would result in placement of permanent fill into these features. Temporary impacts on wetlands and other waters, including placement of temporary fill, could occur during access for construction activities. Indirect impacts caused by sedimentation or modification of hydrology could occur in portions of wetlands or other waters that lie outside the PIA.

To address impacts, the 2015 Draft EIR included Mitigation Measures BIO-1a through BIO-1d, which requires special construction considerations, such as training for construction personnel, the retention of a qualified biologist to monitor construction activities, and installation of protective fencing, as well as compensation for any temporary or permanent impacts to waters of the United States (including wetlands). The 2015 Draft EIR concluded that with implementation of the identified mitigation measures impacts were reduced to a less than significant level.

Railroad Bridge Crossings

While it is anticipated that the replacement or realignment of the existing railroad bridge crossings would not result in the temporary or permanent fill of wetlands, in the event that jurisdictional waters are impacted by construction activities, Mitigation Measures BIO-1a through BIO-1d would be implemented.

Mitigation Measures BIO-1a through BIO-1d, which was previously identified in the 2015 Draft EIR for the overall Project and adopted and incorporated into the 2015 Final EIR MMRP, would be implemented to address impacts to jurisdictional waters that could be located within the vicinity of the railroad bridge crossings. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures BIO-1a through BIO-1d would minimize potential impacts to jurisdictional resources to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant with mitigation incorporated.

Passenger Train Layover Facility. The revised passenger train layover facility site is located near the existing Roseville Station, which contains identified isolated seasonal wetlands, seasonal wetlands, and other waters. It is anticipated that the passenger train layover facility would have similar construction activities that could result in a temporary or permanent loss of state or federally protected wetlands.

Mitigation Measures BIO-1a through BIO-1d, which was previously identified in the 2015 Draft EIR for the overall Project and adopted and incorporated into the 2015 Final EIR MMRP, would be implemented to address impacts to jurisdictional waters that could be located within the vicinity of the passenger train layover facility component. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures BIO-1a through BIO-1d would minimize potential impacts to jurisdictional resources to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant with mitigation incorporated.

THRESHOLD 3.3-D	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or within established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites

Construction of rail infrastructure improvements within the Project corridor has the potential to result in impediments to the movement of wildlife across the landscape. The existing rail alignment crosses drainages, roadways, and culverts that could serve as crossing structures for wildlife movement corridors. Construction activities often deter wildlife from entering construction work areas, and work occurring near existing crossing structures—such as underpasses, overpasses, or culverts—could deter use of those structures by wildlife.

The presence of construction personnel and the operation of construction equipment would result in increased noise, dust, vehicle traffic, and human activity, which could temporarily deter wildlife from using movement corridors that may be located within a specific site. Additionally, the removal of vegetation in temporary work areas near existing and proposed undercrossings would have temporary effects on wildlife movement for some species by leaving them exposed as they approach the underpasses and potentially deterring them from using the crossings until the vegetation has regenerated. However, impacts on wildlife movement corridors would be dependent on the placement of new rail infrastructure (tracks, ballast, embankments, stations, etc.) in relation to existing wildlife movement corridors.

During operation, existing maintenance activities that would occur within the ROW along the Project corridor would be in areas where the natural ecosystem has already been disturbed. Wildlife present in the vicinity of these existing railroad lines within the Project corridor have been exposed, to some degree, to disturbances associated with railroad operations and vehicular traffic on the interstates and highways. The 2015 Draft EIR did not identify significant impacts on wildlife movement corridors resulting from construction, operational and maintenance activities with the Project corridor.

Railroad Bridge Crossings

It is anticipated that the replacement or realignment of the existing railroad bridge crossings would require the same construction activities as those identified for the original bridge overcrossing. The existing railroad bridge crossings are not identified as a native resident or migratory wildlife corridors or a wildlife nursery sites. However, there is the potential for the existing railroad bridge crossings to provide roosting for sensitive bat species. The 2015 Draft EIR identified mitigation measures that would be applied in the event that a bat roost is discovered during Project construction and operation. Once constructed, the revised Project would result in the operation of a passenger train layover facility with operations conducted in accordance with current UPRR management practices similar to what was identified in the 2015 Final EIR. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site would be located within an urbanized part of the City of Roseville. The site would be located within the existing rail ROW, which is developed with paved surfaces and railroad tracks. However, there are portions of the site that contain vegetated areas. Although the location of the passenger train layover facility has changed, it is anticipated

that construction of the facility would require the same construction activities as those identified for the original passenger train layover facility. While the revised passenger train layover facility site is located within the 2015 Draft EIR BSA, the site is not identified as a native resident or migratory wildlife corridors or a wildlife nursery sites.

Once constructed, the revised Project would result in the operation of a passenger train layover facility with operations conducted in accordance with current UPRR management practices similar to what was identified in the 2015 Final EIR. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.3-E	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance

The 2015 Draft EIR identified that implementation of the proposed Project would require the removal or disturbance (e.g., work within the trees' driplines) of native trees that are protected by Sacramento County, the City of Sacramento, and the City of Roseville. To address potential impacts associated with applicable tree preservation policies and ordinances, the 2015 Draft EIR identified that prior to construction, a certified arborist shall assess any trees with the potential to be affected by the proposed Project and a report prepared that would provide information on location, size, and health of each tree. If it is determined that a protected tree cannot be avoided, a tree permit shall be obtained from the appropriate jurisdiction. The 2015 Draft EIR concluded that because UPRR will comply with the local ordinances and implement the compensation required by the Cities and the County, this impact is less than significant. However, the 2015 Draft also identified that implementation of Mitigation Measures BIO-1a through BIO-1c would provide for further protection of native tress.

Railroad Bridge Crossings

The railroad bridge crossing sites contain trees that would be removed to accommodate the replacement or realignment of the existing railroad bridge structures. Similar to what was identified in the 2015 Draft EIR, the revised Project would require that a certified arborist assess any trees with the potential to be affected by the revised Project and a report prepared that would provide information on location, size, and health of each tree. If it is determined that a protected tree cannot be avoided, a tree permit shall be obtained from the City of Sacramento. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site contains trees that would be removed to accommodate the proposed uses on the site. Similar to what was identified in the 2015 Draft EIR, the revised Project would require that a certified arborist assess any trees with the potential to be affected by the revised Project and a report prepared that would provide information on location,

size, and health of each tree. If it is determined that a protected tree cannot be avoided, a tree permit shall be obtained from the City of Roseville. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.3-F	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan

The 2015 Draft EIR identified that there are no habitat conservation plans (HCPs), natural community conservation plans (NCCPs), or other approved local, regional, or state HCP in effect within the Project corridor. Therefore, the 2015 Draft EIR concluded that no impacts associated with this topic area would occur with implementation of the proposed Project.

Railroad Bridge Crossings

The replacement or realignment of the existing railroad bridge crossings is not located within an HCP, NCCP, or other local, regional, or state HCP. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site is not located within an HCP, NCCP, or other local, regional, or state HCP. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

3.4 Cultural Resources

This section presents an analysis of potential impacts on cultural resources and tribal cultural resources that would result from the railroad bridge crossings and the passenger train layover facility associated with the revised Project (described in Chapter 2.0, Project Description). As identified in the 2015 Draft EIR, cultural resources consist of historic-period and pre-historical period archeological resources, built environment resources, and tribal cultural resources (TCRs).

Archaeological resources are the physical remains of past human activity that have been preserved in the ground but no longer take the form of a standing structure (e.g., a house or building). Archaeological remains may occur in the same place as standing structures but are considered a distinct element (called a component) of the larger resource.

Built environment resources consist of buildings, structures, objects, sites, or districts. Typically, built environment resources must be 50 years of age or older to qualify as cultural resources. Where these resources form a landscape unified by a coherent historical or design theme, they may qualify as a rural historic landscape (National Park Service 1999:1).

TCRs are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR) or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

3.4.1 Regulatory Framework

Since the certification of the 2015 Final EIR, AB 52 was created in addition to CEQA. The purpose of the legislation was to create a new resource category, TCRs. This new category would require a lead agency to consult with interested California Native American tribes who request formal consultation regarding impacts to tribal cultural resources. As defined by AB 52 in PRC section 21074, tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included or determined to be eligible for inclusion in the CRHR, or in a local register of historical resources as defined in PRC section 5020.1.

A TCR can be determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. When applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

AB 52 creates a consultation process between lead agencies and California Native American tribes to identify and protect tribal cultural resources. In accordance with AB 52, Native American groups who wish to be consulted on projects within their traditional geographic area are required to request in writing that lead agencies notify them of upcoming projects within their geographic areas. No California Native American tribes have requested notification for environmental review projects under CEQA within CCJPA's jurisdiction. However, as part of the 2015 EIR process, coordination with Native American tribes identified by the Native American Heritage Commission (NAHC) was conducted and input on the proposed Project received.

The regulatory setting for cultural resources, which includes applicable state and local laws, regulations, and plans relative to cultural resources, are identified in the 2015 Draft EIR (Chapter 3.13, Cultural Resources), and are applicable to the revised Project.

3.4.2 Environmental Setting

The 2015 Draft EIR addressed cultural resource impacts associated with the introduction of new linear rail infrastructure elements within the Project study area. The revised Project is located within the existing railroad right of way (ROW) owned, operated, and maintained by UPRR. CCJPA's current passenger service operates on a shared track within the railroad ROW. The majority of the Area of Potential Effects (APE) consist of existing railroad tracks and ballast. However, there are portions of the APE that consist of disturbed vegetated areas within the railroad ROW. The railroad bridge crossings are adjacent to industrial, commercial, and residential uses as well as vacant land. The revised passenger train layover facility site contains similar adjacent land uses (e.g., a mix of residential, commercial, and industrial uses adjacent to the UPRR ROW) as those identified in the 2015 Draft EIR for the original passenger train layover facility site.

3.4.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.4-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Final EIR.

Table 3.4-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Cultural Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold CUL-1: Direct or indirect alteration of the characteristics of a cultural resource that qualify it for inclusion in the NRHP. *Construction* Ground-disturbing activities may cause a substantial adverse change of a previously unidentified cultural resource that qualifies for inclusion in the NRHP. *Operation* Operation of the Project does not include any characteristics that would impact a cultural resources that qualifies for inclusion in the NRHP.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure CUL-1a: Conduct archaeological presence/absence testing in areas of the APE adjacent to the American River prior to final design.** Prior to completion of final design, CCJPA shall retain a qualified archaeologist meeting the Secretary of Interior's Standards for archeological documentation, to conduct archaeological presence/absence testing in areas of the APE adjacent to the American River where bridge construction activities shall occur. The purpose of the testing will be to determine whether buried archaeological resources are present in these portions of the APE. The study shall include contacting the NAHC and interested parties, conducting presence/absence testing, and reporting. The testing shall consist of at least six mechanically excavated trenches, three on each side of the American River where the proposed bridge would be constructed. All attempts shall be made to place trenches in those locations where the proposed bridge footings would be located. Trenches shall measure at least 15 feet long and shall be excavated with a backhoe equipped with a bucket at least 3 feet wide. Trenches shall be excavated to at least 2 feet below the maximum depth of ground disturbance that would result from bridge construction, or until trenching is no longer feasible or safe. An archaeologist shall study excavated sediments placed in backfill piles on a backhoe bucket-by-bucket	*Construction* Less than Significant *Operation* Not Applicable

Table 3.4-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Cultural Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		basis and shall examine trench sidewalls for evidence of archaeological deposits. When potential archaeological material is observed in either excavated sediments or trench sidewalls, an archaeologist shall enter trenches to better view the material and determine its nature. Buried archaeological material can range from a single flake (lithic debitage) or discolored soil to an obvious buried midden component. Indicators of archaeological sensitivity or the presence of archaeological deposits may include patches of reddish oxidized soils, fire affected rock (FAR), carbon, bone, shell, or artifacts. The location and potential extent of the site shall be taken into consideration to determine appropriate next steps. For the purposes of the subsurface survey, the threshold for terminating the investigation and requiring either avoidance measures or archaeological evaluative testing shall be the identification of more than three pieces of lithic debitage per trench, any midden soil, formal tools, any culturally associated prehistoric faunal remains, any discrete prehistoric or historic-period features, or historic-period refuse with multiple artifact types. The archaeologist shall document the results of the testing in a cultural resources technical report. The report shall include: (1) a summary of relevant background information; (2) a complete discussion of methods and results; (3) recommendations of NRHP and CRHR eligibility for any identified resources; (4) assessment of Project impacts on the resources; and (5) recommended mitigation measures for any identified	

Table 3.4-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Cultural Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		resources, if applicable. If a site is determined to be eligible for listing in the NHRP, further consultation with SHPO will be necessary for treatment of this site. Examples of potential treatment measures include modifying Project design for avoidance of identified archaeological resources and additional archaeological testing of the archaeological resources to evaluate them for NRHP-eligibility, eligibility as a historical resource pursuant to CEQA Guidelines Section 15064.5, and eligibility as a unique archaeological resource pursuant to PRC Section 21083.2. **Mitigation Measure CUL-1b: Conduct archaeological construction monitoring during ground-disturbing activities in archaeologically sensitive areas and halt work if previously unrecorded cultural resources are encountered and determined to be NRHP eligible.** CCJPA shall retain an archaeologist to conduct archaeological construction monitoring during ground-disturbing construction activities in previously undisturbed soil in archaeologically sensitive areas as identified in the cultural resources inventory and evaluation report (ICF International 2014). The monitoring shall be supervised by an archaeologist that meets the Secretary of Interior's Standards for archeological documentation. The onsite archaeological monitor shall observe the ground-disturbing activities to ensure that no archaeological material is present or disturbed during those activities. CCJPA may invite, and retain if so desired, a Native American monitor to assist in the archaeological monitoring. If potential archaeological material is observed, all work within 100 feet of the find shall cease, and the archaeologist and (if appropriate) a Native American representative shall	

Table 3.4-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Cultural Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		assess the significance of the find. If the find is determined to be potentially (1) NRHP-eligible; (2) a historical resource pursuant to CEQA Guidelines Section 15064.5; or (3) a unique archaeological resource pursuant to PRC Section 21083.2, CCJPA shall consult with SHPO, appropriate Native American tribes, and other appropriate interested parties to determine treatment measures pursuant to 36 CFR 800.13. *Operation* Not Applicable	
Threshold CUL-2: Cause a substantial adverse change in the significance of a cultural resource that is a historic resource or a unique archaeological resource. *Construction* If an archaeological resource is encountered and determined to be a historical resource pursuant to CEQA Guidelines Section 15064.5 or a unique archaeological resource pursuant to PRC Section 21083.2, inadvertent damage to it could result in an adverse effect if the damage were to modify the resource to the extent that it would no longer convey the reasons for its significance and key aspects of integrity. *Operation*	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure CUL-1a: Conduct archaeological presence/absence testing in areas of the APE adjacent to the American River prior to final design.** **Mitigation Measure CUL-1b: Conduct archaeological construction monitoring during ground-disturbing activities in archaeologically sensitive areas and halt work if previously unrecorded cultural resources are encountered.** *Operation* Not Applicable	*Construction* Less than Significant *Operation* Not Applicable

Table 3.4-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Cultural Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Operation of the Project does not include any characteristics that would cause a substantial adverse change in the significance of a cultural resource that is a historic resource or a unique archaeological resource.			
Threshold CUL-3: Disturb any human remains, including those interred outside of formal cemeteries. *Construction* Ground disturbing activities associated with construction may encounter previously unidentified or unmarked burials containing human remains. *Operation* Operation of the Project does not include any characteristics that would disturb human remains.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure CUL-3: Conduct archaeological construction monitoring during ground-disturbing activities in archaeologically sensitive areas and halt work if human remains are encountered.** CCJPA shall retain an archaeologist to conduct archaeological construction monitoring during ground-disturbing construction activities in previously undisturbed soil in archaeologically sensitive areas as identified in the cultural resources inventory and evaluation report (ICF International 2014). The monitoring shall be supervised by an archaeologist that meets the Secretary of Interior's Standards for Archeology. The onsite archaeological monitor shall observe the ground-disturbing activities to ensure that no human remains are present or disturbed during those activities. CCJPA may invite, and retain if so desired, a Native American monitor to assist in the archaeological monitoring. During any Project excavation, regardless of the presence of an archaeological monitor, if human remains (or remains that are suspected to be human) are discovered, all work shall cease in the vicinity of the find (within a minimum of 100 feet) and the appropriate county coroner shall be notified immediately. If the coroner determines the remains to be Native American in origin, the coroner shall be responsible for notifying the NAHC,	*Construction* Less than Significant *Operation* Not Applicable

Table 3.4-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Cultural Resources

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		which will appoint a most-likely descendant (MLD) (PRC Section 5097.99). The archaeologist, CCJPA, lead federal agency, SHPO, and MLD shall make all reasonable efforts to develop an agreement for the dignified treatment of human remains and associated or unassociated funerary objects (CCR Title 14 Section 15064.5[d]). The agreement shall take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. The MLD shall have 24 hours after notification by the NAHC to make their recommendation (PRC Section 5097.98). If the MLD does not agree to the reburial method, the Project shall follow PRC Section 5097.98(b), which states, "the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance." *Operation* Not Applicable	

3.4.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the changed circumstances would have a significant impact related to cultural or tribal cultural resources if they were to:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5,

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5, or

c) Disturb any human remains, including those interred outside of dedicated cemeteries

d) Cause a substantial adverse change in the significance of a tribal cultural resource, as defined by PRC §21074, and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined by PRC §5024.1.

e) Cause a substantial adverse change in the significance of a tribal cultural resource, as defined by PRC §21074, and that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant to a California Native tribe pursuant to PRC §5024.1.

3.4.5 Environmental Analysis

THRESHOLD 3.4-A	Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5
THRESHOLD 3.4-B	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5

Impacts as a result of implementing the proposed Project can be broadly classified into construction and operational impacts. Most impacts related to cultural resources would occur during construction when the ground is disturbed. Operation or long-term impacts are unlikely to impact cultural resources as maintenance activities along the rail corridor do not typically involve ground disturbance activities. As summarized in Table 3.4-2, the 2015 Draft EIR identified eight cultural resources (six built environment resources and two archaeological resources) within the APE that could be impacted by the proposed Project.

Table 3.4-2. Summary of 2015 EIR Cultural Resources within the APE

Name	Previously Recorded	Previous Designation Status	2015 EIR Update to Designation
First Transcontinental Railroad Segment (CA-PLA-814H/CA-SAC-478H)	Yes	Not eligible	No change – not eligible
American River Railroad Bridge (CA-SAC-478H Feature C-Sacramento East-B-4)	Yes	NRHP-eligible (A and C)	No change – eligible
Sacramento Northern Railroad Segment (CA-SAC-571H)	Yes	Not eligible	No change – not eligible
American River Levee Segment (CA-SAC-481H/CA-SAC-482H)	Yes	Not eligible	No change – not eligible
State Route 160 Segment (P-34-001663)	Yes	Not eligible	No change – not eligible
Roseville Switching Yards (CA-PLA-1847H)	Yes	Not eligible	No change - buildings no longer exist on the site
7th Street Railroad Trestle (CA-SAC-941H)	Yes	NRHP-eligible (A and C)	No change – eligible
Refuse Deposit (CA-SAC-942H)	Yes	Not eligible	No change – not eligible

Source: Sacramento to Roseville Third Main Track 2015 Draft EIR

As summarized above, two cultural resources, the American River Railroad Bridge (CA-SAC-487H Feature C-Sacramento East-B-4) and 7th Street Railroad Trestle (CA-SAC-941H), were previously recommended eligible for listing in the National Register of Historic Places (NRHP) under Criteria A and C and would remain eligible under the 2015 EIR Project.

The 2015 Draft EIR identified that implementation of the proposed Project would not result in impacts to the American River Railroad Bridge that would change the historical significance or key aspects of historical integrity associated with the resource. The 2015 Draft EIR concluded that impacts to the American River Railroad Bridge would be less than significant. For the 7th Street Railroad Trestle, the 2015 Draft EIR identified no impacts to the resource as the proposed Project does not involve any ground disturbing activities at the resource's location. Therefore, implementation of the proposed Project would not alter any of the resource's characteristics that qualify it for inclusion in the NRHP.

Although there would be no significant impacts to identified cultural resources, the 2015 Draft EIR identified that there is a possibility that unidentified cultural resources could be encountered during ground disturbing activities. The 2015 Draft EIR indicated that the potential for discovery of cultural resources is higher in areas adjacent to rivers and streams that would be subject to deep

ground disturbance (e.g., bridge-related pilings). The 2015 Draft EIR concluded that if a potential NRHP-eligible cultural resource is encountered during ground disturbing activities, inadvertent damage to the resource could occur if the damage were to alter the characteristics of the resource that qualify it for inclusion in the NRHP.

The inclusion of Mitigation Measures CUL-1a, (which requires archaeological presence/absence testing in areas of the APE adjacent to the American River prior to final design) and CUL-2a (which requires archaeological construction monitoring during ground disturbing activities) would reduce construction related impacts to a less than significant level.

Railroad Bridge Crossings

A review of additional literature, prior studies, and maps on file at Caltrans District 3 as well as the Caltrans Cultural Resource Inventory of Caltrans District 3 Rural Conventional Highways (Leach-Palm et. al. 2008), the Native American Ethnogeography, Geography, History, Traditional Resources, Contemporary Communities, and Concerns (Blount, Davis-King, and Milliken 2008), and the Geoarchaeological Overview and Assessment of Caltrans District 3 (Meyer and Rosenthal 2008) were also consulted. In addition, the following databases were reviewed as part of the literature review: NHRP (NPS 1998a, 1998b & updates), California Points of Historical Interest (OHP 1992 & updates), California Inventory of Historic Resources (OHP 1976 & updates), California Historical Landmarks (OHP 1990 & updates), California Register of Historical Resources (OHP 1997& updates), Historic Property Data File (OHP 1998 & updates), Caltrans State and Local Bridge Survey (Caltrans 2014), and Historic Spots in California (Kyle et. al. 2002).

Based on a review of these databases, two cultural resources intersect or cross through the revised Project APE: the Central Pacific Railroad (also called The First Transcontinental Railroad and the Union Pacific Railroad, CA-SAC-478H) and the Sacramento Branch of the Southern Pacific Railroad (SPRR).

For the purposes of this analysis, the First Transcontinental Railroad (CPRR) is assumed eligible for listing in the NRHP under Criterion A as a nationally significant transportation resource. Its assumed character-defining features are the alignment, the standard gauge track, elevated berm, ballast, wooden ties, iron tie plates, and iron nails. The segment of the CPRR within the revised Project limits is part of an alignment constructed in 1863 as a result of the Pacific Railroad Act for the creation of railroad line to link the United States from east to west. The First Transcontinental Railroad was completed in 1869 when the westbound UPRR and eastbound CPRR construction crews met at Promontory Point in Utah.

Within the revised Project footprint, the CPRR tracks extend easterly, cross over Business I-80 supported by the existing B Street railroad bridge crossing (Bridge number 24-0023) and proceed along the southern edge of McKinley Village. The three-track railroad narrows to a two-track corridor just south of the American River and split-two tracks north and one south. The two tracks heading north crossover Business I-80 at the southeastern corner of Sutter's Landing Regional Park, supported by the existing Elvas railroad bridge crossing (Bridge number 24-0031).

The railroad bridge crossings consist of two steel deck plate girder structures with reinforced concrete (RC) decks on three RC column frame bents and RC closed-end backfilled cantilever abutments on concrete piles. Constructed between 1951-1954, the current railroad bridges replaced earlier structures. Overall, the alignment of the tracks is the only extant feature of the original CPRR railway infrastructure.

While the existing railroad bridge crossings are considered to be a contributing element of the larger resource for the purposes of this revised Project (for carrying the railroad line over Business I-80); the realigned railroad bridge crossings would serve the same purpose and would be designed in coordination with, and pending approval from, the UPRR. The alignment and grade modification to this segment of the CPRR would have no discernible impact on the qualities for which the resource is assumed eligible. Realigning the tracks and replacing the crossing would not significantly impact any of the qualities for which this resource is assumed eligible for listing in the NRHP/CRHR and would not diminish the ability of the resource to convey its significance. Railroad lines are continuously maintained, requiring regular replacement of tracks, rails, ballast, etc., to ensure safety and reliability. Therefore, the revised Project would not have an adverse effect on the former CPRR.

Within the revised Project limits, the former Central Pacific Railroad-Sacramento Branch of the Southern Pacific Railroad alignment intersects and is supported by the Elvas crossing. The construction of this branch began in 1906 and was completed in 1912 when it was merged and became part of the SPRR. The railroad was abandoned in 1978 when it became part of the Southern Pacific system.

The revised Project includes replacing the overhead structures associated with both the Elvas and B Steet railroad bridge crossings. The replacement of the overhead structures would increase Business I-80's overhead vertical clearance and require temporary rail tracks (shoofly) to maintain railroad operations/traffic during construction. The modification of the railroad bridge crossings involves raising the CPRR's track profile by approximately one foot for approximately 8,898 linear feet (1.68 miles) on the CPRR-Sacramento Branch of the Southern Pacific Railroad's tracks. The revised Project would only affect 8,898 linear feet (1.68 miles) of a resource originally measuring over 200 miles. The materials used to reconstruct the tracks on the new alignments would be in-kind replacements with the modified railroad bridge crossings meeting current design standards. All railroad features would be designed in coordination with and pending approval from the UPRR. Therefore, the revised Project would not have an adverse effect on this segment of the Central Pacific Railroad.

Although the railroad realignment is subject to approval by UPRR, this supplemental analysis provides a conservative assumption that acquisitions may be required adjacent to the existing railroad. The replacement and realignment of the existing railroad bridge crossings would require the construction of temporary shoofly structures in order to maintain railroad operations during construction. Based on preliminary design for the railroad bridge crossings, the replacement and realignment of the B Street railroad bridge crossing would require the demolition of buildings associated with a self-storage facility (Extra Space Storage) and existing Caltrans maintenance

yard facilities. As previously defined, built environment resources consist of buildings, structures, objects, sites, or districts and typically must be 50 years of age or older to qualify as cultural resources.

Extra Space Storage is a self-storage facility located at 3000 B Street, at the corner of Alhambra Boulevard and B Street, east of Business I-80. The reconstruction of the B Street railroad bridge crossing would require the acquisition and demolition of an existing building on the north side of the Extra Space Storage parcel adjacent to the railroad tracks. Although this existing building would be demolished, the building was constructed in 2019 and does not meet the criteria for a built environment cultural resource.

Acquisition and demolition of Caltrans maintenance yard facilities may also be required to provide adequate space for the ballast of the new permanent railroad alignment or required for the temporary railroad shoofly and retaining walls. To accommodate the proposed railroad work, two warehouse buildings (approximately 6,000 and 21,000 square feet) owned and operated Caltrans would be demolished. The 6,000 square foot warehouse building was constructed by Caltrans in 2013. Although this existing building would be demolished, the building was constructed in 2013 and does not meet the criteria as qualify for a built environment cultural resource.

The 21,000 square foot warehouse building (commonly known as the Caltrans Sunrise Region Annex) was constructed in 1962-1963 and has been evaluated in accordance with Section 15064.5(a)(2)- (3) of the CEQA Guidelines, using the criteria outlined in Section 5024.1 of the California Public Resources Code. The warehouse building does not appear to meet the criteria for listing in the NRHP or CRHR, nor is it an historical resource for the purposes of CEQA as summarized in Table 3.4-3.

Table 3.4-3. NRHP/CRHR Criteria Summary for Caltrans Sunrise Region Annex

NRHP/CRHR Criterion	Evaluation
NRHP Criterion A: Associated with events that have made a significant contribution to the broad patterns of our history **CRHR Criterion 1:** Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States	This resource does not have important associations with significant events or trends and does not appear to be eligible under NRHP Criterion A or CRHR Criterion 1. This building was constructed in the early 1960s to serve as the office and warehouse of the local contracting firm of Kaufman & Reynolds Construction Company. One of many such commercial buildings constructed as infill construction with the already developed core of Sacramento during mid twentieth, it is not significant within the context of Sacramento County's or the City of Sacramento's mid-twentieth century commercial or industrial development.
NRHP Criterion B: Associated with the lives of persons significant in our past	Under NRHP Criterion B or CRHR Criterion 2, this resource does not have any direct and important associations with the lives of persons important to history. While Paul Kaufman and Frank Reynolds Jr. operated a successful and

Table 3.4-3. NRHP/CRHR Criteria Summary for Caltrans Sunrise Region Annex

NRHP/CRHR Criterion	Evaluation
CRHR Criterion 2: Associated with the lives of persons important to local, California, or national history	prolific construction company, it does not appear that either made any significant contributions to their established industry on the local, state or national level. Therefore, this resource does not appear eligible under these criteria.
NRHP Criterion C: Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity who components may lack individual distinction **CRHR Criterion 3:** Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values	Architecturally, the original building is a typical and ubiquitous example of a mid-twentieth century industrial/commercial building designed by Butler Manufacturing Company. During and after World War II, Butler buildings were readily used throughout the nation because they were easily adaptable for various uses because they had “clear span” interior spaces that provided more vertical room, were easily and quickly constructed, and were relatively resistant to fire compared similar wood-framed buildings of the time. As such, they are ubiquitous on farms throughout California and in industrial and commercial development since the mid-twentieth century. Therefore, this building is not significant under NRHP Criterion C or CRHR 3 for embodying the distinctive characteristics of a type, period, or method of construction. While Kaufman & Reynolds Construction Company constructed hundreds of commercial, residential, and industrial buildings throughout the Sacramento region during nearly 40 years of history, the contracting firm does not appear to be a master in its field.
NRHP Criterion D: Has yielded, or maybe likely to yield, information important in history or prehistory **CRHR Criterion 4:** Has yielded, or has the potential to yield, information important to the prehistory of history of the local area, California or the nation.	The building does not appear to have any likelihood of yielding important information about historic construction materials or technologies. Under NRHP Criterion D or CRHR Criterion 4, this resource has not yielded and is not likely to yield data important to the understanding of history.

Based on the background research conducted, the entirety of the Caltrans right-of-way where the railroad bridge crossings are located have been previously surveyed for archaeological resources as part of various Caltrans projects. In addition, most of the area outside Caltrans right-of-way but within the revised Project footprint has been previously surveyed for cultural resources with no new cultural resources found.

Similar to what was identified in the 2015 Draft EIR, although there would be no significant impacts to identified cultural resources with implementation of the revised Project, there is a possibility that unidentified cultural resources could be encountered during ground disturbing activities. If a potential NRHP-eligible cultural resource is encountered during ground disturbing activities,

inadvertent damage to the resource could occur if the damage were to alter the characteristics of the resource that qualify it for inclusion in the NRHP.

Mitigation Measures CUL-1a and CUL-2a, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures CUL-1a and CUL-2a would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

A review of additional literature, prior studies, maps and databases were reviewed and include: National Register of Historic Places (NPS 1998a, 1998b & updates), California Points of Historical Interest (OHP 1992 & updates), California Inventory of Historic Resources (OHP 1976 & updates), California Historical Landmarks (OHP 1990 & updates), California Register of Historical Resources (OHP 1997& updates), Historic Property Data File (OHP 1998 & updates), Caltrans State and Local Bridge Survey (Caltrans 2014), and Historic Spots in California (Kyle et. al. 2002), City of Roseville General Plan EIR (City of Roseville 2020). Based on a review of these databases, one cultural resource intersects or crosses through the revised Project APE: First Transcontinental Railroad Segment (CA-PLA-841H/CA-SAC-478H).

As identified in the 2015 Draft EIR, most of the 18-mile Project corridor consists of double-tracked, standard gauge rails (4 feet 8.5 inches between rail heads) resting on timber ties and a raised bed of crushed stone ballast. At points, the segment includes side tracks, grade separation structures (bridges or trestles), and drainage features such as culverts and ditches. The two sets of parallel tracks remain in overall good physical condition and are still used to carry freight traffic by the current owner, UPRR. Additionally, Amtrak uses the tracks for passenger service.

The general setting of the Project corridor (i.e., the area outside the APE) consists of modern transportation infrastructure and both modern and historic-era commercial and residential buildings. The Central Pacific Transcontinental Railroad is listed in the CRHR as State Historic Landmark No. 780. It appears in the California Historical Resources Inventory Database under the resource name “First Transcontinental Railroad” and has a status code of 1CL, indicating that it was automatically listed in the CRHR, but not listed in the NRHP. A significant number of individual segments of the Transcontinental Railroad have been previously recorded and evaluated, though at the time of this update, no study evaluating the entire route and appurtenant features for NRHP eligibility exists.

The 2015 Draft EIR determined that the subject segment exists predominantly as it did when previously recorded and evaluated for the NRHP in 2013. Accordingly, the 2015 Draft EIR concluded that the subject segment still falls short of meeting the minimum criteria for listing in the NRHP, individually or as a contributing element to a historic district, due to its lack of sufficient historical integrity. Therefore, it is not considered a historic property pursuant to the NHPA.

However, as a listed CRHR resource, the subject railroad segment is considered a historical resource for the purposes of CEQA.

The revised passenger layover facility would result in the installation of additional layover facility tracks within the UPRR ROW as well as a proposed layover yard building and access roads. The layover facility tracks would tie into the existing UPRR tracks. Similar to what was identified in the 2015 Draft EIR, the passenger train layover facility would also be used for storage and light maintenance of up to four full passenger train sets at any one time. Typical activities at the passenger train layover facility would include the storage of passenger trains, cleaning the interiors of the passenger trains, emptying of sanitary retention tanks, and light maintenance. The modification to this segment of the CPRR would have no discernible impact on the qualities for which the resource is assumed eligible. The tie in of the additional layover facility tracks to the existing UPRR tracks would not significantly impact any of the qualities for which this resource is listed as a CRHR resource and would not diminish the ability of the resource to convey its significance. Therefore, the revised Project would not have an adverse effect on the former CPRR.

Similar to what was identified in the 2015 Draft EIR, although there would be no significant impacts to identified cultural resources with implementation of the revised Project, there is a possibility that unidentified cultural resources could be encountered during ground disturbing activities. If a potential NRHP-eligible cultural resource is encountered during ground disturbing activities, inadvertent damage to the resource could occur if the damage were to alter the characteristics of the resource that qualify it for inclusion in the NRHP.

Mitigation Measures CUL-1a and CUL-2a, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures CUL-1a and CUL-2a would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.4-C	Disturb any human remains, including those interred outside of dedicated cemeteries

The 2015 Draft EIR identified that no human remains are known to be located in or near the APE. However, there is a possibility that unmarked burials or human remains may be encountered during ground-disturbing activities. With the inclusion of Mitigation Measure CUL-3 (which requires archaeological construction monitoring during ground disturbing activities and halting work if human remains are encountered), impacts would be reduced to a less than significant level.

Railroad Bridge Crossings

The railroad bridge crossings are located in a transportation corridor adjacent to residential uses as well as vacant land. The replacement or realignment of the railroad bridge crossings would

occur within an area designated for transportation uses. While there are no known human remains located in or near where the bridge crossing improvements would occur, there is still a possibility that unmarked burials or human remains may be encountered during ground-disturbing activities. Mitigation Measure CUL-3, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure CUL-3 would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site contains similar adjacent land uses (e.g., a mix of residential, commercial, and industrial uses adjacent to the UPRR right of way) as those identified in the 2015 Draft EIR for the original passenger train layover facility site. It is anticipated that improvements proposed as part of the revised passenger train layover facility would be within the existing UPRR ROW. While there are no known human remains located in or near where the improvements would occur, there is still a possibility that unmarked burials or human remains may be encountered during ground-disturbing activities. Mitigation Measure CUL-3, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure CUL-3 would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.4-D	Cause a substantial adverse change in the significance of a tribal cultural resource, as defined by PRC §21074, and that is listed or eligible for listing in the California Register of Historical Resources or in a local register of historical resources as defined by PRC §5024.1.
THRESHOLD 3.4-E	Cause a substantial adverse change in the significance of a tribal cultural resource, as defined by PRC §21074, and that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant to a California Native tribe pursuant to PRC §5024.1.

As part of the 2015 Draft EIR analysis, a search of the NAHC's Sacred Lands File (SLF) was conducted. Results from the NAHC SLF did not indicate the presence of Native American cultural resources within the immediate project area. In addition, the NAHC provided a contact list of eleven potentially interested Native American representatives. Letters were sent with information on the proposed Project to those Native American contacts provided by the NAHC. Requests from Native American representatives included copies of reports prepared for the proposed Project and notification if burials or significant resources were identified.

Based on the information obtained through coordination with the identified Native American representatives, the 2015 Draft EIR did not identify any known tribal cultural resources that would

be impacted with implementation of the proposed Project. Although there would be no significant impacts to identified tribal cultural resources, the 2015 Draft EIR identified that there is a possibility that unidentified cultural resources could be encountered during ground disturbing activities. The 2015 Draft EIR indicated that the potential for discovery of cultural resources is higher in areas adjacent to rivers and streams that would be subject to deep ground disturbance (e.g., bridge-related pilings). The 2015 Draft EIR concluded that if a cultural resource is encountered during ground disturbing activities, inadvertent damage to the resource could occur.

The inclusion of Mitigation Measures CUL-1a, (which requires archaeological presence/absence testing in areas of the APE adjacent to the American River prior to final design) and CUL-2a (which requires archaeological construction monitoring during ground disturbing activities) would reduce construction related impacts to a less than significant level.

Railroad Bridge Crossings

The railroad bridge crossings are located in a transportation corridor adjacent to commercial, industrial, and residential uses as well as vacant land. The replacement or realignment of the railroad bridge crossings would occur within an area designated for transportation uses. While there are no known tribal cultural resources located in or near where the railroad bridge crossing improvements would occur, there is still a possibility that tribal cultural resources may be encountered during ground-disturbing activities. Mitigation Measures CUL-1a and CUL-2a, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures CUL-1a and CUL-2a would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site contains similar adjacent land uses (e.g., a mix of residential, commercial, and industrial uses adjacent to the UPRR right of way) as those identified in the 2015 Draft EIR for the original passenger train layover facility site. Improvements proposed as part of the revised passenger train layover facility would be within the existing UPRR ROW. While there are no known tribal cultural resources located in or near where the improvements would occur, there is still a possibility that previously unidentified cultural resources may be encountered during ground-disturbing activities. Mitigation Measures CUL-1a and CUL-2a, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures CUL-1a and CUL-2a would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

3.5 Geology, Soils, Seismicity, Mineral Resources, and Paleontological Resources

3.5.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to geology and soils, are identified in the 2015 Draft EIR (Chapter 3.7, Geology, Soils, Seismicity, Minerals, and Paleontological Resources). The regulatory framework for geology and soils, seismicity, mineral resources, and paleontological resources for this SEIR is the same as presented in 2015 Draft EIR.

3.5.2 Environmental Setting

Information about the existing environmental conditions related to geology, soils, seismicity, mineral resources, and paleontological resources in the Project study area was included in the 2015 Draft EIR (Section 3.7, Geology, Soils, Seismicity, Minerals, and Paleontological Resources). The Project corridor is underlain by Holocene floodplain alluvial deposits and older Pleistocene alluvial deposits. The 2015 Draft EIR divided the Project corridor into four segments based on similarity of existing surface conditions and/or specific structures proposed along the corridor.

- Segment 1: Sacramento Yard to Elvas Way (mile post [MP] 89.04–MP 91.67).
- Segment 2: Elvas Way to Arden Way (includes American River Crossing) (MP 91.67–MP 93.57).
- Segment 3: Arden Way to Walerga Road (MP 93.57–MP 100.33).
- Segment 4: Walerga Road to Roseville Yard/Downtown Station (MP100.33 to MP 106.84).

The railroad bridge crossings are located in Segments 1 and 2. The revised Passenger Train Layover Facility is located in Segment 4.

Segments 1 and 2 are underlain primarily by alluvial floodplain deposits. These are young deposits of Holocene age made up of sand, gravel, and silt that are poorly to moderately sorted. Segment 4 is underlain primarily by the Turlock Lake Formation. This formation is of Pleistocene age and made up of arkosic sand and silt with minor gravel.

In terms of seismicity, the 2015 Draft EIR identified that the Project corridor is in a region of California characterized by relatively low seismic activity and the risk of surface fault rupture in the Project corridor is low. In addition, the Project corridor is not located within an Alquist-Priolo Earthquake Fault Zone and there are no known active or potentially active faults that cross any segments of the Project corridor.

3.5.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.5-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

3.5.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to geology and soils, seismicity, mineral and paleontological resources if it were to:

a) Directly or indirectly cause 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.
    ii. Strong seismic ground shaking.
    iii. Seismic related ground failure including liquefaction.
    iv. Landslides.

b) Result in substantial soil erosion or loss of topsoil.

c) Be located on a geologic unit that is unstable, or would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading liquefaction, or collapse.

d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect 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 waste water.

f) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

g) 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.

h) Directly or indirectly destroy a unique paleontological resource or site or unique geologic features.

Table 3.5-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Geology and Soils

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold GEO-1: Exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic related ground failure, including liquefaction, or landslides *Construction and Operation* The Project corridor is not located in an Alquist-Priolo Earthquake Fault Zone, and no known active or potentially active faults cross the corridor.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold GEO-2: Potential to result in substantial soil erosion or the loss of topsoil *Construction* Ground disturbance associated with the proposed Project has the potential to increase erosion and sedimentation rates above existing conditions. Compliance with NPDES permit requirements during construction would address erosion impacts. *Operation* Operation of the Project does not include any characteristics that would result in substantial soil erosion.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable

Table 3.5-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Geology and Soils

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold GEO-3: Placement of Project-related facilities on a geologic unit or soil that is unstable or that would become unstable as a result of the Project and potentially result in an onsite or offsite landslide, lateral spreading, subsidence, or collapse *Construction* The Project corridor is relatively flat and risk of landslide or collapse is low. Prior to construction, geotechnical investigations would be conducted and proper design of cuts, fills, and foundations for Project features developed. *Operation* Operation of the Project would be similar to the activities currently carried out under existing conditions.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold GEO-4: Placement of Project-related facilities on expansive soil, creating substantial risks to life or property *Construction* The Project corridor is relatively flat and risk of landslide or collapse is low. Prior to construction, geotechnical investigations	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable

Table 3.5-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Geology and Soils

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
would be conducted and proper design of cuts, fills, and foundations for Project features developed. *Operation* Operation of the Project would be similar to the activities currently carried out under existing conditions.			
Threshold GEO-5: Placement of facilities on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater *Construction and Operation* The Project would not use septic tanks or alternative wastewater systems.	*Construction* No Impact *Operation* No Impact	Not Applicable	Not Applicable
Threshold GEO-6: Contribution to the loss of availability of a known mineral resource that would be of value to the region and the residents of the state *Construction and Operation* Implementation of the Project would not result in a loss of known mineral resources, either by being constructed on top of a	*Construction* Less than Significant *Operations* Less than Significant	Not Applicable	Not Applicable

Table 3.5-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Geology and Soils

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
mineral resource or by creating a land use inconsistent with mining activities.			
Threshold GEO-7: Contribution to 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 *Construction and Operation* The Project would not result in loss of availability of a locally important mineral resource.	*Construction* Less than Significant *Operations* Less than Significant	Not Applicable	Not Applicable
Threshold GEO-8: Direct or indirect destruction of a unique paleontological resource or site or unique geologic feature *Construction* Construction of the Project could result in direct or indirect destruction of a unique paleontological resource or site. *Operation* Operation of the Project does not include any characteristics that would result in the direct or indirect destruction of a paleontological resource.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure GEO-8a: Educate construction personnel in recognizing fossil material.** Prior to construction, UPRR shall ensure that all construction personnel receive training provided by a qualified professional paleontologist who is experienced in teaching non specialists to ensure that construction personnel can recognize fossil materials in the event any are discovered during construction. **Mitigation Measure GEO-8b: Stop work if substantial fossil remains are encountered during construction.** If substantial fossil remains (particularly vertebrate remains) are discovered during earth disturbing activities, the construction contractor shall stop activities immediately until a State registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend	*Construction* Less than Significant *Operation* Not Applicable

Table 3.5-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Geology and Soils

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. UPRR shall be responsible for ensuring that recommendations regarding treatment and reporting are implemented. **Mitigation Measure GEO-8c: Retain a qualified professional paleontologist to monitor significant ground-disturbing activities.** Prior to construction, UPRR shall retain a qualified professional paleontologist as defined by SVP's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (2010) to monitor activities with the potential to disturb sensitive paleontological resources. Data gathered during detailed Project design shall be used to determine the activities that will require the presence of a monitor. In general, these activities include any ground-disturbing activities involving excavation deeper than 3 feet in areas with high potential to contain sensitive paleontological resources. Recovered fossils shall be prepared so that they can be properly documented. Recovered fossils shall then be curated at a facility that will properly house and label them, maintain the association between the fossils and field data about the fossils' provenance, and make the information available to the scientific community. *Operation* Not Applicable	

THIS PAGE IS INTENTIONALLY BLANK.

3.5.5 Environmental Analysis

THRESHOLD 3.5-A	Exposure of people or structures to potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides
THRESHOLD 3.5-C	Be located on a geologic unit that is unstable, or would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, liquefaction, or collapse
THRESHOLD 3.5-D	Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property

The 2015 Draft EIR identified that the Project corridor was not located within in an Alquist-Priolo Earthquake Fault Zone, and no known active or potentially active faults cross the Project corridor. Therefore, impacts associated with surface fault rupture were determined to be less than significant. While the Project corridor is not likely to be affected by surface fault rupture, the Project corridor could be subject to secondary seismic hazards. Specifically, the 2015 Draft EIR identified that the unconsolidated alluvial deposits along portions of the Project corridor could be potentially liquefiable during a seismic event.

Prior to the initiation of construction activities, geotechnical investigations would be conducted along the Project corridor and at proposed structures and associated facilities to provide analysis of materials encountered to quantify susceptibility for liquefaction. The investigation would include recommendations for the design of appropriate foundations for Project features to meet building standards. With the preparation of geotechnical investigations, the 2015 Draft EIR concluded that seismic hazards, including the potential for lateral spreading, liquefaction, soil collapse, would be reduced to a less than significant level.

Railroad Bridge Crossings

The location of the railroad bridge crossings does not fall within an Alquist-Priolo Fault Rupture Hazard Zones and is not within 1,000 feet of a Holocene or younger fault. The surface fault rupture potential at the railroad bridge crossing sites are considered low. In addition, based on the existing subsurface investigations completed and the flat nature of the surrounding topography, it is anticipated that geotechnical hazards due to landslides, embankment failures, ground subsidence, or collapse would not be an issue at the railroad bridge crossings.

Based on the as-built information available, it appears that risk for liquefaction is high in the area. The replacement or realignment of the railroad bridge crossings would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies, such as the preparation of a soil subsurface investigation seismic design recommendations. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Similar to what was identified in the 2015 Draft EIR, a site specific geotechnical investigation for the revised passenger train layover facility would be prepared prior to construction commencing. The geotechnical investigation would characterize underlying materials within the passenger train layover facility and identify the proper design of cuts, fills, and foundations. Operation and maintenance activities for the revised passenger train layover facility would be similar to those activities currently carried out under existing conditions. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.5-B	Result in substantial soil erosion or loss of topsoil

The 2015 Draft EIR identified that ground disturbance caused by construction activities would have the potential to increase erosion and sedimentation rates above existing conditions. The 2015 Draft EIR concluded that with best management practices (BMPs) and measures implemented in compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements, construction impacts associated with soil erosion would be reduced to a less than significant level.

Railroad Bridge Crossings

The replacement or realignment of the existing railroad bridge crossings would still require the same type of construction activities previously identified in the 2015 Draft EIR. Therefore, similar impacts associated with soil erosion could occur during ground-disturbing construction activities. Similar to what was originally identified in the 2015 Draft EIR, adherence to BMPs and measures identified as part of NPDES permit requirements would minimize construction impacts to a less than significant level. Operation of the railroad bridge crossings would not result in additional soil erosion impacts. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction of the passenger train layover facility at its revised location would still require the same type of construction activities previously identified in the 2015 Draft EIR. Therefore, similar impacts associated with soil erosion could occur during ground-disturbing construction activities. Similar to what was originally identified in the 2015 Draft EIR, adherence to BMPs and measures identified as part of NPDES permit requirements would minimize construction impacts to a less than significant level. Operation of the passenger train layover facility at its revised location would not result in additional soil erosion impacts. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.5-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

No septic systems or alternative wastewater disposal systems were proposed as part of the proposed Project. The 2015 Draft EIR concluded that no impacts would occur.

Railroad Bridge Crossings

The replacement or realignment of the existing railroad bridge crossings would not require septic systems or alternative wastewater disposal systems. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction and operation of the revised passenger train layover facility does not propose the use of septic systems or alternative wastewater disposal systems. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.5-F	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state
THRESHOLD 3.5-G	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

Minerals are defined as any naturally occurring chemical elements or compounds, formed from inorganic processes and organic substances. Mineable minerals or an ore deposit is defined as a deposit of ore or mineral having a value materially in excess of the cost of developing, mining, and processing the mineral and reclaiming the project area. The conservation, extraction, and processing of mineral resources are an integral part of development and economy within California.

The California Geology Survey (CGS) provides information about California's non-fuel mineral resources and classifies lands throughout the state that contain regionally significant mineral resources, as mandated by the Surface Mining and Reclamation Act of 1975. Non-fuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate such as sand, gravel, and crushed stone. Development generally results in a demand for minerals, especially construction aggregate. The classification of these mineral resources is a joint effort of the state and the local governments and is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four Mineral Resource Zone (MRZ) classifications.

The 2015 Draft EIR identified Segments 1 and 2 of the Project corridor as being located in a MRZ-3 area. An MRZ-3 classification is considered to be an area that contains mineral deposits, but the significance of which cannot be evaluated from available data. Segment 4 of the Project corridor was identified as being located in a MRZ-4 area. An MRZ-4 classification is considered to be an area where available information is inadequate for assignment to another MRZ classification. The 2015 Draft EIR also disclosed that no mineral resources are identified within the Project corridor by either the Sacramento County or Placer County general plans. The 2015 Draft EIR concluded that a less than significant impact would occur with Project implementation.

Railroad Bridge Crossings

Although the area in which these existing railroad bridge crossings are located in has a MRZ-3 classification, there are no mineral extraction zones or activities present as the area is developed with transportation infrastructure (e.g., existing freeways and railroad tracks) and is adjacent to existing commercial, residential, and recreational uses. Therefore, implementation of the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site contains similar adjacent land uses (e.g., a mix of residential, commercial, and industrial uses adjacent to the UPRR right of way) as those identified in the 2015 Draft EIR for the original passenger train layover facility site. Although the area where the passenger train layover facility is located in has a MRZ-4 classification, there are no mineral extraction zones or activities present as the area is developed with transportation infrastructure (e.g., existing railroad tracks) and is adjacent to existing commercial, industrial, education, and residential uses. The revised Project would not result in a loss of known mineral resources, either by removing an area that could be mined for mineral resources or by creating a land use inconsistent with mining activities. Therefore, implementation of the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.5-H	Directly or indirectly destroy a unique paleontological resource or site or unique geologic features

The 2015 Draft EIR identified that geologic units present in the Project corridor have the potential to contain paleontological resources and concluded that if fossils are present in the Project corridor, they could be damaged during ground-disturbing construction activities associated with the proposed Project. Substantial damage to or destruction of significant paleontological resources would be a potentially significant impact. Due to the potential impacts that could occur on sensitive paleontological resources, Mitigation Measures GEO-8a through GEO-8c were identified.

Mitigation Measure GEO-8a requires paleontological training to be provided to construction personnel prior to construction activities. Mitigation Measure GEO-8b provides guidance on what

to do in the event that substantial fossil remains are encountered during construction activities. Mitigation Measure GEO-8c requires paleontological monitoring where construction would involve excavation of more than 3 feet. With implementation of Mitigation Measures GEO-8a through GEO-8c, impacts on paleontological resources during construction activities would be reduced to a less than significant level. Operational activities associated with the proposed Project would not require ground disturbing activities. The 2015 Draft EIR concluded that there would be no impact on paleontological resources.

Railroad Bridge Crossings

The replacement or realignment of the railroad bridge crossings would require deeper excavation of soil due to modifications or replacement of the existing bridge abutments and wingwalls. The existing railroad bridge crossings are located in an area mapped as Quaternary age Holocene Alluvium. The Holocene Alluvium are alluvial soil deposits consisting of clays, silts, sands and gravels deposited by flows within the American River. Just south of the Elvas Railroad Bridge Crossing the area is mapped as Quaternary age (Pleistocene) alluvial deposits of the River Bank Formation Middle Member which may be encountered in the subsurface depending on the thickness of the Holocene Alluvium deposits in the area.

Due to the nature of the construction activities that would be required for the replacement or realignment of the existing railroad bridge crossings, Mitigation Measures GEO-8a through GEO-8c, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures GEO-8a through GEO-8c would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction of the passenger train layover facility at its revised location would still require the same type of construction activities previously identified in the 2015 Draft EIR. Therefore, similar impacts to paleontological resources could occur during ground-disturbing construction activities. Mitigation Measures GEO-8a through GEO-8c, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures GEO-8a through GEO-8c would minimize construction impacts to a less than significant level. Operation of the passenger train layover facility at its revised location would not result in additional impacts to paleontological resources. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

3.6 Hazards and Hazardous Materials

3.6.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to hazards and hazardous materials are identified in the 2015 Draft EIR (Chapter 3.8, Hazards and Hazardous Materials). The regulatory framework for hazards and hazardous materials for this SEIR is the same as presented in 2015 Draft EIR.

3.6.2 Environmental Setting

The 2015 Draft EIR addressed hazards and hazardous materials impacts associated with the introduction of new linear rail infrastructure elements within the Project study area. The Project is located within the existing railroad right of way owned, operated, and maintained by UPRR. CCJPA's current passenger service operates on a shared track within the railroad ROW. The 2015 Draft EIR identified that existing permits and maintenance practices of UPRR pertaining to the prevention of hazardous waste generation or spills would continue under Project construction and operation.

Numerous California Hazardous Material Incident Reporting System (CHMIRS) incidents have been documented within the existing UPRR rail corridor. Typically, railroad ROW is viewed as a potential area of soil contamination due to the presence of petroleum hydrocarbon or chemical conveyance pipelines within the ROW, as well as potential spills and weed abatement and other railroad operations involving chemicals within the ROW.

The 2015 Draft EIR also identified listed properties of concern within the Project corridor (see 2015 Draft EIR Figure 3.8-1). There are no listed properties of concern that were identified within the area where the railroad bridge crossings are located. There is one potential site of concern identified near the area where the revised passenger train layover facility site is proposed (Zap Termite & Pesticide Control located at 128 Brittain Street in Roseville). However, this is outside of the Project area identified for the revised passenger train layover facility site.

3.6.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.6-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

Table 3.6-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hazards and Hazardous Materials

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold HAZ-1: Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials *Construction and Operation* Construction and operational activities would use limited quantities of miscellaneous hazardous materials (e.g., petroleum-based and could result in accidental spills of hazardous materials.	*Construction* Potentially Significant *Operation* Potentially Significant	*Construction and Operation* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials.** Before the commencement of Project construction, the construction contractor shall ensure that any employee handling hazardous materials is trained in the safe handling and storage of hazardous materials per all applicable regulations (e.g., OSHA hazardous materials standards listed in 29 CFR 1910 Subpart H), and staging areas where hazardous materials would be stored during construction shall be identified in accordance with applicable state and federal regulations. Similarly, during operations, UPRR and CCJPA personnel shall be likewise trained in the safe handling and storage of hazardous materials.	*Construction* Less than Significant *Operation* Less than Significant
Threshold HAZ-2: Creation of 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. *Construction* Contaminants could be present in soils in areas of proposed improvements and released through Project-related construction activities. *Operation*	*Construction* Potentially Significant *Operation* Potentially Significant	*Construction* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials.** **Mitigation Measure HAZ-2a: Conduct Phase II Environmental Site Assessment studies.** Prior to construction of the Build Alternative, Phase II soil studies shall be conducted to assess areas of proposed improvements to provide site-specific data upon which to rely when developing the Soil Management Plan (discussed in Mitigation Measure HAZ-3). The Phase II studies can include but are not limited to the following.	*Construction* Less than Significant *Operation* Less than Significant

Table 3.6-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hazards and Hazardous Materials

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Operational activities are expected to generate hazardous material waste through the use of lubricants, solvents, and other materials that, if improperly handled, could be accidentally released into the environment.		• A scope of work consisting of prefield activities, such as preparation of a Health and Safety Plan (HASP), marking boring locations, and obtaining utility clearance; and field activities, such as identifying appropriate sampling procedures, health and safety measures, chemical testing methods, and quality assurance/quality control (QA/QC) procedures in accordance with the ASTM Standard. • Necessary permits for boring advancement. • A Sampling and Analysis Plan (SAP) in accordance with the scope of work. • Laboratory analyses conducted by a state-certified laboratory. **Mitigation Measure HAZ-2b: Prepare a Soil Management Plan.** The Soil Management Plan (SMP) shall address the concerns associated with releases of contaminated soil within and adjacent to the railroad ROW and railyard areas. The SMP shall include specifications for procedures to manage affected soil during construction. *Operation* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials.**	
Threshold HAZ-3: Emission of hazardous emissions or handling of hazardous or acutely	*Construction* Potentially Significant	*Construction* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials**	*Construction* Less than Significant

Table 3.6-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hazards and Hazardous Materials

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school *Construction* Several existing schools have been identified near the Project corridor. Construction and activities would use limited quantities of miscellaneous hazardous materials (e.g., petroleum-based and could result in accidental spills of hazardous materials. *Operation* Use of hazardous materials during maintenance activities for the proposed Project would be similar to activities required to maintain existing equipment within the Project corridor. Hazardous materials used and waste generated by the operations would be managed according to all applicable regulatory requirements, minimizing the exposure risk to the surrounding environment, including nearby schools.	*Operation* Less than Significant	**Mitigation Measure HAZ-2a: Conduct Phase II Environmental Site Assessment studies** **Mitigation Measure HAZ-2b: Prepare a Soil Management Plan** *Operation* Not Applicable	*Operation* Not Applicable
Threshold HAZ-4: Placement of Project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment *Construction* Construction activities could inadvertently result in a disturbance of sites with previously undocumented	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure HAZ-2a: Conduct Phase II Environmental Site Assessment Studies** **Mitigation Measure HAZ-2b: Prepare a Soil Management Plan** *Operation* Not Applicable	*Construction* Less than Significant *Operation* Not Applicable

Table 3.6-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hazards and Hazardous Materials

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
contamination or could disturb known sites with contaminated soil and groundwater. *Operation* Operational activities would consist of maintenance of the existing rail infrastructure and would be conducted in accordance with current UPRR management practices.			
Threshold HAZ-5: Placement of Project-related facilities within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the Project corridor *Construction and Operation* The proposed Project would not result in hazards for people working or residing in the Project corridor within 2 miles of a public airport.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold HAZ-6: Placement of Project-related facilities in the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the Project corridor *Construction and Operation*	*Construction* No Impact *Operation* No Impact	Not Applicable	Not Applicable

Table 3.6-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hazards and Hazardous Materials

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
The proposed Project would not result in the construction or operation of rail infrastructure within the vicinity of a private airstrip.			
Threshold HAZ-7: Impairment of implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan *Construction* Construction activities could interfere with traffic through movement of construction vehicles and while track is being installed. *Operation* Operation of the Project does not include any characteristics that would physically impair or otherwise interfere with emergency response or evacuation in the Project vicinity.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** *Operation* Not Applicable	*Construction* Less than Significant *Operation* Not Applicable
Threshold HAZ-8: Exposure of people or structures to a significant risk involving wildland fires *Construction* During construction, equipment and vehicles containing flammable fuels may come in contact with	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure HAZ-4: Minimize risk of wildland fire.** Before the commencement of construction of the Build Alternative, the construction contractor shall ensure that staging areas, welding areas, or other areas slated for construction equipment are cleared of dried vegetation or other materials that could serve as fire fuel. Any construction equipment that normally includes a	*Construction* Less than Significant *Operation* Not Applicable

Table 3.6-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hazards and Hazardous Materials

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
vegetated areas and could accidentally spark and ignite the vegetation. *Operation* Operation of the Project would result in the same type of activities currently occurring within the Project corridor (e.g., regular maintenance of rail infrastructure).		spark arrester shall be equipped with an arrester in good working order. *Operation* Not Applicable	

3.6.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to hazards and hazardous materials if it were to:

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 though 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 two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

g) Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires.

3.6.5 Environmental Analysis

THRESHOLD 3.6-A	Creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
THRESHOLD 3.6-B	Creation of 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
THRESHOLD 3.6-D	Placement of Project-related facilities on a site that is included on a list of hazardous materials sites, and resulting creation of a significant hazard to the public or the environment

Impacts as a result of implementing the revised Project can be broadly classified into construction and operational impacts. Most impacts related to hazards and hazardous materials would occur during construction when the ground is disturbed and when there could be temporary disturbance of hazardous materials. Operation or long-term impacts would include the additional hazardous waste, contaminated materials, and solid waste that are generated by the operation of the revised Project, including from hazardous wastes handled at existing maintenance facilities as a part of

routine operation and maintenance of passenger trains, and from minor spills and releases of non-acutely hazardous waste.

Construction activities identified in the 2015 Draft EIR would involve excavation of soils which increases the likelihood of encountering existing and unknown regulated materials. Hazardous material sites pose a safety risk to workers who might be exposed to contaminated soil, water, and vapor. In addition, vehicles and equipment used during construction activities, such as fuel storage tanks, have the potential to release hazardous materials (mainly petroleum products) and increase material spills. There is also the potential for an increase in hazardous conditions through the movement or dispersion of hazardous materials on site during construction.

The 2015 Draft EIR concluded that although construction activities could increase the potential for use, release, and exposure to hazardous materials or hazardous conditions, appropriate construction safety procedures and equipment stockpiling methods would be used to minimize the potential for unintended releases with all releases reported and addressed under appropriate regulatory guidance. Should contamination be encountered, construction activities would be temporarily halted until characterization, storage, disposal, and cleanup requirements are met.

The inclusion of Mitigation Measures HAZ-1 (which requires the safe handling and storage of hazardous materials), HAZ-2a (which requires the preparation of a Phase II Environmental Site Assessment), and HAZ-2b (which requires the preparation of a soil management plan) would reduce construction related impacts to a less than significant level.

The 2015 Draft EIR also concluded that although operational activities could increase the potential for use, release, and exposure to hazardous materials or hazardous conditions within the Project corridor, appropriate handling and safety procedures would be used to minimize the potential for unintended releases with all releases reported and addressed under appropriate regulatory guidance. The inclusion of Mitigation Measure HAZ-1 (which requires the safe handling and storage of hazardous materials) would reduce operational related impacts to a less than significant level.

Railroad Bridge Crossings

Construction and operation of the railroad bridge crossings would not change the type or handling of materials that would be used as previously identified in the 2015 Draft EIR. Since the railroad bridge crossings are located on Business I-80, there is the potential that aerially deposited lead (ADL) is present in the soil from the historical use of leaded gasoline along roadways throughout California. The replacement or realignment of the railroad bridge crossings would require excavation of soil approximately 3 feet from the edge of the existing pavement and approximately 0.5 feet below existing grade where ADL may exist. Construction and operational activities would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies. These include any specific California Department of Transportation (Caltrans) requirements, such as the preparation of a Project specific Lead Compliance Plan.

Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction of the revised passenger train layover facility would not change the type or handling of materials that would be used as previously identified in the 2015 Draft EIR. Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the construction impacts associated with the routine use, transport, or disposal of hazardous materials. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b would ensure safe handling and storage of hazardous materials resulting in construction impacts being reduced to a less than significant level.

Hazardous waste would be generated from routine operation and maintenance of the passenger train layover facility and associated Project corridor infrastructure. Minor spills and releases of non-acutely hazardous waste (e.g., petroleum, oil, and lubricants) may also occur due to normal operation along the tracks, access roads, and at existing maintenance facilities. While petroleum, oils, and lubricants may be used in rail operations or maintenance, proper use, storage, and disposal practices would minimize the potential for accidental releases. Mitigation Measure HAZ-1, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the operational impacts associated with the routine use, transport, or disposal of hazardous materials. Similar to what was originally identified in the Final EIR, implementation of Mitigation Measure HAZ-1 would ensure safe handling and storage of hazardous materials during operational activities and reduce impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.6-C	Emission of hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school

School locations are important to consider because individuals particularly sensitive to hazardous materials exposure use these facilities. Additional protective regulations apply to projects that could use or disturb potentially hazardous products near or at schools. The California Public Resources Code requires projects that might reasonably be expected to emit or handle hazardous materials within 0.25 mile of a school to discuss potential effects with the applicable school district.

The 2015 Draft EIR identified that during construction activities, any potential construction-related hazardous releases or emissions would be from commonly used materials such as fossil fuels,

solvents, and paints and would not include substances listed in 40 CFR 355 Appendix A: Extremely Hazardous Substances and Their Threshold Planning Quantities. In addition, compliance with all relevant federal, state, and local regulations would ensure that all hazardous materials are used, stored, and disposed of properly, thus minimizing potential impacts related to a hazardous materials release during construction activities. However, the 2015 Draft EIR concluded that unanticipated release of hazardous substances near a school could constitute a significant impact. To reduce impacts to a less than significant level, Mitigation Measure HAZ-1 (which requires the safe handling and storage of hazardous materials), HAZ-2a (which requires the preparation of a Phase II Environmental Site Assessment), and HAZ-2b (which requires the preparation of a soil management plan) were included and would reduce construction related impacts to a less than significant level.

During operational activities, use of hazardous materials during maintenance activities would be similar to activities required to maintain existing equipment. Similar to the construction impacts above, operational activities are not expected to include substances listed in 40 CFR 355 Appendix A: Extremely Hazardous Substances and Their Threshold Planning Quantities, and any hazardous material used is expected to be in the form of a commonly used material such as fossil fuels, solvents, and paints. Hazardous materials used and waste generated by the operations would be managed according to all applicable regulatory requirements, minimizing the exposure risk to personnel and the surrounding environment, including nearby schools. Therefore, the 2015 Draft EIR concluded that operation of the Project would not affect land uses outside of the Project corridor, including the aforementioned schools.

Railroad Bridge Crossings

One school (Courtyard Private School) was identified as being within 0.25 mile of the Project corridor for the railroad bridge crossing component in the 2015 Draft EIR. The modifications associated with the railroad bridge crossings as part of the revised Project does not change the existing school facilities located in the area.

As previously identified, construction and operation of the railroad bridge crossings would not change the type or handling of materials that would be used. Construction and operational activities would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies. Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

In the 2015 Draft EIR, one school (Adelante High School) was identified and is located adjacent to the originally proposed passenger train layover facility site. With the change in passenger train

layover facility site, two additional school facilities (Roseville Joint Union High School and Independence High School) were identified and are located within 0.25 mile of the revised passenger train layover facility.

Construction and operation of the revised passenger train layover facility would not change the type or handling of materials that would be used. Construction and operational activities would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies. Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.6-E	Placement of Project-related facilities within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, resulting in a safety hazard for people residing or working in the Project corridor

Within California, airport land use compatibility is coordinated by an Airport Land Use Commission (ALUC). ALUCs protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports. An Airport Land Use Compatibility Plan (ALUCP) is the basis for compatible planning within the vicinity of a public airport. The ALUCP may include land use measures specifying land use, height restrictions, and building standards. The planning boundary of the ALUCP is the airport influence area and is established by the ALUC after consultation with the involved agencies. Involved agencies are primarily the cities and the county, but also include special districts, school districts, and community college districts. An ALUCP must also address any military airport within the jurisdiction of the ALUC. The 2015 Final EIR identified that a portion of the Project corridor was within the McClellan Air Force Base Comprehensive Land Use Plan (CLUP) planning boundaries. However, the 2015 Draft EIR concluded that no Project features would affect airport operations since the features proposed would involve structures that would be of greater height than existing facilities within the Project corridor. Impacts were considered less than significant.

Since the certification of the 2015 Final EIR, the McClellan Air Force Base has undergone redevelopment as part of the base closure and is now known as McClellan Park with the known as the Sacramento McClellan Airport. The McClellan Park boundaries are the same as those identified for the McClellan Air Force Base CLUP boundaries.

Railroad Bridge Crossings

The railroad bridge crossings are located approximately 4.5 miles southwest of the nearest McClellan Air Force Base CLUP boundary. Since the railroad bridge crossings are not located

within an ALUCP, construction or operation of the revised Project would not result in a safety hazard for people residing or working in the Project corridor. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility is located approximately 2.7 miles northwest of the nearest McClellan Air Force Base CLUP boundary. Since the revised passenger train layover facility is not located within an ALUCP, construction or operation of the revised Project would not result in a safety hazard for people residing or working in the Project corridor. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.6-F	Placement of Project-related facilities in the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the Project corridor

The 2015 Draft EIR identified that the Project corridor was not located within the vicinity of a private airstrip. The nearest private airstrip to the Project corridor is the California Highway Patrol Academy Airport approximately 7 miles west. Since there are no private airstrips within the Project corridor, the 2015 Draft EIR concluded that implementation of the Project would not affect operations of a private airstrip or result in a safety hazard for people residing or working in the Project corridor.

Railroad Bridge Crossings

The railroad bridge crossings are located approximately 5.3 miles east of the California Highway Patrol Academy Airport. Since the railroad bridge crossings are not located within the vicinity of a private airstrip, construction or operation of the revised Project would not result in a safety hazard for people residing or working in the Project corridor. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

There are no private airstrips located within the vicinity of the revised passenger train layover facility. Since the revised passenger train layover facility is not located within the vicinity of a private airstrip, construction or operation of the revised Project would not result in a safety hazard for people residing or working in the Project corridor. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.6-G	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

The 2015 Draft EIR identified that construction of the proposed Project could interfere with traffic through movement of construction vehicles and required track work. Adherence to requirements of the Sacramento County Office of Emergency Services and Placer County Office of Emergency Services would ensure adequate response to emergencies and evacuation plans and therefore reduce the potential for interfering with local emergency plans. The 2015 Draft EIR concluded that with implementation of Mitigation Measure TRA-1, which requires the implementation of a site-specific construction management plan, impacts would be reduced to a less than significant level.

The 2015 Draft EIR also identified that operation of the Project does not include any characteristics that would physically impair or otherwise interfere with emergency response or evacuation in the Project vicinity. No impacts associated with this issue were identified in the 2015 Draft EIR.

Railroad Bridge Crossings

The replacement or realignment of the railroad bridge crossings would have construction activities that could require traffic detours and road closures in order to replace or realign the existing bridge structures. Mitigation Measure TRA-1, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the potential construction access impacts during construction activities. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure TRA-1 would reduce potential impacts to a less than significant level.

Once constructed, the railroad bridge crossings would continue to function as railroad bridges and would not result in permanent road closures which conflict or interfere with emergency response or evacuation plans. Implementation of the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Final EIR.

Passenger Train Layover Facility

Construction of the passenger train layover facility at its revised location would have construction activities that could require traffic detours and road closures in order to construct the track work and roadway access. Mitigation Measure TRA-1, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the potential construction access impacts during construction activities. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure TRA-1 would reduce potential impacts to a less than significant level.

Operation of the passenger train layover facility at its revised location would not result in permanent road closures that would conflict or interfere with emergency response or evacuation plans. In addition, the passenger train layover facility would add additional access roads to ensure

adequate access to the new layover tracks. Similar to what was identified in the 2015 Draft EIR, the revised Project would not result in changes that would conflict or interfere with applicable emergency response plans or emergency evacuation plans. Implementation of the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Final EIR.

THRESHOLD 3.6-H	Expose people or structures either directly or indirectly to a significant risk of loss, injury or death involving wildland fires

The 2015 Draft EIR identified that the Project corridor is not located within a wildfire hazard zone. However, unincorporated areas of the County, especially in recreational areas such as the American River Parkway could provide fuel loads for wildfires. The proximity of construction activities to these areas could result in a potentially significant impact. The 2015 Draft EIR concluded that with implementation of Mitigation Measure HAZ-4, which requires removal of flammable vegetation and other materials prior to the commencement of construction, impacts related to wildfires would be reduced to a less than significant level. During operation of the Project, the 2015 Draft EIR concluded that because operational activities would be consistent with existing conditions, impacts would be less than significant for wildland fire hazards.

Railroad Bridge Crossings

The railroad bridge crossings cross over Business I-80, which consists of asphalt and concrete areas. However, there are vegetated areas located adjacent to these existing railroad bridge crossing. Therefore, there is a potential for construction equipment to accidentally spark and ignite the vegetation during construction activities.

Mitigation Measure HAZ-4, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the potential wildfire impacts identified for the railroad bridge crossings during construction activities. Similar to what was originally identified in the 2015 Final EIR, implementation of Mitigation Measure HAZ-4 would minimize the potential impacts for construction activities to contribute to wildland fire risks to a less than significant level. Once constructed, the revised Project would result in the operation of the railroad bridge crossings with operations conducted in accordance with current UPRR management practices. Implementation of the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Final EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site would be located within an urbanized part of the City of Roseville. The site would be located within the existing rail ROW, which is developed with paved surfaces and railroad tracks. However, there are portions of the site that contain vegetated areas. Although the location of the passenger train layover facility has changed, it is anticipated that construction of the facility would require the same construction activities as those identified for the original passenger train layover facility. However, because there are vegetated areas

adjacent to this location, there is a potential for construction equipment to accidentally spark and ignite the vegetation during construction activities.

Mitigation Measure HAZ-4, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would also be implemented to address the potential for construction activities to contribute to wildfire risks. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure HAZ-4 would minimize impacts to a less than significant level. Once constructed, the revised Project would result in the operation of a passenger train layover facility with operations conducted in accordance with current UPRR management practices similar to what was identified in the 2015 Final EIR. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

3.7 Hydrology and Water Resources

3.7.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to hydrology, water quality, and water resources, are identified in the 2015 Draft EIR (Chapter 3.6, *Hydrology and Water Resources*). The regulatory framework for hydrology and water resources for this SEIR is the same as presented in 2015 Draft EIR.

3.7.2 Environmental Setting

The overall Project identified in the 2015 Draft EIR is located in the Sacramento River Hydrologic Region, which encompasses approximately 17.4 million acres and all or large portions of Modoc, Siskiyou, Lassen Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa Counties.

For surface water resources, the Project is located in the Sacramento River Basin, encompassing 27,210 square miles and comprising all watersheds tributary to the Sacramento River. In addition, the Project corridor traverses three major watersheds: American River, Steelhead Creek, and Dry Creek.

For groundwater resources, the Project is located in the Sacramento Valley groundwater basin, which makes up the northern part of the great Central Valley groundwater basin. The Sacramento Valley groundwater basin comprises 24 of 88 subbasins underlying the Sacramento River Hydrologic Region (Fugro 2014). The Project corridor overlies 2 of the 24 subbasins: the South American subbasin (from the Sacramento Railyard in Segment 1 to approximately MP 98), and the North American subbasin (from MP 98 to the northern extent of the Project corridor). The South American subbasin, with a surface area of 388 square miles, is in the southeastern portion of the Sacramento groundwater basin (Fugro 2014), south of the American River.

Existing groundwater levels are approximately 20 feet deep or less throughout the basin. The North American subbasin, with a surface area of 548 square miles, is in the eastern central portion of the Sacramento groundwater basin (Fugro 2014), north of the American River. Groundwater generally flows west-southwest at an average grade of approximately 5 percent. The upper aquifer system has a depth of 200 to 300 feet below the ground surface (bgs), and the lower aquifer system is deeper than 300 feet bgs.

3.7.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.7-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

Table 3.7-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hydrology and Water Quality

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold WQ-1: Violation of any water quality standards or waste discharge requirements *Construction* Ground-disturbing activities would disturb existing vegetation cover and soils, would expose areas of disturbed ground that could be subject to rainfall and erosion, and could cause temporary discharges of sediment and other contaminants into receiving waters or onto the ground where they can be carried into receiving waters. *Operation* Operation and maintenance activities could result in additional nonpoint source pollution discharging into waterways or into receiving waters.	*Construction* Potentially Significant *Operation* Potentially Significant	*Construction and Operation* **Mitigation Measure HAZ-1: Ensure safe handling and storage of hazardous materials.** **Mitigation Measure HAZ-2a: Conduct Phase II Environmental Site Assessment studies** **Mitigation Measure HAZ-2b: Preparation of a Soil Management Plan**	*Construction* Less than Significant *Operation* Less Than Significant
Threshold WQ-2: Substantial depletion of groundwater supplies or substantial interference with groundwater recharge *Construction* The Project would not require the use of groundwater supplies during construction. In addition, groundwater supplies and recharge capabilities would not be substantially impacted in the Project corridor.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable

Table 3.7-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hydrology and Water Quality

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Operation Operation and maintenance activities would not require the use of groundwater supplies. New impervious areas in the form of new platforms, bridge surfaces, and railroad tracks through urban areas, would not be located in areas designated for groundwater recharge.			
Threshold WQ-3: Substantial alteration of existing drainage patterns in a manner that would result in substantial erosion or siltation onsite or offsite *Construction and Operation* The proposed Project would not substantially alter existing drainage patterns in a manner that would result in erosion or siltation on or offsite.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold WQ-4: Substantial alteration of existing drainage patterns in a manner that would result in flooding onsite or offsite *Construction and Operation* The proposed Project would not substantially alter existing drainage patterns in a manner that would result in flooding on or offsite.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold WQ-5: Creation of or contribution to runoff water that would exceed the	*Construction*	Not Applicable	Not Applicable

Table 3.7-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hydrology and Water Quality

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff *Construction and Operation* A Project SWPPP would be prepared and BMPs would be implemented to protect water quality in the Project vicinity	Less than Significant *Operations* Less than Significant		
Threshold WQ-6: Other substantial degradation of water quality *Construction* Construction of the proposed project would involve the placement of permanent fill into wetlands and other waters of the United States, which could significantly degrade water quality. *Operation* No placement of dredged or fill materials within waters of the United States would be associated with Project operation.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure BIO-1e: Compensate for the temporary and permanent impacts on waters of the United States, including wetlands** **Mitigation Measure BIO-2a: Minimize potential for the long-term loss of riparian forest communities** *Operation* Not Applicable	*Construction* Less than Significant *Operation* Not Applicable
Threshold WQ-7: Placement of housing within a 100-year flood hazard area *Construction and Operation* The proposed Project would not place housing within a 100-year flood hazard area.	*Construction* No impact *Operation* No impact	Not Applicable	Not Applicable

Table 3.7-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hydrology and Water Quality

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold WQ-8: Placement of structures that would impede or redirect flood flows within a 100-year flood hazard area. *Construction* Construction of bridges would entail placement of equipment and temporary coffer dams in and near water bodies during in-water work. Any such impedances in flow would be temporary with in-water work conducted during the dry season during low flows. *Operation* Any structures located within the FEMA floodway must meet the no-rise criteria to ensure the area is open to convey flood waters downstream. The proposed Project would place structures within a floodway.	*Construction* Less than Significant *Operation* Potentially Significant	*Construction* Not Applicable *Operation* **Mitigation Measure WQ-8: Implement bridge design modifications and field studies to minimize potential flood-related impacts.** Additional design modifications to reduce the overall impact of the proposed bridge structures on the potential for flooding shall be considered in the design phase to reduce potential flood related impacts. Any additional changes to the bridge configuration during a future design process will need to be incorporated into the HEC-RAS (hydraulic modeling software) model and results recomputed. It is anticipated that additional field survey and bathymetry (i.e., underwater topography) data cross sections would be collected during a future design phase to verify HEC-RAS model results and help determine potential bridge design modifications.	*Construction* Not Applicable *Operation* Less than Significant
Threshold WQ-9: Exposure of people or structures to significant risk involving flooding, including flooding as a result of the failure of a levee or dam *Construction and Operation* In the event of levee or dam failure, there could be flooding of several areas of the Project corridor. However, the existing flooding potential would not be changed by the proposed Project.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable

Table 3.7-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Hydrology and Water Quality

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold WQ-10: Contribution to inundation by seiche, tsunami, or mudflow The proposed Project is geographically removed from areas where the potential for inundation by seiche, tsunami, or mudflow could occur.	*Construction* No impact *Operation* No impact	Not Applicable	Not Applicable

THIS PAGE IS INTENTIONALLY BLANK.

3.7.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to hydrology and water quality if it were to:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

   i. Result in a substantial erosion or siltation on- or off-site.

   ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.

   iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

   iv. Impede or redirect flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.7.5 Environmental Analysis

THRESHOLD 3.7-A	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality
THRESHOLD 3.7-E	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

Construction activities identified in the 2015 Draft EIR would involve excavation of soils which increases the likelihood of encountering existing and unknown regulated materials. In addition, vehicles and equipment used during construction activities, such as fuel storage tanks, have the potential to release contaminants (mainly petroleum products) into receiving waters and impact water quality in the area through:

- Increases in suspended sediment, hydrocarbons, oil and grease, and heavy metals during construction of bridge crossings located over water, with the potential to violate state and federal water quality standards.

- Increases in the potential for accidental spills of fuel and other toxic materials during construction that could result in inadvertent discharges of hazardous waste into receiving waters either in stormwater runoff or directly into open water. The water quality impacts from spills would be of short or long duration depending on the type of material, size of the spill, and seasonal timing.

- Increases in the potential for release of smelter slag, which is commonly used as a bed material for railroad tracks. It has not been verified that smelter slag is present along the Project corridor. Smelter slag contains high amounts of oxidized and environmentally available heavy metals. If slag is discharged into waters of the state, contaminants may exceed California Department of Health Services (CDHS) maximum contaminant levels (MCLs) for antimony, arsenic, barium, cadmium, copper, lead, mercury, selenium, silver, thallium, and zinc. Fine sediments contaminated with heavy metals from smelter slag could be distributed during grading and track-laying activities. It is anticipated that these contaminated sediments would be filtered from the water through vegetated stream channels; however, if a large amount of contaminated sediments were to spill into waters of the state, impairment to water quality would occur.

- Potential contamination of groundwater from dewatering activities during excavation for utility relocation, pile driving, or other excavation activities that could come in contact with water. Bridge construction would involve soil drilling for foundations of piers. Soil drilling could affect groundwater quality by enabling migration of surface water contaminants into the groundwater aquifer below the bridges.

- Potential for contaminated sites to be encountered during construction and associated contaminated soil to be discharged into surface waters through erosion or sedimentation or into groundwater via preferential pathways during pile drilling.

The 2015 Draft EIR concluded that construction activities could increase the potential for use and release of potential contaminants into receiving waters. However, with implementation of appropriate best management practices (BMPs) identified as part of NPDES permit requirements, water quality impacts would be reduced. In addition, the inclusion of Mitigation Measures HAZ-1 (which requires the safe handling and storage of hazardous materials), HAZ-2a (which requires the preparation of a Phase II Environmental Site Assessment), and HAZ-2b (which requires the preparation of a soil management plan) would further reduce construction related water quality impacts to a less than significant level.

Although the new track would be constructed adjacent to an existing track and within the existing ROW, the 2015 Draft EIR identified that the daily operation and maintenance of the proposed Project could increase nonpoint source pollution to the waterways and sensitive wetland areas

located along and downstream of the Project corridor. Nonpoint source pollution containing suspended solids, organic and inorganic compounds, oils and grease, and miscellaneous waste from train engine crank cases, lubricants used on tracks, and track maintenance activities could be conveyed to waterways. Locomotives commonly discharge a minor amount of oils, containing residual particulate matter from engine combustion, to the area between the two tracks. These pollutants can increase turbidity, stimulate algal growth, increase sedimentation of aquatic habitat, and introduce compounds that are toxic to humans and aquatic organisms. An accidental spill over any of the waterways in the Project corridor could potentially discharge hazardous chemicals or pollutants into the waterways and downstream water bodies, resulting in a violation of water quality standards and a threat to drinking water supplies. A method of catchment would be proposed for containment of spills related to crank case oils and other operational pollutants that may discharge directly to the waterway below to avoid water quality standards violation. Any such nonpoint source discharge or accidental spill would constitute a significant impact.

However, the 2015 Draft EIR concluded that with compliance with relevant regulations (e.g., Construction General Permit requiring implementation of a Storm Water Pollution Prevention Plan (SWPPP), compliance with the NPDES Low Threat Discharge Permit, State Small MS4 Permit, Sacramento MS4 Permit), and implementation of BMPs during operations and maintenance activities (good housekeeping practices) would minimize the risk of such occurrences. Compliance with these regulations and implementation of Mitigation Measures HAZ-1, HAZ-2a, and HAZ 2b would reduce operational water quality impacts to a less than significant level.

Railroad Bridge Crossings

Construction and operation of the railroad bridge crossings would not change the type of materials that would be used as previously identified in the 2015 Draft EIR. The replacement or realignment of the railroad bridge crossings would require construction and operational activities that could increase the potential for the release of potential contaminants into receiving waters. Construction and operational activities would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies, such as conditions contained in the Caltrans Statewide NPDES MS4 Permit.

Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction of the revised passenger train layover facility would result in activities that would increase the potential for the release of potential contaminants into receiving waters. In addition, potential contaminants would be generated from routine operation and maintenance of the passenger train layover facility and associated Project corridor infrastructure. Minor spills and

releases of non-acutely hazardous waste (e.g., petroleum, oil, and lubricants) may also occur due to normal operation along the tracks, access roads, and at existing maintenance facilities. While petroleum, oils, and lubricants may be used in rail operations or maintenance, proper use, storage, and disposal practices would minimize the potential for accidental releases into receiving waters. Construction and operational activities would still be required to adhere to applicable federal, State, and local laws and regulations, including, but not limited to those set forth by federal, state, and local policies, including NPDES permitting requirements.

Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b, which were previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measures HAZ-1, HAZ-2a, and HAZ-2b would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.7-B	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin

Groundwater supplies and groundwater recharge capability would not be substantially affected in the Project corridor during construction and operational activities. The 2015 Draft EIR identified that construction activities associated with the overall Project would not require the use of groundwater supplies. The need for dewatering is unlikely since maximum excavation depths of 10 feet bgs were identified for the proposed Project and existing groundwater levels are approximately 20 feet bgs or less in the South American subbasin and approximately 200 to 300 feet bgs in the North American subbasin. However, should dewatering be necessary, it would be minor and temporary.

Project operation would not require the use of groundwater. In addition, no dewatering activities are expected to occur as part of operation and maintenance activities. Groundwater recharge may be slightly affected by new impervious areas in small portions of the Project corridor (e.g., new platform, new bridge surfaces, track through urban areas). However, the main track will consist of compacted gravel, which will maintain perviousness and groundwater recharge capabilities along the Project corridor. Based on this information, the 2015 Draft EIR concluded impacts would be less than significant and no mitigation is required.

Railroad Bridge Crossings

Similar to what was identified in the 2015 Draft EIR, construction and operational activities associated with the railroad bridge crossings are not anticipated to substantially impact groundwater supplies and groundwater recharge as these crossings are located within an existing transportation corridor. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site would be located within an urbanized part of the City of Roseville. The site would be located within the existing rail ROW, which is developed with paved surfaces and railroad tracks. However, there are portions of the site that contain vegetated areas. Although the location of the passenger train layover facility has changed, it is anticipated that construction of the facility would require the same construction activities as those identified for the original passenger train layover facility. Similar to what was identified in the 2015 Draft EIR, construction and operational activities associated with the revised passenger train layover facility are not anticipated to substantially impact groundwater supplies and groundwater recharge. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.7-C	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. Result in a substantial erosion or siltation on- or off-site. ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite. iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. iv. Impede or redirect flood flows.

The 2015 Draft EIR identified that ground disturbance caused by construction activities could temporarily alter drainage patterns and would have the potential to increase erosion and sedimentation rates above existing conditions. The 2015 Draft EIR concluded that with BMPs and measures implemented in compliance with NPDES permit requirements, construction impacts associated with soil erosion would be reduced to a less than significant level.

Implementation of the proposed Project would result in a small increase in the amount of impervious surface area along portions of the Project corridor (e.g., new platform, new bridge surfaces). Because the Project features would result in only minor incremental changes in runoff, the proposed Project is not expected to substantially alter on- or offsite erosion or siltation. The 2015 Draft EIR concluded that this impact would be less than significant with no mitigation required.

The 2015 Draft EIR identified that the proposed Project would involve temporary alterations in drainage patterns in or near rivers, creeks, and storm drains. However, as specified in the SWPPP and permit requirements, construction activities in these areas would halt during rain events, and drainage would be properly diverted during utility relocations and earthwork to minimize obstructions and the potential for onsite or offsite flooding. The 2015 Draft EIR concluded that this impact would be less than significant with no mitigation required.

During operation, the proposed Project would result in a minor increase in impervious surface in the Project corridor. Accordingly, a minor increase in runoff is expected. This increase, however, would be less than significant when compared to the total flow in each storm drain and waterway, and would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff such that it might result in flooding on- or offsite. The 2015 Draft EIR concluded that this impact would be less than significant with no mitigation required.

The 2015 Draft EIR identified that a Project SWPPP would be prepared and BMPs would be implemented to protect water quality in the Project vicinity. Accordingly, construction of the proposed Project is not expected to substantially degrade water quality. The 2015 Draft EIR concluded that this impact would be less than significant with no further mitigation required.

As discussed in the 2015 Draft EIR, some storm drains may need to be relocated along the Project corridor, and new drainage features would be constructed. In addition, the proposed Project would result in a minor increase in impervious surfaces, slightly increasing the volume of runoff entering storm drains. However, the relocated storm drains would be sized appropriately to accommodate any additional runoff volumes. Potential additional sources of polluted runoff associated with increased impervious area would be minimized with implementation of BMPs, such as good housekeeping practices, in compliance with municipal stormwater requirements. The 2015 Draft EIR concluded that this impact would be less than significant with no further mitigation required.

Railroad Bridge Crossings

Similar to what was identified in the 2015 Draft EIR, construction and operational activities associated with the railroad bridge crossings are not anticipated to substantially alter the existing drainage pattern of the site that would result in erosion or siltation on- or off-site. The railroad bridge crossings are not located in a FEMA floodway and would not substantially increase the rate or amount of surface runoff that would exceed the capacity of existing or planned stormwater drainage systems, result in additional sources of polluted runoff, or increase the rate or amount of surface runoff that would result in flooding on- or offsite. Similar to what was identified in the 2015 Draft EIR, implementation of BMPs, such as good housekeeping practices, in compliance with municipal stormwater requirements, would reduce water quality impacts during construction and operational activities to a less then significant level. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site would be located within an urbanized part of the City of Roseville. The site would be located within the existing rail ROW, which is developed with paved surfaces, railroad tracks, vegetated areas, and buildings. Although the location of the passenger train layover facility has changed, it is anticipated that construction of the facility would require the same construction activities as those identified for the original passenger train layover facility. Similar to what was identified in the 2015 Draft EIR, construction and operational activities

associated with the revised passenger train layover facility are not anticipated to substantially alter the existing drainage pattern of the site that would result in erosion or siltation on- or off-site. The revised passenger train layover facility site is not located in a FEMA floodway and would not substantially increase the rate or amount of surface runoff that would exceed the capacity of existing or planned stormwater drainage systems, result in additional sources of polluted runoff, or increase the rate or amount of surface runoff that would result in flooding on- or offsite. Similar to what was identified in the 2015 Draft EIR, implementation of BMPs, such as good housekeeping practices, in compliance with municipal stormwater requirements, would reduce water quality impacts during construction and operational activities to a less then significant level. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.7-D	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation

As identified in the 2015 Draft EIR, the proposed Project is geographically removed from areas where the potential for inundation by seiche, tsunami, or mudflow could occur. Therefore, the 2015 Draft EIR concluded that no impacts would occur for this topic area.

Railroad Bridge Crossings

The replacement or realignment of the railroad bridge crossings would not be located in an area susceptible to inundation by seiche, tsunami, or mudflow. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction and operation of the revised passenger train layover facility is not located in an area susceptible to inundation by seiche, tsunami, or mudflow. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

3.8 Land Use and Planning

3.8.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to land use and planning, are identified in the 2015 Draft EIR (Chapter 3.10, Land Use and Planning). The regulatory framework for land use for this SEIR is the same as presented in 2015 Draft EIR.

3.8.2 Environmental Setting

Overall, the Project study area is heavily developed with commercial, industrial, and residential land uses along both sides of the Project corridor. The Project study area analyzed in the 2015 Draft EIR is generally linear. Pedestrian and bicycle crossing is limited over or under the railroad, and crossing the tracks in public or private motorized transportation is permitted only at designated overpasses and intersections.

Large portions of the Project study area consist of industrial land uses and large-scale retail outlets adjacent to the Project corridor. Residential neighborhoods and associated churches, schools, and parks are generally located farther from the railroad corridor, beyond the industrial and commercial uses. In the Sacramento County portion of the Project corridor, land uses are primarily residential, industrial, and recreational. Since the certification of the 2015 Final EIR, minor changes in land use have occurred along the Project corridor, specifically the completion of the McKinley Village residential development.

Partway through the Roseville Yard, the Project corridor crosses the county line into Placer County and the city of Roseville. As the railyard narrows, Dry Creek crosses beneath the ROW. In Roseville, the land uses on both sides of the rail corridor are predominantly residential and commercial. The 2015 Draft EIR did not identify any known agricultural or forestry resources in the Project corridor.

3.8.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.8-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

Table 3.8-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Land Use and Planning

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold LU-1: Physically divide an established community *Construction and Operation* The proposed Project would not physically divide an established community.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold LU-2: Conflict with any land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect *Construction and Operation* The proposed Project would not conflict with any land use plan, policy, or regulation of an agency with jurisdiction over the Project.	*Construction* No Impact *Operation* No Impact	Not Applicable	Not Applicable
Threshold LU-3: Conflict with any applicable habitat conservation plan or natural community conservation plan *Construction and Operation* There are no applicable habitat conservation plans or natural community conservation plans located within the Project corridor.	*Construction* No Impact *Operation* No Impact	Not Applicable	Not Applicable

THIS PAGE IS INTENTIONALLY BLANK.

3.8.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to land use and planning if it were to:

a) Physically divide an established community.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan.

3.8.5 Environmental Analysis

THRESHOLD 3.8-A	Physically divide an established community

The 2015 Draft EIR addressed the potential for new linear railroad infrastructure to result in the physical division of an established community and identified that the Project would be located almost entirely within the UPPR ROW, which already has established railroad infrastructure. The Project would require some property acquisitions including approximately 0.14 acre of land from the American River Parkway to construct the new bridge across the American River, approximately 0.04 to 0.09 acre of the parking lot at the corner of Lincoln Street and Pacific Street in downtown Roseville, and approximately 0.05 acre of the Moose Lodge parking lot at the corner of Lincoln Street and Sierra Boulevard in Roseville. However, because these three acquisitions would be adjacent to the existing ROW, the 2015 Draft EIR concluded that these acquisitions would not contribute to the physical division of an established community. Impacts were considered to be less than significant.

Railroad Bridge Crossings

The existing railroad bridge crossings are adjacent to industrial, commercial, and residential uses as well as vacant land. The replacement or realignment of the railroad bridge crossings would occur within an area designated for transportation uses and would not result in the physical division of an established community. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site contains similar adjacent land uses (e.g., a mix of residential, commercial, and industrial uses adjacent to the UPRR right of way) as those identified in the 2015 Draft EIR for the original passenger train layover facility site. It is anticipated that improvements proposed as part of the revised passenger train layover facility would be within the existing UPRR ROW. While there may be some existing uses within the UPRR ROW that would require removal (e.g., storage and processing of sand and gravel), such uses are not considered

to result in the physical division of an established community. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.8-B	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

The 2015 Draft EIR evaluated the potential for the Project against goals and policies identified in the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan (MTP), city and county general plans and municipal codes, and the American River Parkway Plan. Based on a review of these goals and policies, the 2015 Draft EIR concluded that the Project was consistent with the goals, policies, and implementation measures in the general plans for the cities and counties along the Project corridor, the SACOG MTP/SCS, and the American River Parkway Plan. Since the Project would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating and environmental effect, no impacts were identified.

Railroad Bridge Crossings

The railroad bridge crossings would remain consistent with the goals, policies, and implementation measures in the City of Sacramento General Plan, Sacramento County General Plan, the American River Parkway Plan, and the SACOG MTP/SCS as it would still improve public transportation and support the expansion of the Capitol Corridor rail service, which is the purpose of the Project. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site would remain consistent with the goals, policies, and implementation measures in the City of Roseville General Plan, Placer County General Plan, and the SACOG MTP/SCS as it would still improve public transportation and support the expansion of the Capitol Corridor rail service, which is the purpose of the Project. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.8-C	Conflict with any applicable habitat conservation plan or natural community conservation plan

The 2015 Draft EIR identified no applicable habitat conservation plans or natural community conservation plans apply to the Project corridor. The Project study area is outside the limits of the South Sacramento Habitat Conservation Plan and the Placer County Conservation Plan. Since there are no applicable habitat conservation plans or natural community conservation plans within the Project corridor, the 2015 Draft EIR concluded no impacts would occur.

Railroad Bridge Crossings

The replacement or realignment of the railroad bridge crossings is not located in an applicable habitat conservation plan or natural community conservation plan. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction and operation of the revised passenger train layover facility would not occur in an area governed by a habitat conservation plan or natural community conservation plan. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

3.9 Noise and Vibration

3.9.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to noise and vibration, are identified in the 2015 Draft EIR (Chapter 3.3, Noise and Vibration). The regulatory framework for noise and vibration for this SEIR is the same as presented in the 2015 Draft EIR.

3.9.2 Environmental Setting

The 2015 Final EIR addressed noise and vibration impacts associated with the introduction of new linear passenger rail infrastructure within an existing railroad right-of-way (ROW) owned, operated, and maintained by UPPR. As shown in Figure 3.9-1, noise and vibration measurements were performed at representative sensitive receivers in the Project corridor to establish the ambient noise levels at sensitive receivers and to characterize the noise and vibration from train events.

Eight long-term noise measurements which were performed over a duration of 24 hours, and 11 short-term vibration measurements, which included simultaneous noise measurements at six of the sites performed for durations ranging between one and two hours. These measurements were attended and details such as train type, track, and speeds were noted down during the measurements.

Based on the results, the existing dominant noise source in the Project corridor is the freight train noise from existing UPRR operations. During the 24-hour noise measurements, there were about 20 freight train events during the daytime hours (7 a.m. to 10 p.m.) and 20 freight train events during the nighttime hours (10 p.m. to 7 a.m.).

Existing passenger train traffic in the Project vicinity consists of two daytime CCJPA trains and two daytime California Zephyr trains (long-distance passenger heavy rail). The vibration measurement results showed that vibration levels decayed with distance at a similar rate along the entire Project corridor. Existing vibration levels from freight trains exceed the Federal Transit Administration (FTA)/Federal Railroad Administration (FRA) impact threshold of 72 VdB for Category 2 land uses (residential and other similar nighttime sensitive locations) that are within 200 feet of the existing tracks.

3.9.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.9-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

Figure 3.9-1. Noise Measurement Locations Map

Table 3.9-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Noise and Vibration

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold NOI-1: 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. *Construction and Operation* Noise-sensitive receivers are present within the impact distance for all construction scenarios. Construction and operational activities have the potential to exceed noise level standards at noise-sensitive receivers.	*Construction* Potentially Significant *Operation* Potentially Significant	*Construction* **Mitigation Measure NOI-1a: Implement Noise Control Plan and noise-reducing construction practices.** The construction contractor shall implement noise-reducing construction practices to limit construction noise to the maximum levels recommended by FTA. On days when work is limited to the hours of 7:00 a.m. to 10:00 p.m., the 1-hour Leq at any noise-sensitive receiver shall be limited to 77 dBA where feasible. On days when work will include nighttime activity, the 1-hour Leq at any noise sensitive receiver shall be limited to 69 dBA. The construction contractor shall prepare a Noise Control Plan that demonstrates how the contractor will comply with the noise limits specified above. Measures that can be implemented to control noise include but are not limited to the following. • Use specialty equipment with enclosed engines and/or high-performance mufflers. • Locate equipment and staging areas as far from noise-sensitive receivers as possible. • Limit unnecessary idling of equipment. • Install temporary noise barriers between noise sources and noise sensitive uses. • Route construction-related truck traffic away from residential streets to the extent permitted by the relevant jurisdiction. • Avoid impact pile driving when possible (the current construction plans do not include any impact pile driving). *Operation*	*Construction* Less than Significant *Operation* Less than Significant

Table 3.9-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Noise and Vibration

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Mitigation Measure NOI-1b: Relocate special trackwork farther from sensitive receivers or install low-impact frog. One of the two noise mitigation options below shall be implemented to reduce predicted noise levels near crossovers to below the FTA/FRA moderate noise impact threshold. • Relocate the special trackwork so that it is farther from sensitive receivers. • If the special trackwork cannot be relocated away from sensitive receivers, install a low-impact frog.	
Threshold NOI-2: Exposure of persons to, or generation of, excessive ground borne vibration noise levels. *Construction and Operation* Construction and operational activities, such as the use of tracked vehicles (e.g., bulldozers), drill rigs, and vibratory compactors, could result in perceptible levels of groundborne vibration.	*Construction* Potentially Significant *Operation* Potentially Significant	*Construction* **Mitigation Measure NOI-2a: Implement vibration-reducing construction practices.** In the event that vibration generated by soil compaction and other high-vibration construction processes cause vibration inside residences that is intrusive to building occupants, one or more of the measures below shall be implemented to reduce the potential for annoyance from construction vibration. • Avoid performing high-vibration construction activities such as soil compaction and pile driving near residences. For example, use drilled piles instead of impact pile driving. • Alert residents and building owners when there will be construction activities that could cause vibration amplitudes sufficient to be intrusive to building occupants. An understanding as to what is causing vibration can often reduce the potential for annoyance. • Provide residents and building owners a liaison to contact for reporting vibration levels that are annoying. If a sufficient number of complaints are made, measure the	*Construction* Less than Significant *Operation* Less than Significant

Table 3.9-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Noise and Vibration

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		vibration levels to determine if vibration reduction efforts are required. *Operation* **Mitigation Measure NOI-2b: Install low-impact frog Install a low-impact frog at the crossover near cluster R5.** A frog is the special insert used where two rails cross. Low-impact frogs are alternatives to typical frogs that provide a smoother transition through the gap in the rails, resulting in lower vibration levels. Examples of low impact frogs include monoblock frogs, flange-bearing frogs, and moveable point frogs.	
Threshold NOI-3: A substantial permanent increase ambient noise levels in the project vicinity above levels existing without the project. *Construction* Because construction would be temporary, it would not result in a permanent increase in ambient noise. *Operation* Permanent increases in train operational noise associated with implementation of the Project are predicted to result in moderate and severe noise impacts.	*Construction* Less than Significant *Operation* Potentially Significant	*Construction* Not Applicable *Operation* **Mitigation Measure NOI-1b: Relocate special trackwork farther from sensitive receivers or install low-impact frog.** **Mitigation Measure NOI-2b: Install low-impact frog.**	*Construction* Not Applicable *Operation* Less than Significant
Threshold NOI-4: A substantial temporary or periodic increase in ambient noise levels existing without the project *Construction*	*Construction* Potentially Significant	*Construction* **Mitigation Measure NOI-1a: Implement Noise Control Plan and noise-reducing construction practices.**	*Construction* Less than Significant *Operation*

Table 3.9-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Noise and Vibration

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Construction activities could result in temporary or periodic increases in noise levels that exceed the FTA construction noise threshold. *Operation* Increases in noise associated with Project operation would be permanent; there would be no temporary or periodic increases of existing ambient noise levels.	*Operation* Less than Significant	**Mitigation Measure NOI-1b: Relocate special trackwork farther from sensitive receivers or install low-impact frog.** *Operation* Not Applicable	Not Applicable
Threshold NOI-5: Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold NOI-6: Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels. *Construction and Operation* The proposed Project would not result in the construction or operation of rail infrastructure within the vicinity of a private airstrip.	*Construction* No Impact *Operation* No Impact	Not Applicable	Not Applicable

THIS PAGE IS INTENTIONALLY BLANK.

3.9.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to noise if it were to:

a) Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.

b) Expose persons to or generate excessive groundborne vibration or groundborne noise levels.

c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

e) Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels.

f) Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels.

3.9.5 Environmental Analysis

THRESHOLD 3.9-A	Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
THRESHOLD 3.9-C	Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
THRESHOLD 3.9-D	Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The 2015 Draft EIR addressed noise impacts associated with temporary construction activities which were anticipated to entail construction of bridges, overhead structures, and track work within the Project corridor. Predicted noise levels were calculated using general assumptions about the types of equipment likely to be used for different construction scenarios and duration of their operation. Table 3.9-2 shows the predicted “impact distance” based on FTA construction impact criteria for the various construction phases. Nighttime impact distance is greater than daytime distance because noise levels that are acceptable during the daytime are not acceptable at night when most people are sleeping.

Table 3.9-2. Predicted Impact Distances for Major Construction Phases

Construction Activity	Impact Distance (feet)	
	Daytime Construction[a]	Nighttime Construction[b]
Demolition, clearing, and grubbing	*130*	*320*
Install drainage improvements	*120*	*300*
Site grading	*130*	*310*
Foundation work	*140*	*360*
Retaining walls	*120*	*270*
Overhead structures	*160*	*400*
Trackwork	*160*	*400*
Construct signal	*90*	*220*
Construct bridge	*160*	*400*
Road crossing	*160*	*400*
Construct stations	*77*	*260*

Source: *ATS Consulting 2015*
Note: *The closest distance between the construction area and sensitive receivers receiver is 60 feet. Typical distance of sensitive receivers would range between 150 and 200 feet from the existing tracks.*
[a] *Impact distance is based on an impact occurring when the work shift Leq would exceed 77 dBA at a sensitive receptor for more than 30 days (equivalent to Ldn exceeding 75 dBA when there is limited construction during the nighttime hours of 10 p.m. to 7 a.m.). Estimated impact distances have been rounded off to the nearest 10 feet.*
[b] *Impact distance is based on an impact occurring when the work shift Leq would exceed 69 dBA at a sensitive receptor for more than 30 days (equivalent to Ldn exceeding 75 dBA when there is extensive construction during the nighttime hours of 10 p.m. to 7 a.m.). Estimated impact distances have been rounded off to the nearest 10 feet.*

As shown in Table 3.9-2, because the nighttime threshold is lower, and because sound attenuation is associated with distance, the impact of a given activity type would extend farther at night than in the daytime. A significant noise impact would occur at any residential receiver closer to the construction site than the “impact distance” shown in the table.

During construction, the impact distance of nighttime construction was much greater than the impact distance for daytime construction, resulting in more sensitive receptors being impacted during nighttime construction. The 2015 Draft EIR concluded that because noise-sensitive receivers are present within the impact distance for all construction scenarios, a significant noise impact would occur during construction. The inclusion of Mitigation Measures NOI-1a and NOI-1b, which requires compliance with FTA construction noise standards through the use of barriers,

setbacks, and other noise reduction methods, would result in impacts being reduced to a less than significant level at existing sensitive noise receptors.

The 2015 Draft EIR also addressed noise impacts associated with the increased operation of passenger trains within the Project corridor. The 2015 Draft EIR identified that project operation would increase noise levels at the five sensitive receptor clusters throughout the Project corridor (Sensitive Receiver Clusters R-5, R-52, I-9a, I-9b, and I-12). These locations are shown in Figure 3.9-1. Noise level increases would occur north and west of the existing tracks because the third track would be closer to the receivers than the existing tracks, and because CCJPA IPR service would increase from one round trip per day to 10 round trips per day. Existing freight operations would remain largely unchanged. At the sensitive receivers south and east of the existing tracks, there could be a slight increase in noise from additional train trips; however, would be offset by relocating existing passenger trains onto new track which is further away. The inclusion of Mitigation Measure NOI-1b, which requires relocation of special track work farther from sensitive receivers or to install a low-impact frog, would reduce operational impacts for existing sensitive receptors at these locations to a less than significant level.

The 2015 Draft EIR also addressed operational noise impacts associated with the proposed passenger train layover facility through various noise receiver cluster in the Project area including Clusters R-56 through R-61, which includes single-family residences located along Roseville Street, Tahoe Street, and Lincoln Street. The 2015 Draft EIR did not identify any moderate or severe noise impacts at Clusters R-56 through R-61.

Railroad Bridge Crossings

The railroad bridge crossings are adjacent to industrial, commercial, and residential uses as well as vacant land. It is anticipated that all railroad bridge crossings would have similar construction activities that could temporarily impact adjacent sensitive receptors. Mitigation Measure NOI-1a, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the noise impacts identified for sensitive residential receptors for the railroad bridge crossings. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure NOI-1a and NOI-1b would minimize potential construction impacts to sensitive receptors to a less than significant level.

The 2015 Draft EIR addressed operational noise impacts associated with the existing railroad bridge crossings through Sensitive Receiver Cluster I-9a and I-9b. Predicted operational noise impacts associated with the revised Project would be similar to the conclusions presented in the 2015 Draft EIR. Mitigation Measure NOI-1b, which was previously identified in the 2015 Final EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the noise impacts identified for sensitive residential receptors. Similar to what was originally identified in the 2015 Final EIR, implementation of Mitigation Measure NOI-1b would minimize potential operational impacts to sensitive receptors to a less than significant level. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility is adjacent to Old Town Roseville, located along the west leg of the UPRR wye track connecting the UP-Roseville Subdivision with the UP-Valley Subdivision. Land uses in this segment consist of residential, commercial, and industrial uses. Additionally, there are residential buildings that are located next to retail and commercial buildings in the area. Mitigation Measure NOI-1a, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the noise impacts identified for sensitive residential receptors for the revised passenger train layover facility. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure NOI-1a would minimize potential construction impacts to sensitive receptors to a less than significant level.

The 2015 Draft EIR also addressed operational noise impacts associated with the proposed passenger train layover facility through various noise receiver cluster in the Project area including Clusters R-56 through R-61, which includes single-family residences located along Roseville Street, Tahoe Street, and Lincoln Street.

Predicted operational noise impacts associated with the revised Project would be similar to the conclusions presented in the 2015 Draft EIR. Mitigation Measure NOI-1b, which was previously identified in the 2015 Final EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the noise impacts identified for sensitive residential receptors for the revised passenger rail layover facility. Similar to what was originally identified in the 2015 Final EIR, implementation of Mitigation Measure NOI-1b would minimize potential operational impacts to sensitive receptors to a less than significant level. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.9-B	Expose persons to or generate excessive groundborne vibration or groundborne noise levels.

The 2015 Draft EIR addressed the potential for vibration impacts associated with construction-related activities and the use of tracked vehicles (e.g., bulldozers), drill rigs, and vibratory compactors. However, these activities would be carried out for a short duration and would result in vibration levels well below thresholds for minor cosmetic damages to buildings. The 2015 Draft EIR concluded that vibration greater than 0.016 inches per second (in/sec) has the potential to result in annoying and intrusive vibration at nearby residences, resulting in a significant impact. To address potential vibration impacts during construction, the 2015 Draft EIR identified Mitigation Measure NOI-2a, which requires implementation of vibration-reducing construction practices. With implementation of Mitigation Measure NOI-2a, construction vibration impacts would be reduced to a less than significant level for existing sensitive receptors.

Railroad Bridge Crossings

The replacement or realignment of the existing railroad bridge crossings could result in a vibration level of 0.09 in/sec, which is greater than the 0.016 in/sec threshold for annoying and intrusive vibration. As such, a significant impact could occur at nearby residences during modifications associated with railroad bridge crossings.

Mitigation Measure NOI-2a, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the vibration impacts identified for sensitive residential receptors for the railroad bridge crossings. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure NOI-2a would minimize potential impacts to sensitive receptors to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction of the revised passenger train layover facility would involve site grading, foundation work, and trackwork along portions of the Project corridor that are adjacent to sensitive receptors. Specifically, vibration levels during construction could reach 0.21 in/sec, which is greater than the 0.016 in/sec threshold for annoying and intrusive vibration and would result in a significant impact.

Mitigation Measure NOI-2a, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would be implemented to address the vibration impacts identified for sensitive residential receptors. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure NOI-2a would minimize potential impacts to sensitive receptors to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.9-E	Be located within an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels.
THRESHOLD 3.9-F	Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels

The 2015 Draft EIR determined that a portion of the Project corridor is located at the south end of the McClellan Park Airport (approximately 4,300 feet in length) that would be exposed to aircraft noise in the range of 60-65 community noise equivalent level (CNEL); however, this level of sound exposure is not excessive and is consistent with noise levels associated with a typical urban environment. The 2015 Final EIR concluded that people working in the Project area during construction or operation would not be exposed to excessive noise levels associated with airport operations. Impacts would be less than significant with no mitigation required.

The 2015 Draft EIR also identified that the Project corridor was not located within the vicinity of a private airstrip. The nearest private airstrip to the Project corridor is the California Highway Patrol Academy Airport approximately 7 miles west. Since there are no private airstrips within the Project corridor, the 2015 Draft EIR concluded that implementation of the Project would not expose people residing or working in the Project corridor to excessive noise levels.

Railroad Bridge Crossings

The existing railroad bridge crossings are located approximately 4.5 miles southwest of the nearest McClellan Air Force Base CLUP boundary and approximately 5.3 miles east of the California Highway Patrol Academy Airport. Since the railroad bridge crossings are not located within the vicinity of a public or private airstrip, construction or operation of the revised Project would not result in the exposure of people working in the Project corridor to excessive noise levels. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility is located approximately 2.7 miles northwest of the nearest McClellan Air Force Base CLUP boundary with no private airstrips located within the vicinity of the revised passenger train layover facility. Since the revised passenger train layover facility is not located within the vicinity of a public or private airstrip, construction or operation of the revised Project would not result in the exposure of people working in the Project corridor to excessive noise levels. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

3.10 Population and Housing

3.10.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to population and housing are identified in the 2015 Draft EIR (Chapter 3.9, Population and Housing). The regulatory framework for population and housing for this SEIR is the same as presented in 2015 Draft EIR.

3.10.2 Environmental Setting

The 2015 Draft EIR addressed the changes in population growth between 2000 and 2010 to establish a baseline for the environmental analysis. Between 2000 and 2010, the growth rate in Sacramento and Placer County was 14.0 and 35.5 percent, respectively, which was greater than the overall growth rate for the State of California (8.20 percent). Since the certification of the 2015 Final EIR, the U.S. Census Bureau has published updated population and housing data for the year 2020. As shown in Table 3.10-1, between 2010 and 2020, the population within all geographic areas has continued to grow. The growth rate in Sacramento and Placer County was 13.9 percent and 22.5 percent, respectively, which was greater than the overall growth rate for the State of California (7.1 percent).

Table 3.10-1. Regional and Local Population Change Since the 2015 Draft EIR

Geographic Area	Population			2000 – 2010 Population Change	2010 – 2020 Population Change
	2000	2010	2020		
City of Roseville	79,921	113,977	151,902	+ 42.6%	+ 33.3%
City of Sacramento	407,018	466,488	525,028	+ 14.6%	+ 12.5%
Placer County	248,399	336,477	412,300	+ 35.5%	+ 22.5%
Sacramento County	1,223,499	1,395,144	1,588,921	+ 14.0%	+ 13.9%
State of California	33,871,648	36,637,290	39,237,836	+ 8.2%	+ 7.1%

Source: Sacramento to Roseville Third Main Track 2015 Draft EIR, U.S. Census Bureau 2020.

3.10.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.10-2 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR.

THIS PAGE IS INTENTIONALLY BLANK.

Table 3.10-2. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Population and Housing

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold POP-1: Result in displacement of a large number of people, housing, or businesses, necessitating the construction of replacement housing or business space elsewhere. *Construction and Operation* The proposed Project would not result in displacement of a large number of existing housing or businesses that would necessitate the construction of replacement facilities elsewhere.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold POP-2: Potential to induce substantial population growth either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure) *Construction and Operation* The proposed Project would not increase the overall growth in the communities served that the Project would provide transit services to.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable
Threshold POP-3: Potential to cause a substantial change in local employment or the labor force (e.g., through extension of roads or other infrastructure) *Construction* Project construction would require up to 100 construction workers to be working at any given time. However, it is anticipated that these workers would come from the local labor force and not result in a substantial change in local employment or the labor force. *Operation*	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable

Table 3.10-2. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Population and Housing

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Project operation would provide more options for commuters who already travel within the Project corridor and would not cause a substantial change in local employment or the labor force.			
Threshold POP-4: Potential to result in a substantial reduction in community cohesion *Construction and Operation* The construction and operation of a new main track and other rail infrastructure features would occur within the established rail ROW and is not anticipated to impact community character of cohesion in the area.	*Construction* Less than Significant *Operation* Less than Significant	Not Applicable	Not Applicable

3.10.4 Thresholds of Significance

In accordance with Appendix G of the 2023 CEQA Guidelines, the revised Project would have a significant impact related to population and housing if it were to:

a) Result in displacement of a large number of people, housing, or businesses, necessitating the construction of replacement housing or business space elsewhere, or

b) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure).

The 2015 Draft EIR also included two additional thresholds as part of the population and housing analysis. The revised Project would also have a significant impact related to population and housing if it were to:

c) Cause a substantial change in local employment or the labor force (e.g., through extension of roads or other infrastructure), or

d) Result in a substantial reduction in community cohesion.

3.10.5 Environmental Analysis

THRESHOLD 3.10-A	Displacement of a large number of people, housing, or businesses, necessitating the construction of replacement housing or business space elsewhere.

The 2015 Draft EIR disclosed that property acquisitions would be required for the proposed Project. These property acquisitions would be in the form of partial acquisitions which would include approximately 0.14 acre of land from the American River Parkway, 0.04 to 0.09 acre from the parking lot at the corner of Lincoln Street and Pacific Street in downtown Roseville, and approximately 0.05 acre of the Moose Lodge parking lot from the corner of Lincoln Street and Sierra Boulevard in Roseville. The 2015 Draft EIR concluded that the land to be acquired would not result in the displacement of existing housing or businesses that would necessitate the construction of replacement facilities elsewhere and impacts would be less than significant.

Railroad Bridge Crossings

Although the railroad realignment is subject to approval by Union Pacific Railroad, this supplemental analysis provides a conservative assumption that acquisitions may be required adjacent to the existing railroad. The replacement and realignment of the existing railroad bridge crossings would require the construction of temporary shoofly structures in order to maintain railroad operations during construction. Based on preliminary design for the railroad bridge crossings, up to six full parcel acquisitions, three partial acquisitions and three temporary

construction easements (TCEs) located adjacent to the existing railroad right-of-way would be required.

No housing or businesses would be displaced with the replacement and realignment of the Elvas railroad bridge crossings. However, the replacement and realignment of the B Street railroad bridge crossing would require the demolition of buildings that would result in an impact to one business (Extra Space Storage) and existing Caltrans maintenance yard facilities.

Extra Space Storage is a self-storage facility located at 3000 B Street, at the corner of Alhambra Boulevard and B Street, east of Business I-80. The reconstruction of the B Street railroad bridge crossing would require the acquisition and demolition of an existing building on the north side of the Extra Space Storage parcel adjacent to the railroad tracks. Although this existing building would be demolished, it is anticipated that the remaining building on the property would remain, the existing self-storage activities would continue to operate and that the business would not be required to relocate.

Acquisition and demolition of Caltrans maintenance yard facilities may also be required to provide adequate space for the ballast of the new permanent railroad alignment or required for the temporary railroad shoofly and retaining walls. To accommodate the proposed railroad work, two warehouse buildings (approximately 6,000 and 21,000 square feet) owned and operated Caltrans would be demolished. Based on coordination with Caltrans, maintenance activities and employees at the existing Caltrans maintenance yard facility would be relocated to other Caltrans maintenance facilities.

Based on the information provided, these property acquisitions would not result in the displacement of existing housing or businesses that would necessitate the construction of replacement facilities elsewhere. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant.

Passenger Train Layover Facility

Construction of the revised passenger train layover facility would occur within existing UPRR ROW which would require the removal of uses associated with two existing UPRR tenants, Hanford Sand and Gravel and Autonation. The area that would revert back to UPRR uses is currently utilized for processing and storage of sand and gravel materials (Hanford Sand and Gravel) and for parking (Autonation). It is anticipated that operations associated with Hanford Sand and Gravel would shift over to their Elk Grove location. Operational activities would include the maintenance of existing rail infrastructure and the layover yard building. Implementation of the revised Project would not result in additional land to be acquired as the revised passenger train layover facility would occur within existing UPRR ROW. The revised Project would not result in the displacement of existing housing or a substantial number of businesses that would necessitate the construction of replacement facilities elsewhere. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR. Impacts would remain less than significant.

THRESHOLD 3.10-B	Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)
THRESHOLD 3.10-C	Cause a substantial change in local employment or the labor force (e.g., through extension of roads or other infrastructure)

The Project analyzed in the 2015 Draft EIR does not include the development of new homes or businesses. New infrastructure, primarily a third main track between Sacramento and Roseville, is not anticipated to indirectly influence population growth because it will provide an alternative travel mode along the corridor without increasing projected commuter numbers. The 2015 Draft EIR identified that increased passenger rail service would result in fewer passenger car trips between Sacramento and Roseville because commuters who already travel between the two cities would have the option to travel by train rather than passenger car. Therefore, the 2015 Draft EIR concluded that the proposed Project would not result in an increase in the overall growth pressure in the communities served by the Project and growth-inducing impacts would be less than significant.

The 2015 Draft EIR identified that Project construction would require up to 100 construction workers to be working at any given time throughout the Project corridor. However, it is anticipated that these workers would come from the local labor force and not result in a substantial change in local employment or the labor force. Project operation would provide more options for commuters who already travel within the Project corridor and would not cause a substantial change in local employment or the labor force. The 2015 Draft EIR concluded that impacts would be less than significant.

Railroad Bridge Crossings

Similar to what was identified in the 2015 Draft EIR, construction activities associated with the railroad bridge crossings are not anticipated to induce substantial unplanned population growth, as construction activities are temporary and would be filled by those who reside within the region. Operation of the revised Project component would not result in changes in land use that would result in or indirectly influence population growth. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Construction activities that are associated with the revised passenger train layover facility are not anticipated to induce substantial unplanned population growth, as construction activities are temporary and would be filled by those who reside within the region. Operation of the revised Project components would not result in changes in land use that would result in or indirectly influence population growth. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.10-D	Result in a substantial reduction in community cohesion.

The 2015 Draft EIR addressed the potential for new linear railroad infrastructure to result in the physical division of an established community and identified that the Project would be located almost entirely within the UPPR ROW, which already has established railroad infrastructure. The Project would require some property acquisitions including approximately 0.14 acre of land from the American River Parkway to construct the new bridge across the American River, approximately 0.04 to 0.09 acre of the parking lot at the corner of Lincoln Street and Pacific Street in downtown Roseville, and approximately 0.05 acre of the Moose Lodge parking lot at the corner of Lincoln Street and Sierra Boulevard in Roseville. However, because these three acquisitions would be adjacent to the existing ROW, the 2015 Draft EIR concluded that these acquisitions would not contribute to the physical division of an established community or result in changes of community character or cohesion in the Project study area. Impacts were considered to be less than significant.

Railroad Bridge Crossings

The existing railroad bridge crossings are adjacent to industrial, commercial, and residential uses as well as vacant land. The replacement or realignment of the railroad bridge crossings would occur within an area designated for transportation uses and would not result in the physical division of an established community or result in changes of community character or cohesion in the Project study area. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility site contains similar adjacent land uses (e.g., a mix of residential, commercial, and industrial uses adjacent to the UPRR right of way) as those identified in the 2015 Draft EIR for the original passenger train layover facility site. It is anticipated that improvements proposed as part of the revised passenger train layover facility would be within the existing UPRR ROW. While there may be some existing uses within the UPRR ROW that would require removal (e.g., storage and processing of sand and gravel), such uses are not considered to result in the physical division of an established community or result in changes of community character or cohesion in the Project study area. Therefore, the revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

3.11 Traffic and Transportation

3.11.1 Regulatory Framework

The regulatory framework, which includes applicable state and local laws, regulations, and plans relative to noise and vibration, are identified in the 2015 Draft EIR (Chapter 3.1, Traffic and Transportation). The following regulatory policies and documents have been updated since the certification of the 2015 Draft EIR.

State

Senate Bill 743

Subsequent to the certification of the 2015 Final EIR, the California Legislature adopted amendments to CEQA (Public Resources Code [PRC] §21099) directing the Office of Planning and Research to develop and adopt amendments to the CEQA Guidelines using alternative measures for transportation impacts.

Senate Bill (SB) 743 establishes criteria for determining the significance of transportation impacts using a vehicle miles traveled (VMT) metric intended to promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses. Specifically, SB 743 requires analysis of VMT in determining the significance of transportation impacts. Local jurisdictions were required by Governor's Office of Planning and Research (OPR) to implement a VMT policy by July 1, 2020.

SB 743 did not authorize OPR to set specific VMT impact thresholds, but it did direct OPR to develop guidelines for jurisdictions to utilize. CEQA Guidelines Section 15064.3(b)(1) describes factors that might indicate whether a development project's VMT may be significant. Notably, projects located within 0.50 mile of transit should be considered to have a less than significant transportation impact based on OPR guidance

The 2015 Final EIR conducted traffic analysis based on the anticipated changes to the existing modal transportation network as a result of project implementation prior to the application of CEQA Guidelines §15064.3 and SB 743.

Regional

Sacramento Area Council of Governments 2020 Congestion Management Process Update

Sacramento Area Council of Governments (SACOG)'s Congestion Management Process (CMP) is a systematic and regionally accepted approach for managing congestion that provides updated information on transportation system performance and assesses alternative strategies for congestion management that meet state and local needs (SACOG 2020). The Federal Highway Administration (FHWA) requires all metropolitan regions with a population of more than 200,000

to maintain a CMP. SACOG's 2020 CMP is part of its MTP/SCS and is updated every four years, in alignment with its MTP/SCS updates.

SACOG updated the CMP objectives for 2020 using the following principles:

- Follow policies and principles in SACOG's adopted 2020 MTP-SCS
- Align with the performance outcomes specified in SACOG's Funding Round
- Have review and agreement on objectives from members of the CMP Working Group
- Utilize the following approaches to address congestion, in descending order of priority:
    - Provide alternatives to traveling in congested conditions, such as telework, transit, cycling, carpooling, etc.
    - Reduce the distance people need to travel in congested conditions through promoting land use strategies that enable people to meet their travel needs with shorter trips.
    - Gain more effective capacity on existing roadways through softer, operational measures like real-time information, ramp metering, and other ITS-based solutions.
    - Where other strategies do not sufficiently address congestion, construct additional capacity.

With these principles in mind, the objectives of the 2020 CMP are:

1. Maintain or improve travel time reliability for freight and passenger vehicles
2. Reduce traffic congestion for freight and passenger vehicles
3. Promote development that encourages making trips by public transit
4. Support proactive and innovative education and transportation demand management programs, covering all parts of the urbanized area, to offer a variety of choices to driving alone
5. Prioritize investments in transit, bike, and pedestrian improvements that reduce greenhouse gas emissions and vehicle miles traveled (VMT)
6. Implement pilot projects aimed at making micro mobility (such as bike and scooter share) work for urban, suburban, and low-income areas of the region.

The defined transportation network for the CMP was developed as a subset of the National Highway System (NHS) roadway network by identifying segments that met the average daily volume above thresholds based on Caltrans functional classification groupings. Additionally, the CMP has incorporated subset of transit routes that are relevant to the CMP roadway network are determined by a combination of relatively high ridership and proximity to the draft CMP roadway network. The CCPJA-operated, AMTRAK Capitol Corridor has been identified in the CMP as a CMP Priority Transit Route. Additionally, all passenger rail lines are included, as well as local bus routes serving more than 800 weekday boardings, and commuter buses averaging more than 20 weekday boardings per bus trip, with at least part of their service on the CMP road network.

2020 Metropolitan Transportation Plan/Sustainable Communities Strategy

The 2015 Draft EIR included a consistency analysis of the 2012-2035 *Metropolitan Transportation Plan/Sustainable Communities Strategy* (2016 MTP/SCS), which was the current regional transportation plan for the SACOG region at the time of 2015 Final EIR certification. Consistency with the MTP/SCS is critical for maintaining consistency with Senate Bill (SB) 375, which establishes reductions targets or automobiles and light trucks.

Subsequent to the certification of the 2015 Final EIR, and as required by law, SACOG adopted the 2020 MTP/SCS on November 18, 2019, which provides updates to the MTP/SCS and integrates land use, air quality, and transportation needs within the region through the year 2040. Both the 2016 MTP/SCS and the 2020 MTP/SCS identify the Project within the adopted MTP/SCS project list (SACOG 2012; 2019).

Local

Placer County Transportation Study Guidelines

The Transportation Study Guidelines were published in November 2020 and are intended to provide a clear and consistent technical approach to preparing Transportation Studies in Placer County. They establish analysis techniques for transportation studies based on the current state-of-the-practice in transportation planning and engineering (Placer County 2020). For example, the Transportation Study Guidelines set forth a number of screening criteria that can be used to quickly identify whether sufficient evidence exists to presume a project will have a less than significant VMT impact without conducting a detailed study.

Active transportation projects, which are defined as projects involving active transportation such as bicycle paths, walking paths or sidewalks, and public transit can be presumed to have a less than significant VMT impact, absent substantial evidence that the project will lead to a significant impact.

County of Sacramento General Plan

The 2015 Final EIR provided a consistency analysis associated with the Sacramento County General Plan. Supporting policies included conducting planning for roads, parking, clean alternative fuel and low emission vehicles, and other methods consistent with achieving air quality

goals; conducting land use and transportation planning with a regional perspective; and mitigating new development traffic impacts.

On October 7, 2020, the Sacramento County Board of Supervisors approved an amendment (Resolution Number 2020-0652) to the Sacramento County General Plan's Circulation Element to establish VMT significance thresholds as the metric to be utilized in order to analyze traffic impacts. For regional public facilities/services Goals and policies of the Sacramento County General Plan relating to traffic, circulation and transportation applicable to the revised Project are listed below:

Goal CI-3. Travel modes shall be interconnected to form an integrated, coordinated, and balanced multi-modal transportation system, planned and developed consistent with the land uses to be served.

Goal CI-5. Land use and transportation planning and development should be cohesive, mutually supportive, and complement the objective of reducing per capita vehicle miles travelled (VMT). The standards shown in Table CI-1 shall be used as thresholds of significance for all projects subject to CEQA. Where the VMT level standards of Table CI-1 are predicted to be exceeded, all feasible mitigation measures shall be included to reduce projected VMT levels.

County of Sacramento Transportation Analysis Guidelines

On October 6, 2020, the Board of Supervisors adopted revised significance thresholds for CEQA transportation analysis using VMT, in compliance with SB 743. In conjunction with OPR, the County's Department of Transportation has updated the Transportation Analysis Guidelines (TAG) to provide guidance on VMT analysis. The TAG outlines screening criteria, by which projects may be exempted from VMT analysis. If screening criteria are not met, a proponent must analyze the project's VMT, using methodologies outlined in the TAG. If a project is found to have a significant impact, VMT-reducing mitigation will be required (County of Sacramento 2010). The revised Project meets the TAG exemption as the overall Project was already analyzed in a prior certified EIR.

City of Roseville General Plan 2035

The 2035 General Plan for the City of Roseville was adopted by the Roseville City Council on August 5, 2020 and addresses recent State legislation. The 2035 General Plan serves as a long-term policy guide for physical, economic, and environmental growth. It is a statement of the community's vision of its ultimate physical growth. Policy CIRC3.4 within the Circulation Element, is to support and remain actively involved in planning for the expansion of Capitol Corridor rail service, as well as other regional linkages.

3.11.2 Environmental Setting

For the purposes of evaluating existing conditions and traffic impacts associated with Project implementation, the study area is defined as three areas surrounding the Sacramento Valley Station, the vicinity of the two at-grade crossings in the northeast portion of downtown Sacramento, and the vicinity of the Roseville Station. Details on existing transportation features and services (e.g., streets and highways, rail crossings, public transit, bicycle facilities, and pedestrian facilities) within the study area are provided in the 2015 Draft EIR (Chapter 3.1, Traffic and Transportation).

3.11.3 Summary of Prior Analysis

To provide a basis for the SEIR evaluation, Table 3.11-1 summarizes the impacts, relevant mitigation measures, and CEQA environmental determinations before and after implementation of mitigation as reflected in the 2015 Draft EIR**.**

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Threshold TRA-1: Generation of VMT level greater than accounted for in the MTP/SCS. *Construction and Operation* The project would not result in generation of VMT greater than accounted for in the MTP/SCS.	*Construction* No Impact *Operation* Beneficial Impact	Not Applicable	Not Applicable
Threshold TRA-2: Construction-related disruption of existing traffic patterns. *Construction* While most of the construction activity would occur within the UPRR right-of-way (ROW), construction of certain elements (e.g, construction of railroad bridges crossing I-80, SR-160, the American River Bike Trail, Exposition Boulevard, Watt Avenue and the third track at the 20th and 28th Street at-grade crossings could affect drivers, transit service users, bicyclists, and pedestrians during construction activities.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** CCJPA, in coordination with UPRR, shall prepare site-specific TMPs for each road crossing prior to the initiation of construction. UPRR shall be responsible for project management or may contract with one or more construction management firms to in ensure that construction contractors' crews and schedules are coordinated and that the plans and TMP specifications are being followed. The TMPs shall address the specific steps to be taken before, during, and after construction to minimize transportation impacts on all modes, including the mitigation measures and environmental commitments identified in this environmental document. Such measures include but are not limited to signage, flagging, limits on periods of closure, and provision for passage of emergency vehicles during construction. UPRR shall be responsible for developing the TMPs in consultation with the applicable transportation entities listed below. • Caltrans for state and federal roadway facilities. • Local agencies including City of Sacramento, County of Sacramento, City of Citrus Heights, and City of Roseville for local transportation facilities such as roads and bike paths.	*Construction* Less than Significant with Mitigation Incorporated *Operation* Not Applicable

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Operation The project would not result in disruption of existing traffic patterns during operational activities.		• Transit providers, including but not limited to, Regional Transit and Roseville Transit. • Rail operators. • U.S. Coast Guard. • City and county parks departments. • California Department of Parks and Recreation (DPR) for work in the American River Parkway. UPRR shall ensure that the TMPs are implemented prior to beginning construction at any given site, including in-water construction sites. If necessary to minimize unexpected operational impacts or delays experienced during real-time construction, UPRR shall be responsible for modifying the TMP in coordination with the appropriate transportation entities to address these effects. Each TMP shall include the following provisions, as applicable to the conditions. • Description and deployment of signage warning of roadway surface conditions such as loose gravel, steel plates, or similar conditions that could be hazardous to road cycling activity on roadways open to bicycle traffic. • Description and deployment of signage and barricades to be used around the work sites. • Description and deployment of buoys, signage, or other effective means to warn boaters of in-water work areas and restrictions on access. Description of warning devices and signage (e.g., buoys labeled “boats keep out” or “no wake zone”) in compliance with U.S. Coast Guard Private Aid to Navigation requirements and effective during non-daylight hours and periods of dense fog.	

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Use of flag people or temporary traffic signals/signage as necessary to slow or detour traffic. • Notifications for the public, emergency service providers, cycling organizations, bike shops, schools, the U.S. Coast Guard, boating organizations, marinas, city and county parks departments, and DPR, where applicable, describing construction activities that could affect transportation and water navigation. • Outreach (through public meetings and/or flyers and other advertisements). • Procedures for construction area evacuation in the case of an emergency declared by county or other local authorities. • Designation of alternate access routes via detours and bridges to maintain continual circulation for local travelers in and around construction zones, including bicycle riders, pedestrians, and boaters, where applicable. • Description of construction staging areas, material delivery routes, and specification of construction vehicle travel hour limits. • Notifications to commercial and leisure boating communities of proposed operations in the waterways, including posting notices at local marinas and public launch ramps. This information shall provide details regarding construction site location(s); construction schedules; and identification of no-wake zones, speed-restricted zones, and detours, where applicable • No-wake zones and speed restrictions shall be established as part of development of the site-specific plans and shall be	

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		designated to protect the safety of construction workers and recreationists. • Scheduling for oversized material deliveries to the work site to minimize peak hour traffic conflicts, and location of haul routes. • Provisions that direct haulers pull over in the event of an emergency. If an emergency Vehicle is approaching on a narrow two-way roadway, specify measures to ensure that appropriate maneuvers shall be conducted by the construction vehicles to allow continual access for the emergency vehicles at the time of an emergency. • Control for any temporary road closure, detour, or other disruption to traffic circulation, including any temporary partial closures of the water channel. • Designation and posting of offsite vehicle staging and parking areas. • Posting of information for contact in case of emergency or complaint. • Designation of daily construction time windows during which construction is restricted or rail operations would need to be suspended for any activity within the UPRR ROW. • Coordination with rail providers (i.e., Amtrak, UPRR) to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures. • Coordination with transit providers (i.e., RT, Roseville Transit) to develop, where feasible, daily construction time windows during which transit operations would not be either detoured or substantially slowed.	

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		• Routine posting of information to the 511.org website regarding construction delays and detours • Other actions to be identified and developed as necessary by the construction manager/resident engineer to ensure that temporary impacts on transportation facilities are minimized. *Operation* Not Applicable	
Threshold TRA-3: Generation of future parking demand that would exceed available supply in the vicinity of the Sacramento Valley Station or Roseville Station *Construction* Construction workers would not use station parking facilities. There would be no construction related impacts associated with generation of future parking demand. *Operation* Operation of the proposed Project could exacerbate parking shortfalls in downtown Roseville.	*Construction* Less than Significant *Operation* Potentially Significant	*Construction*	*Construction* Not Applicable *Construction* Less than Significant with Mitigation Incorporated

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
		Not Applicable. *Operation* **Mitigation Measure TRA-3: Provide sufficient all-day and multi-day parking supply at the Roseville Station as Capitol Corridor service expands.** CCJPA shall provide sufficient all-day and multi-day parking supply at the Roseville Station, preferably within a 5-minute walk, as CCJPA IPR service expands. This determination shall consider shared parking opportunities with adjacent land uses and would be made in consultation with the City of Roseville. Project completion is anticipated to occur in conjunction with increased economic activity (e.g., funding availability) and as land use development occurs in the DSP area. Parking is currently available near the Roseville Station, in surface lots near City Hall, and at the City's parking garage south of the UPRR tracks. CCJPA shall inform the City of Roseville about the timing of potential service expansion opportunities and the projected parking demand. CCJPA shall support efforts by the City to obtain grant or other funding that is necessary to construct parking supply or station access improvements.	
Threshold TRA-4: Extension of vehicle queues at crossings beyond available storage on the public roadway approaches. *Construction* Construction activities could contribute to short-term vehicle queues at the 20th and 28th	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** *Operation* Not Applicable	*Construction* Less than Significant with Mitigation Incorporated *Operation* Not Applicable.

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Street at-grade crossings while construction activities are underway at those locations. *Operation* During operation, little to no traffic growth is projected at 20th or 28th Street. Queuing conditions are not anticipated to result in extension of vehicle queues at crossings beyond available storage on public roadway approaches.			
Impact TRA-5: Disruption of existing public transit service or interference with the implementation of planned public transit services *Construction* Construction activity could contribute to short-term transit service disruptions at existing stations. *Operation* Operation of the proposed Project is designed to integrate into existing and future operations at the Sacramento Valley and Roseville Stations. Implementation of the proposed	*Construction* Potentially Significant *Operation* Less than Significant	*Construction* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** *Operation* Not Applicable	*Construction* Less than Significant with Mitigation Incorporated *Operation* Not Applicable

Table 3.11-1. Summary of 2015 Draft EIR Impacts and Proposed Mitigation Measures – Traffic and Transportation

Potential Environmental Impact	Significance Determination (Before Mitigation)	Proposed Mitigation Measures	Significance Determination (After Mitigation)
Project would not interfere with existing or planned public transit service.			
Impact TRA-6: Disruption of existing bicycle and pedestrian facilities or interference with the implementation of planned facilities. *Construction* Construction activity could contribute to short-term disruptions to bicycle and pedestrian facilities, especially near stations and in the American River Parkway. *Operation* Operation of the proposed Project would not affect existing or future bicycle or pedestrian facilities.	*Construction* Potentially Significant *Operation* No Impact	*Construction* **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** *Operation* Not Applicable	*Construction* Less than Significant with Mitigation Incorporated *Operation* Not Applicable

3.11.4 Thresholds of Significance

It is standard practice for an SEIR to use the same transportation analysis as the certified EIR that precedes it in order to ensure consistency in comparison and control for changes resulting from only the project modifications. However, given that the publication of this document follows the July 1, 2020, date on which CEQA Guidelines §15064.3 and SB 743 apply, this Draft SEIR applies VMT as the determining factor for CEQA impacts and does not consider LOS traffic delay to be an environmental impact under CEQA. The revised Project would have a significant impact related to traffic and transportation if it were to:

a) Generate more VMT than accounted for in the MTP/SCS.

b) Cause traffic delays or detours during construction activities.

c) Generate future parking demand that exceeds available supply in the vicinity of the Sacramento Valley Station or Roseville Station.

d) Causes vehicle queues at crossings to extend beyond available storage on the public roadway approaches.

e) Disrupts existing public transit service or interferes with the implementation of planned public transit services.

f) Disrupts existing bicycle and pedestrian facilities or interferes with the implementation of planned facilities.

3.11.5 Environmental Analysis

THRESHOLD 3.11-A	Generate more VMT than accounted for in the MTP/SCS.

The 2015 Draft EIR addressed the Project's consistency with VMT forecasts presented in the SACOG 2016 MTP/SCS, as well as addressed consistency with relevant planning documents for the cities of Roseville and Sacramento, and the counties of Placer and Sacramento. The 2015 Draft EIR concluded that construction of the proposed Project would not result in any long term changes in vehicular traffic with no significant increases in VMT during construction activities. The proposed Project is also included in the 2035 MTP/SCS and is part of the regional solution for minimizing GHG emissions from cars and light trucks. The 2015 Draft EIR identified that operation of the proposed Project would not generate more VMT than accounted for in the 2035 MTP/SCS and ultimately reduce VMT in the region by nearly 12 million VMT when compared to existing conditions, resulting in a beneficial impact.

Railroad Bridge Crossings

The 2015 Draft EIR identified no long term changes in vehicular traffic associated with construction activities for the proposed Project, including the existing railroad bridge crossing located near the UPRR wye. The type of modifications proposed as part of the revised Project for

the other railroad bridge crossings are similar to those originally identified in the 2015 Draft EIR. Modifications to the existing railroad bridge crossings would have similar construction activities that would not result in long term changes in vehicular traffic and are not anticipated to result in VMT impacts. Operation of the revised Project would not generate more VMT than accounted for in the 2035 MTP/SCS. In addition, the revised Project would still contribute to an overall reduction of 12 million VMT in the region when compared to existing conditions, resulting in a beneficial impact. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility would not increase passenger train frequency beyond the additional service evaluated in the 2015 Draft EIR. Implementation of the revised Project would result in the relocation of the proposed passenger train layover facility. The revised passenger train layover facility would have similar construction activities that would not result in long term changes in vehicular traffic and is not anticipated to result in VMT impacts. Operation of the revised Project would not generate more VMT than accounted for in the 2035 MTP/SCS. In addition, the revised Project would still contribute to an overall reduction of 12 million VMT in the region when compared to existing conditions, resulting in a beneficial impact. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.11-B	Cause traffic delays or detours during construction activities.

As identified in the 2015 Draft EIR, construction of the proposed Project would require the grading and installation of new subgrade and drainage, placement of new rail and ties, special track work with turnouts, crossovers, and associated switches and equipment, installation of new wayside track signals, construction of new railroad bridges and a new bridge across the American River in Sacramento. While most of the construction activity would occur within the UPRR right-of-way (ROW) and would not affect the physical or operational condition of the transportation network, the certain construction elements could cause short-term impacts on local transportation networks including but not limited to:

- Construction of railroad bridges crossing Business I-80, SR 160, the American River Bike Trail, Exposition Boulevard, and Watt Avenue.
- Construction of a new bridge across the American River.
- Construction of a third track at the 20th and 28th Street at-grade crossings.

Disruptions and delays could affect drivers, transit service/riders, bicyclists, pedestrians, and American River users. These disruptions and delays would likely be caused by the movement of construction employees, equipment, and materials. The 2015 Draft EIR identified that with

implementation of Mitigation Measure TRA-2, which requires implementation of site specific construction traffic management plans, impacts during construction activities would be reduced to a less than significant level.

Railroad Bridge Crossings

Modifications to the existing railroad bridge crossings would not change the type of construction activities previously identified in the 2015 Draft EIR. The replacement or realignment of the existing railroad bridge crossings would require still require the movement of construction employees, equipment, and materials within the Project area, which may cause temporary disruptions or delays within the existing transportation network. Mitigation Measure TRA-2, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would still be implemented.

Based on additional input provided during the public review of the Draft SEIR, a minor modification to Mitigation Measure TRA-2 related to the agency responsible for improvements within the American River Parkway has been made as follows:

> **Mitigation Measure TRA-2: Implement site-specific construction traffic management plan (TMP).** CCJPA, in coordination with UPRR, shall prepare site-specific TMPs for each road crossing prior to the initiation of construction. UPRR shall be responsible for project management or may contract with one or more construction management firms to in ensure that construction contractors' crews and schedules are coordinated and that the plans and TMP specifications are being followed. The TMPs shall address the specific steps to be taken before, during, and after construction to minimize transportation impacts on all modes, including the mitigation measures and environmental commitments identified in this environmental document. Such measures include but are not limited to signage, flagging, limits on periods of closure, and provision for passage of emergency vehicles during construction. UPRR shall be responsible for developing the TMPs in consultation with the applicable transportation entities listed below.
>
> - Caltrans for state and federal roadway facilities.
> - Local agencies including City of Sacramento, County of Sacramento, City of Citrus Heights, and City of Roseville for local transportation facilities such as roads and bike paths.
> - Transit providers, including but not limited to, Regional Transit and Roseville Transit.
> - Rail operators.
> - U.S. Coast Guard.
> - City and county parks departments.
> - ~~California Department of Parks and Recreation (DPR)~~ Sacramento County Department of Regional Parks for work in the American River Parkway.
>
> UPRR shall ensure that the TMPs are implemented prior to beginning construction at any given site, including in-water construction sites. If necessary to minimize unexpected operational impacts or delays experienced during real-time construction, UPRR shall be

responsible for modifying the TMP in coordination with the appropriate transportation entities to address these effects.

Each TMP shall include the following provisions, as applicable to the conditions.

- Description and deployment of signage warning of roadway surface conditions such as loose gravel, steel plates, or similar conditions that could be hazardous to road cycling activity on roadways open to bicycle traffic.
- Description and deployment of signage and barricades to be used around the work sites.
- Description and deployment of buoys, signage, or other effective means to warn boaters of in-water work areas and restrictions on access. Description of warning devices and signage (e.g., buoys labeled “boats keep out” or “no wake zone”) in compliance with U.S. Coast Guard Private Aid to Navigation requirements and effective during non-daylight hours and periods of dense fog.
- Use of flag people or temporary traffic signals/signage as necessary to slow or detour traffic.
- Notifications for the public, emergency service providers, cycling organizations, bike shops, schools, the U.S. Coast Guard, boating organizations, marinas, city and county parks departments, and DPR, where applicable, describing construction activities that could affect transportation and water navigation.
- Outreach (through public meetings and/or flyers and other advertisements).
- Procedures for construction area evacuation in the case of an emergency declared by county or other local authorities.
- Designation of alternate access routes via detours and bridges to maintain continual circulation for local travelers in and around construction zones, including bicycle riders, pedestrians, and boaters, where applicable.
- Description of construction staging areas, material delivery routes, and specification of construction vehicle travel hour limits.
- Notifications to commercial and leisure boating communities of proposed operations in the waterways, including posting notices at local marinas and public launch ramps. This information shall provide details regarding construction site location(s); construction schedules; and identification of no-wake zones, speed-restricted zones, and detours, where applicable
- No-wake zones and speed restrictions shall be established as part of development of the site-specific plans and shall be designated to protect the safety of construction workers and recreationists.
- Scheduling for oversized material deliveries to the work site to minimize peak hour traffic conflicts, and location of haul routes.
- Provisions that direct haulers pull over in the event of an emergency. If an emergency Vehicle is approaching on a narrow two-way roadway, specify measures to ensure that appropriate maneuvers shall be conducted by the construction vehicles to allow continual access for the emergency vehicles at the time of an emergency.

- Control for any temporary road closure, detour, or other disruption to traffic circulation, including any temporary partial closures of the water channel.
- Designation and posting of offsite vehicle staging and parking areas.
- Posting of information for contact in case of emergency or complaint.
- Designation of daily construction time windows during which construction is restricted or rail operations would need to be suspended for any activity within the UPRR ROW.
- Coordination with rail providers (i.e., Amtrak, UPRR) to develop alternative interim transportation modes (e.g., trucks or buses) that could be used to provide freight and/or passenger service during any longer term railroad closures.
- Coordination with transit providers (i.e., RT, Roseville Transit) to develop, where feasible, daily construction time windows during which transit operations would not be either detoured or substantially slowed.
- Routine posting of information to the 511.org website regarding construction delays and detours
- Other actions to be identified and developed as necessary by the construction manager/resident engineer to ensure that temporary impacts on transportation facilities are minimized.

Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure TRA-2 would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

Although there is a change in location of where the proposed passenger train layover facility would be located, implementation of the revised Project would not change the type of construction activities previously identified in the 2015 Draft EIR. The construction of the revised passenger train layover facility would require still require the movement of construction employees, equipment, and materials within the Project area. Although construction activities would occur within the rail ROW, there may be limited instances where the movement of construction employees, equipment and materials may cause temporary disruptions or delays within the existing transportation network. Mitigation Measure TRA-2, which was previously identified in the 2015 Draft EIR for the overall Project and incorporated into the 2015 Final EIR MMRP, would still be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure TRA-2 would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.11-C	Generate future parking demand that exceeds available supply in the vicinity of the Sacramento Valley Station or Roseville Station.

The 2015 Draft EIR identified that there would be no construction-related impact associated with generation of future parking demand in the vicinity of the Sacramento Valley Station or Roseville Station as construction workers typically park their vehicles at worksites and would not use station parking facilities. The 2015 Draft EIR also identified that operation of the proposed Project could result in future parking demands that exceed available parking supply in the vicinity of the Sacramento Valley Station and Roseville Station. Based on field observations and aerial imagery, the 2015 Draft EIR concluded that while new ridership would originate at the Sacramento Valley Station, that increase would be relatively small on a daily basis. The Sacramento Valley Station was also identified as having sufficient parking supply nearby to accommodate substantial increases in new riders with more than 300 spaces that are available within a 5-minute walk of the station.

However, the 2015 Draft EIR also identified that the Roseville Station has a limited parking supply and that the City of Roseville has projected a shortfall of more than 950 spaces during peak evening hours (i.e., after 7 p.m.) in the downtown area associated with planned growth. This shortfall did not include potential parking demand contributed by additional Capitol Corridor riders. With up to 135,900 new annual riders, daily Capitol Corridor ridership boarding at the Roseville Station could be approximately 500 (i.e., based on 135,900 annual riders divided by 270 operational days). The 2015 Draft EIR identified that a range of approximately 200–400 additional parking spaces beyond the amount planned by the City of Roseville may be required to accommodate the additional Capitol Corridor riders. The 2015 Draft EIR concluded that with implementation of Mitigation Measure TRA-3, which requires the provision of all day and multi-day parking at the Roseville Station, impacts would be reduced to a less than significant level.

Railroad Bridge Crossings

The existing railroad bridge crossings are not located near the Sacramento Valley Station or Roseville Station. Therefore construction or operation of these railroad bridges would not generate future parking demand that exceeds available supply in the vicinity of the Sacramento Valley Station or Roseville Station. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility would not increase passenger train frequency beyond the additional service evaluated in the 2015 Draft EIR. Implementation of the revised Project would result in the relocation of the proposed passenger train layover facility, resulting in minor additional locomotive travel of approximately two minutes per train. Similar to what was identified in the 2015 Draft EIR, during construction activities, construction workers would park their vehicles at worksite and would not use station parking facilities. Once operational, the revised passenger train layover facility location also provides up to 22 employee parking spaces for train crews to start or finish their daily shifts. Therefore, operational activities associated with the revised passenger train layover facility would not contribute to parking shortages at the Roseville Station. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.11-D	Causes vehicle queues at crossings to extend beyond available storage on the public roadway approaches.

The 2015 Draft EIR identified that the proposed Project could contribute to short-term vehicle queues at the 20th and 28th Street at-grade crossings while construction activities are underway at those locations. With implementation of Mitigation Measure TRA-2, which requires the implementation of site specific construction traffic management plans, the 2015 Draft EIR concluded that impacts during construction would be reduced to a less than significant level.

During operation, the 2015 Draft EIR identified that the proposed Project would increase the frequency of passenger trains passing through the 20th and 28th Street at-grade crossings which could cause longer vehicle queues on 20th and 28th Street than currently experienced. Based on queue estimates conducted for the proposed Project, the increased number of passenger trains would not result in queues extending beyond available storage. 20th Street had very low traffic volumes in 2013 (approximately one vehicle trip per hour in the northbound analysis direction), while the northbound volume on 28th Street during morning and evening peak hours was approximately 50 vehicles per hour (or less than one vehicle per minute).

Because the 20th Street volume is so low, the 2015 Draft EIR determined that no further analysis was required to determine that queuing problems would not occur at this location under current conditions. At 28th Street, the gate closure time for passenger trains was measured to be about 36 seconds. The Project could result in up to 10 passenger trains per day, but not more frequently than one per hour. With less than one vehicle per minute and only one train per hour, the queue is not expected to extend beyond two vehicles, assuming random arrivals as under current conditions. Under cumulative 2035 conditions, traffic volumes are projected to increase up to 14.37 vehicles per minute, assuming the McKinley Village project is fully developed. At this arrival rate, vehicle queues at the crossing are projected to reach about 8 to 9 vehicles, or about 220 feet, which is less than the available storage of 550 feet. Because little to no traffic growth is projected at 20th Street, no queuing problems would occur at this location under 2035 conditions. The 2015 Draft EIR concluded that operation of the proposed Project would result in a less than significant impact on the vehicle crossings at public roadway approaches.

Railroad Bridge Crossings

The railroad bridge crossings are existing grade separated rail bridges that span over the Business I-80. The modifications proposed for these bridge crossings would continue to remain grade separated bridges. Therefore, construction or operational activities associated with the railroad bridge crossings would not result in impacts associated with vehicle queues at at-grade crossings or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility project area includes two at-grade crossings, one at Yosemite Street and one at Tiger Way. Both at-grade crossings include crossing arms, warning bells, flashing lights, pavement markings, and warning signs.

Implementation of the revised Project would require additional modifications to the existing at-grade crossing at Tiger Way to accommodate rail layover track infrastructure. No additional modifications are anticipated to the existing at-grade crossing at Yosemite Street. Similar to what was identified in the 2015 Draft EIR, the revised Project could contribute to short-term vehicle queues at the Tiger Way at-grade crossing while construction activities are underway at that location. With implementation of Mitigation Measure TRA-2, which requires the implementation of site specific construction traffic management plans, impacts during construction would be reduced to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Operation of the revised Project would not result in changes in passenger train frequency beyond the additional service evaluated in the 2015 Draft EIR. Implementation of the revised Project would result in the relocation of the proposed passenger train layover facility, resulting in minor additional locomotive travel of approximately two minutes per train. The passenger train layover facility would serve as an endpoint where passenger trains begin and end their runs in the City of Roseville. Similar to what was identified in the 2015 Draft EIR, the passenger train layover facility would be used for the storage of passenger trains, cleaning the interiors of the passenger trains, emptying of sanitary retention tanks, and light maintenance. These activities would not impact queuing times at the at-grade crossings as these activities would be conducted in the layover facility yard. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

THRESHOLD 3.11-E	Disrupts existing public transit service or interferes with the implementation of planned public transit services.
THRESHOLD 3.11-F	Disrupts existing bicycle and pedestrian facilities or interferes with the implementation of planned facilities.

The 2015 Draft EIR identified that construction activities associated with the proposed Project could contribute to short-term transit service disruptions at existing stations and to bicycle/pedestrian facilities within the Project corridor. With implementation of Mitigation Measure TRA-2, which requires the implementation of site specific construction traffic management plans, the 2015 Draft EIR concluded that impacts on public transit services and to bicycle/pedestrian facilities during construction would be reduced to a less than significant level. Operation of the proposed Project would occur mostly within the rail ROW and is being designed to integrate into existing and future operations at the Sacramento Valley and Roseville Stations. However, the 2015 Draft EIR identified that with the potential expansion of Capitol Corridor IPR service, future AMTRAK Thruway buses and local Roseville Transit bus service may be impacted. Some AMTRAK Thruway bus service could be eliminated when train service is extended to Roseville. This would be a coordinated and planned change to future transit service that would not constitute an adverse change; to the contrary, the bus service would be upgraded to passenger rail service that does not require transfers.

The 2015 Draft EIR also disclosed that the Roseville Transit bus service could continue to operate as it does now, but the additional train service would create an opportunity for future route modification to provide new connections with arriving and departing trains. This opportunity would not interfere with planned public transit service, as CCJPA coordinate closely with Roseville Transit to ensure that they are aware of potential future train service that could better serve the Roseville Station passengers. The 2015 Draft EIR concluded that because these changes would be at the discretion of Roseville Transit as part of their future route planning and would not be directly required by the proposed Project, all operational impacts on existing and planned public transit would be less than significant.

Railroad Bridge Crossings

The existing railroad bridge crossings are not located near any existing stations and would not impact transit services currently provided or planned at existing stations. The railroad bridges are located within existing rail and highway ROW, with the majority of the improvements occurring where there are no existing bicycle/pedestrian facilities present. Modifications to the existing UPRR track for the bridge crossing located near the wye do cross the Two Rivers Trail, which is considered a bicycle/pedestrian facility. While not anticipated, construction activities may temporarily impact this bicycle/pedestrian facility. Mitigation Measure TRA-2, which requires implementation of site specific construction traffic management plans and was previously identified in the 2015 Draft EIR for the overall Project, would still be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure TRA-2 would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

Passenger Train Layover Facility

The revised passenger train layover facility would not be located at the existing Roseville Station and would not directly impact transit services currently provided at the existing Roseville Station. Although there are existing bicycle/pedestrian facilities in the form of existing sidewalks on adjacent roadways, there are no existing bicycle/pedestrian facilities located within the revised passenger train layover facility location. While not anticipated, construction activities may require temporary road detours within the Project area, which may impact existing public transit service and bicycle/pedestrian facilities adjacent to the revised passenger train layover facility. Mitigation Measure TRA-2, which requires implementation of site specific construction traffic management plans and was previously identified in the 2015 Draft EIR for the overall Project, would still be implemented. Similar to what was originally identified in the 2015 Draft EIR, implementation of Mitigation Measure TRA-2 would minimize impacts to a less than significant level. The revised Project would not change the significance conclusions or result in any new significant impacts not previously identified in the 2015 Draft EIR.

4.0 Other CEQA Considerations

This section presents other environmental issues that are of particular significance to CEQA. It includes a discussion of significant and irreversible environmental changes, cumulative effects, and growth-inducing impacts.

4.1 Significant and Irreversible Environmental Changes

A commitment of a resource is considered irreversible when its use limits the future options for its use. Irreversible changes may include current or future uses of non-renewable resources, and secondary or growth-inducing impacts that commit future generations to similar uses. In accordance with CEQA Guidelines Section 15126.2(c), this section evaluates the effect of the proposed changes to the approved Project associated with three distinct categories of significant irreversible changes: changes in land use that would commit future generations to specific uses, consumption of nonrenewable resources, and irreversible changes from environmental actions.

The approved Project and the proposed changes to the approved Project would commit a similar amount of land resources due to the right-of-way needs within the corridor. The commitment of long-term land resources for the passenger rail system is consistent with the applicable land use plans for the City of Roseville and City of Sacramento, as discussed in Section 3.8, Land Use and Planning. The proposed changes would not commit future generations to or introduce changes in land use that would vary from the existing conditions or planned development by the City of Roseville or City of Sacramento.

Similar to the approved Project, the construction and operation of the proposed changes would entail the irreversible and irretrievable commitment of energy and human resources, including labor required for planning, design, construction, and operations. The use of these resources would be irrecoverable; however, they are not in short supply, and their use would not affect the continued availability and supply of these resources. Based on the analysis above, no new significant and irreversible effects or a substantial increase in the severity of previously identified significant and irreversible effects would occur.

4.2 Cumulative Effects

This section evaluates the incremental effect of the revised Project on the environment when considered in conjunction with closely related past, present, and reasonably foreseeable future projects. Cumulative impacts related to air quality and climate change, noise, and transportation, are described and evaluated in Section 3.2, Air Quality/Climate Change/GHG; Section 3.9, Noise and Vibration; and Section 3.11, Transportation, of this SEIR, respectively. It was determined that the proposed changes to the approved project would not result in new significant impacts or a substantial increase in the severity of previously identified significant cumulative impacts.

4.3 Growth-Inducing Impacts

Similar to the approved project, the proposed changes to the approved project are consistent with the projected and planned growth in the vicinity of the Project corridor. The proposed changes would not directly or indirectly induce economic, population, or housing growth in the surrounding environment. As a result, no new significant growth-inducing impacts or increase in the severity of previously identified significant growth-inducing impacts would occur as a result of the proposed changes to the approved Project.

5.0 Alternatives

5.1 Range of Alternatives Evaluated

The 2015 Draft EIR evaluated a range of alternatives to the approved Project. No additional alignment or facility alternatives are considered in this SEIR.

THIS PAGE IS INTENTIONALLY BLANK.

6.0 References

California Air Resources Board. 2023. Area Designations Maps. Accessed June 16, 2023. Available: https://www.arb.ca.gov/desig/adm/adm.htm.

California Department of Transportation (Caltrans). 2018. *Structures Preliminary Geotechnical Report for Elvas Underpass (Replace or Retrofil)*

——— 2021. Phase 1 – Updated Hazardous Waste Initial Site Assessment for EA: 03-0H931.

——— 2022. Draft Water Quality Assessment for EA: 03-0H931

——— 2022. Noise Study Report - State Route 51/Business 80/Capital City Freeway Improvements Project

——— 2023. Draft Natural Environment Study – State Route 51/Business 80/Capital City Freeway Improvements Project.

——— 2023. Draft Air Quality Report – State Route 51/Business 80/Capital City Freeway Improvements Project.

——— 2023. Preliminary Administrative Draft Community Impact Assessment – State Route 51/Business 80/Capital City Freeway Improvements Project.

California Office of Environmental Health Hazard Assessment. 2015. Air Toxics Hot Spots Program: Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments. Accessed July 2, 2023. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

Capitol Corridor Joint Powers Authority. 2015. *Sacramento to Roseville Third Main Track Draft Environmental Impact Report (State Clearinghouse #2014072005)*. Prepared by HDR and ICF. Accessed July 2023. Available: www.sactoroseville3rdtrack.com

——— 2015. *Sacramento to Roseville Third Main Track Final Environmental Impact Report (State Clearinghouse #2014072005)*. Prepared by HDR and ICF. Accessed July 2023. Available www.sactoroseville3rdtrack.com

THIS PAGE IS INTENTIONALLY BLANK.

7.0 List of Preparers, Organizations, and Persons Consulted

Capitol Corridor Joint Powers Authority (Lead Agency)

Jim Allison	Manager of Planning

California Department of Transportation, District 3

Andrew Huang	Project Manager, D3 PPM
Mundeep Purewal	Environmental Branch Chief, R-M1
Sandeep Sandhu	Associate Environmental Planner, R-M1

HDR (Document Preparer)

Buzz Berger	Project Principal
Kelly Czechowski	Project Manager
Serena Lin	Environmental Planner
Aivy Le	Environmental Planner
Ronell Santos	Biologist
Katherine Turner	Technical Editor
Anders Burvall	GIS Project Manager

ICF (Technical Document Preparer)

Maggie Townsley	Air Quality Technical Principal
Cory Matsui	Air Quality Technical Lead

THIS PAGE IS INTENTIONALLY BLANK.

Appendix A: Notice of Preparation Materials

THIS PAGE IS INTENTIONALLY BLANK.

NOTICE OF PREPARATION

OF A SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

AND PUBLIC SCOPING PERIOD FOR THE

SACRAMENTO TO ROSEVILLE THIRD MAIN TRACK PROJECT

Date: June 28, 2023

To: Governor's Office of Planning and Research/State Clearinghouse Unit, Responsible Agencies, Trustee Agencies, and Interested Parties

From: Capitol Corridor Joint Powers Authority

Lead Agency: Capitol Corridor Joint Powers Authority
300 Lakeside Drive, 14th Floor East
Oakland, CA 94612

Contact: Jim Allison, Manager of Planning
(510) 464-6994
jima@capitolcorridor.org

Project Title: Sacramento to Roseville Third Main Track

Subject: Notice of Preparation of a Supplemental Environmental Impact Report in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15082(a) and Notice of Public Scoping Meeting

INTRODUCTION

Notice is hereby given that the Capitol Corridor Joint Powers Authority (CCJPA), as California Environmental Quality Act (CEQA) Lead Agency, will prepare a Supplemental Environmental Impact Report (SEIR) for the Sacramento to Roseville Third Main Track (Project or SR3T Project) and will hold a public scoping meeting to receive comments on the scope of the SEIR, as detailed below. This Notice of Preparation (NOP)/Notice of Public Scoping Meeting (Notice) is also available online at https://ceqanet.opr.ca.gov/Project/2014072005. CCJPA, as the Project proponent and CEQA Lead Agency for the Project, has determined that an SEIR must be prepared for the Project prior to making any final decision regarding whether to approve the Project, in accordance with CEQA.

This Notice of Preparation (NOP) includes a brief description of the revised Project and the environmental topics to be addressed in the SEIR. The proposed Project would constitute a change to the previously approved SR3T Project. Therefore, the SEIR will evaluate whether any new or substantially more severe impacts on the environment would result from the project changes, compared to the environmental impacts disclosed in the previously certified SR3T Project EIR. The SEIR also will incorporate the applicable mitigation measures that were identified in the previously certified EIR. CCJPA has issued this Notice to Responsible Agencies, Trustee Agencies, federal agencies, transportation planning agencies, agencies with transportation facilities that may be affected, and other interested

parties. Responsible Agencies are those public agencies that have a role in approving or carrying out the proposed Project.

PUBLIC REVIEW AND SCOPING

A 30-day public scoping comment period will begin on June 28 and end on July 28, 2023. During this scoping comment period, CCJPA encourages you to learn more about and provide your input into the scope of the Project and environmental review.

Online Public Scoping Meeting

For your convenience, and to allow participation in a safe environment while social distancing, CCJPA will host an online SEIR Scoping Meeting/Public Workshop. The purpose of the meeting is to solicit input on the scope and content of the environmental analysis that will be included in the Supplement to the EIR. The date and time of the virtual meeting is:

Wednesday, July 12th at 6 p.m.

Zoom Link: https://us06web.zoom.us/j/85103127845?pwd=N2hZV3F3azNTT25oblhvblV3WDlIQT09
Zoom Passcode: 622495

Public Comment Submittal

We value your input and look forward to hearing from you. For your convenience, we have a number of ways for you to provide comments at any time during the 30-day comment period ending on **July 28, 2023**. Written comments or questions concerning the proposed Project should be directly mailed or emailed to the CCJPA's Project Manager at the following addresses:

- Direct Mail:

  Jim Allison, Manager of Planning

  Capitol Corridor Joint Powers Authority

  300 Lakeside Drive, 14th Floor East

  Oakland, CA 92612

- Email: jima@capitolcorridor.org

For the deaf, hard of hearing, or speech impaired, (TDD) users may contact the California Relay Service TTY and/or Voice Line at 1-800-735-2929, or 711.

If you are an authorized representative of a Responsible Agency or a Trustee Agency, the CCJPA needs to know the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities in connection with the proposed Project. Your agency will need to use the SEIR when considering whether to permit or otherwise approve the Project. Comments received from State of California agencies should address:

1) whether the agency will be a Responsible Agency or a Trustee Agency for the Project; and

2) if the agency is a Responsible Agency, the significant environmental issues and reasonable alternatives and mitigation measures which the Responsible Agency will need to have explored in the analysis.

We will also need the name, address, telephone number, and email address of the contact person for your agency.

PROJECT LOCATION AND OVERVIEW

The original SR3T Project is located in Sacramento County and Placer County between the existing Sacramento Valley Station and the existing City of Roseville Station (see Figures 1 and 2). The SR3T Project proposed the construction and operation of approximately 17.8 miles of new main track within the existing rail corridor and identified the following improvements:

- Minor reconfiguration of the City of Roseville Station to accommodate increased Capitol Corridor service in the future.
- Grading and installation of new subgrade and drainage
- Placement of new rail and ties
- Special track work with turnouts, crossovers and associated switches and equipment
- New wayside track signals
- Eleven replaced railroad bridges, including a new bridge across the American River in Sacramento

Based on a preliminary review of the proposed modifications to the original project, it has been determined that a SEIR would need to be prepared for CEQA compliance. The Final EIR for the SR3T Project was certified on November 18, 2015. This supplement to the certified EIR will contain only the information necessary to make the previously certified EIR adequate for the Project as revised, would be given the same notice and public review as was given to the original draft EIR as per 14 CCR § 15087, and would be circulated by itself without re-circulating the previous draft or final EIR. Subsequent to that original CEQA certification, CCJPA is seeking to accommodate changes in project design associated with the SR3T Project. The SR3T Project SEIR would cover two project components:

- *Elvas Railroad Bridge Crossings:* Supplemental analysis for up to three railroad bridge crossings across SR-51 to accommodate changes in project design associated with the SR-51 and SR3T Project (Figure 3).
- *Passenger Train Layover Facility:* The original SR3T EIR contemplated a passenger train layover facility adjacent to Old Town Roseville, located along the west leg of the Union Pacific (UP) wye track connecting the UP Roseville Subdivision with the UP Valley Subdivision. Subsequent to certification of the Final EIR for the SR3T Project, supplemental analysis would be conducted for a revised location of the proposed passenger train layover facility (Figure 4).

PROBABLE ENVIRONMENTAL EFFECTS AND REQUIRED APPROVALS

As discussed in CEQA Guidelines Section 15163, a lead agency may choose to prepare a Supplement to an EIR when only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation. The Supplement to the EIR need contain only the

information necessary to make the previous EIR adequate for the project as revised. When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the Supplemental EIR. Therefore, the CCJPA Board will ultimately consider the SEIR in combination with the previously certified EIR for the SR3T Project, which was certified in November 2015.

The SEIR will update the environmental setting and utilize project-specific information to determine if there are changed circumstances that lead to identification of significant impacts that were not identified in the previously certified EIR. The analysis will, in part, determine if the impacts and mitigation measures already identified in the previously certified EIR adequately address project-specific impacts. If conditions identified in CEQA Guidelines Section 15162 occur (e.g., new or more severe significant impacts than previously analyzed), mitigation measures will be developed or modified to address the impacts.

INFORMATION

Documents relating to the Project are available for review online at:
https://www.capitolcorridor.org/sac-roseville-third-track/

http://sactoroseville3rdtrack.com/

Jim Allison, Manager of Planning

Capitol Corridor Joint Powers Authority

Attachments:

Figure 1. Regional Map

Figure 2. Previously Certified Project Overview Location Map

Figure 3. Elvas Railroad Bridge Crossings Location Map

Figure 4. Passenger Train Layover Facility Location Map

Figure 1. Regional Map

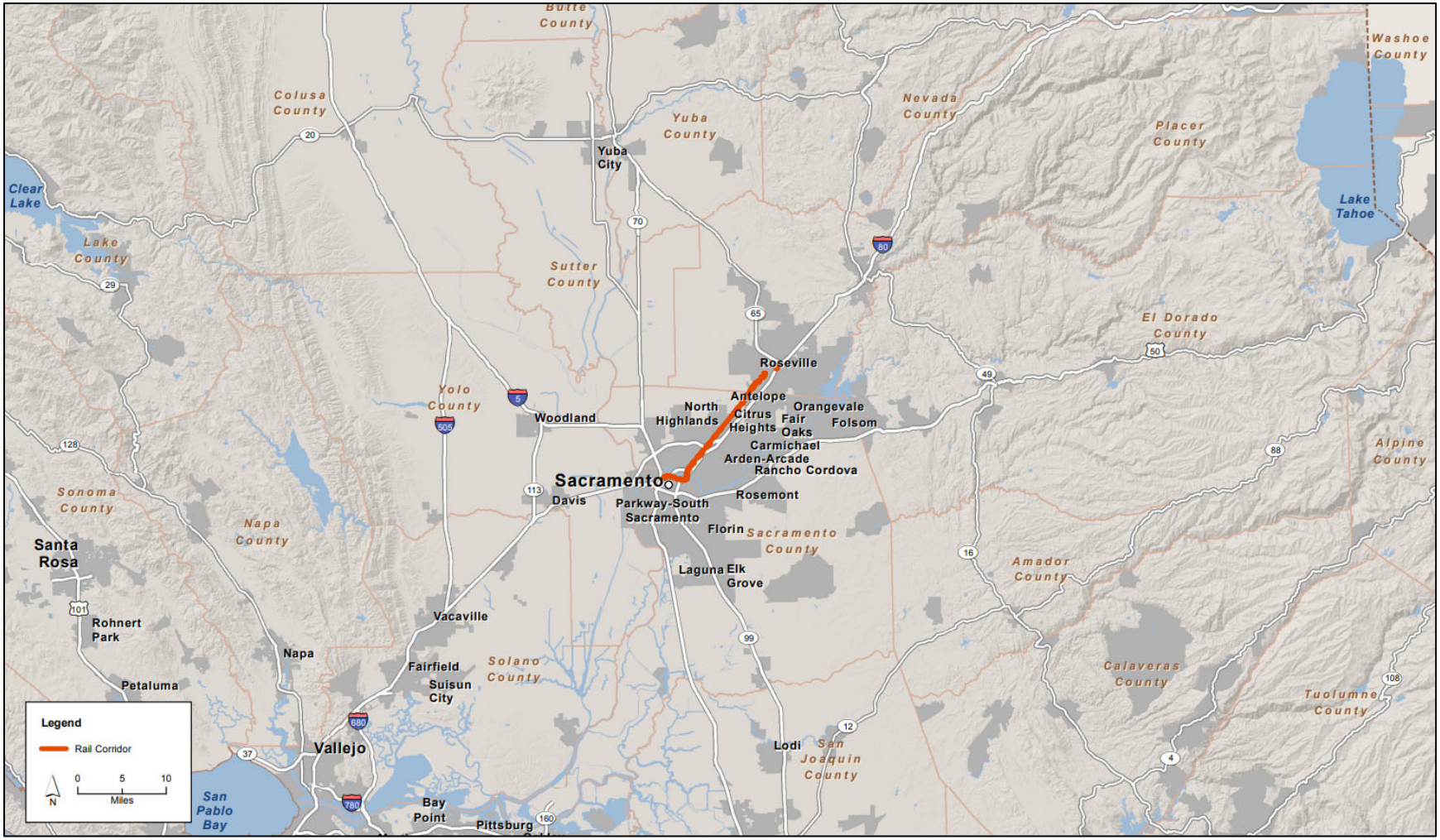


Figure 2. Previously Certified Project Overview Location Map

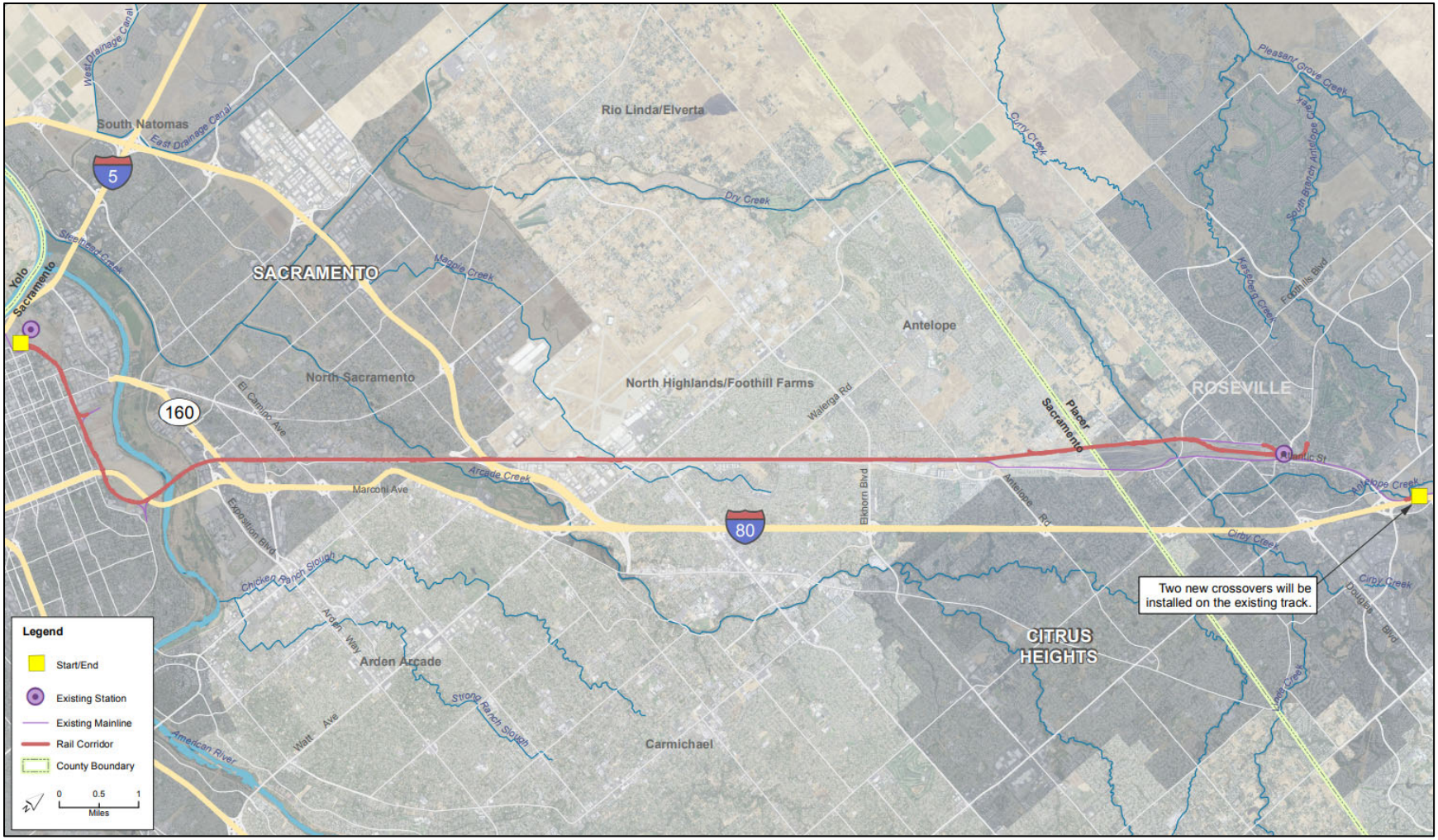


Figure 3. Elvas Railroad Bridge Crossings Location Map

Figure 4. Passenger Train Layover Facility Location Map

AMENDED NOTICE OF PREPARATION

OF A SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

AND PUBLIC SCOPING PERIOD FOR THE

SACRAMENTO TO ROSEVILLE THIRD MAIN TRACK PROJECT

Date: July 18, 2023

To: Governor's Office of Planning and Research/State Clearinghouse Unit, Responsible Agencies, Trustee Agencies, and Interested Parties

From: Capitol Corridor Joint Powers Authority

Lead Agency: Capitol Corridor Joint Powers Authority
2150 Webster Street, 3rd Floor
Oakland, CA 94612

Contact: Jim Allison, Manager of Planning
(510) 464-6994
jima@capitolcorridor.org

Project Title: Sacramento to Roseville Third Main Track

Subject: Notice of Preparation of a Supplemental Environmental Impact Report in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15082(a) and Notice of Public Scoping Meeting

Original Date of Public Notice: June 28, 2023

Amended Date of Public Notice: July 18, 2023

This amended notice provides a revised Public Scoping Meeting Date.

INTRODUCTION

Notice is hereby given that the Capitol Corridor Joint Powers Authority (CCJPA), as California Environmental Quality Act (CEQA) Lead Agency, will prepare a Supplemental Environmental Impact Report (SEIR) for the Sacramento to Roseville Third Main Track (Project or SR3T Project) and will hold a public scoping meeting to receive comments on the scope of the SEIR, as detailed below. This Notice of Preparation (NOP)/Notice of Public Scoping Meeting (Notice) is also available online at https://ceqanet.opr.ca.gov/Project/2014072005. CCJPA, as the Project proponent and CEQA Lead Agency for the Project, has determined that an SEIR must be prepared for the Project prior to making any final decision regarding whether to approve the Project, in accordance with CEQA.

This Notice of Preparation (NOP) includes a brief description of the revised Project and the environmental topics to be addressed in the SEIR. The proposed Project would constitute a change to the previously approved SR3T Project. Therefore, the SEIR will evaluate whether any new or substantially more severe impacts on the environment would result from the project changes, compared to the

environmental impacts disclosed in the previously certified SR3T Project EIR. The SEIR also will incorporate the applicable mitigation measures that were identified in the previously certified EIR. CCJPA has issued this Notice to Responsible Agencies, Trustee Agencies, federal agencies, transportation planning agencies, agencies with transportation facilities that may be affected, and other interested parties. Responsible Agencies are those public agencies that have a role in approving or carrying out the proposed Project.

PUBLIC REVIEW AND SCOPING

A 30-day public scoping comment period will begin on June 28 and end on July 28, 2023. During this scoping comment period, CCJPA encourages you to learn more about and provide your input into the scope of the Project and environmental review.

Online Public Scoping Meeting

For your convenience, and to allow participation in a safe environment while social distancing, CCJPA will host an online SEIR Scoping Meeting/Public Workshop. The purpose of the meeting is to solicit input on the scope and content of the environmental analysis that will be included in the Supplement to the EIR. The date and time of the virtual meeting is:

Monday, July 24th from 6 p.m. to 7 p.m.

Zoom Link: bit.ly/CCJPA_SR3T_SEIR2
Zoom Passcode: 953679

Public Comment Submittal

We value your input and look forward to hearing from you. For your convenience, we have a number of ways for you to provide comments at any time during the 30-day comment period ending on **July 28, 2023**. Written comments or questions concerning the proposed Project should be directly mailed or emailed to the CCJPA's Project Manager at the following addresses:

- Direct Mail:

  Jim Allison, Manager of Planning

  Capitol Corridor Joint Powers Authority

  2150 Webster Street, 3rd Floor

  Oakland, CA 92612

- Email: jima@capitolcorridor.org

For the deaf, hard of hearing, or speech impaired, (TDD) users may contact the California Relay Service TTY and/or Voice Line at 1-800-735-2929, or 711.

If you are an authorized representative of a Responsible Agency or a Trustee Agency, the CCJPA needs to know the views of your agency as to the scope and content of the environmental information that is relevant to your agency's statutory responsibilities in connection with the proposed Project. Your agency

will need to use the SEIR when considering whether to permit or otherwise approve the Project. Comments received from State of California agencies should address:

1) whether the agency will be a Responsible Agency or a Trustee Agency for the Project; and

2) if the agency is a Responsible Agency, the significant environmental issues and reasonable alternatives and mitigation measures which the Responsible Agency will need to have explored in the analysis.

We will also need the name, address, telephone number, and email address of the contact person for your agency.

PROJECT LOCATION AND OVERVIEW

The original SR3T Project is located in Sacramento County and Placer County between the existing Sacramento Valley Station and the existing City of Roseville Station (see Figures 1 and 2). The SR3T Project proposed the construction and operation of approximately 17.8 miles of new main track within the existing rail corridor and identified the following improvements:

- Minor reconfiguration of the City of Roseville Station to accommodate increased Capitol Corridor service in the future.
- Grading and installation of new subgrade and drainage
- Placement of new rail and ties
- Special track work with turnouts, crossovers and associated switches and equipment
- New wayside track signals
- Eleven replaced railroad bridges, including a new bridge across the American River in Sacramento

Based on a preliminary review of the proposed modifications to the original project, it has been determined that a SEIR would need to be prepared for CEQA compliance. The Final EIR for the SR3T Project was certified on November 18, 2015. This supplement to the certified EIR will contain only the information necessary to make the previously certified EIR adequate for the Project as revised, would be given the same notice and public review as was given to the original draft EIR as per 14 CCR § 15087, and would be circulated by itself without re-circulating the previous draft or final EIR. Subsequent to that original CEQA certification, CCJPA is seeking to accommodate changes in project design associated with the SR3T Project. The SR3T Project SEIR would cover two project components:

- *Elvas Railroad Bridge Crossings:* Supplemental analysis for up to three railroad bridge crossings across SR-51 to accommodate changes in project design associated with the SR-51 and SR3T Project (Figure 3).
- *Passenger Train Layover Facility:* The original SR3T EIR contemplated a passenger train layover facility adjacent to Old Town Roseville, located along the west leg of the Union Pacific (UP) wye track connecting the UP Roseville Subdivision with the UP Valley Subdivision. Subsequent to certification of the Final EIR for the SR3T Project, supplemental analysis would be conducted for a revised location of the proposed passenger train layover facility (Figure 4).

PROBABLE ENVIRONMENTAL EFFECTS AND REQUIRED APPROVALS

As discussed in CEQA Guidelines Section 15163, a lead agency may choose to prepare a Supplement to an EIR when only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation. The Supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised. When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the Supplemental EIR. Therefore, the CCJPA Board will ultimately consider the SEIR in combination with the previously certified EIR for the SR3T Project, which was certified in November 2015.

The SEIR will update the environmental setting and utilize project-specific information to determine if there are changed circumstances that lead to identification of significant impacts that were not identified in the previously certified EIR. The analysis will, in part, determine if the impacts and mitigation measures already identified in the previously certified EIR adequately address project-specific impacts. If conditions identified in CEQA Guidelines Section 15162 occur (e.g., new or more severe significant impacts than previously analyzed), mitigation measures will be developed or modified to address the impacts.

INFORMATION

Documents relating to the Project are available for review online at:
https://www.capitolcorridor.org/sac-roseville-third-track/

http://sactoroseville3rdtrack.com/

Jim Allison, Manager of Planning

Capitol Corridor Joint Powers Authority

Attachments:

Figure 1. Regional Map

Figure 2. Previously Certified Project Overview Location Map

Figure 3. Elvas Railroad Bridge Crossings Location Map

Figure 4. Passenger Train Layover Facility Location Map

Figure 1. Regional Map

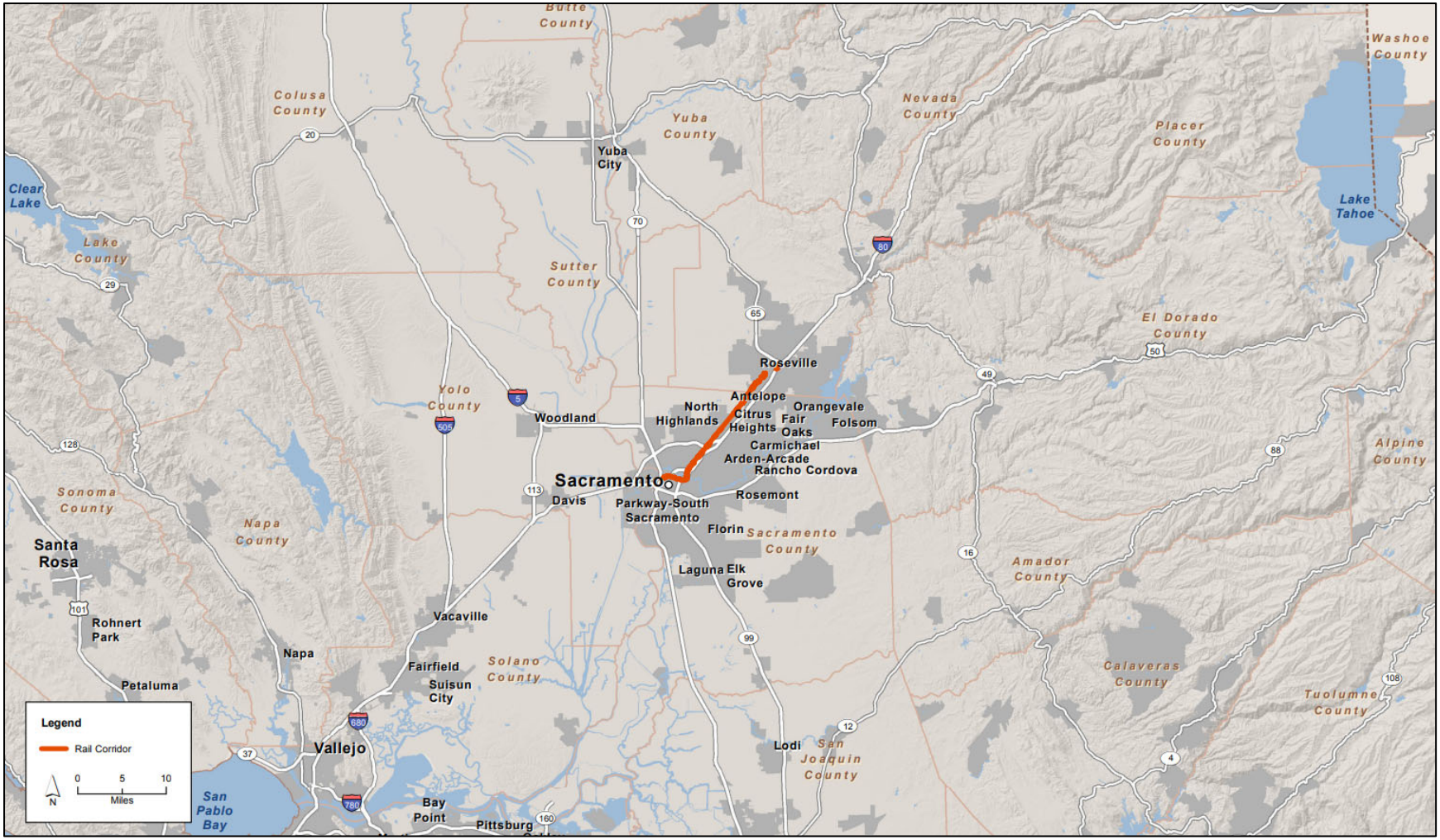


Figure 2. Previously Certified Project Overview Location Map

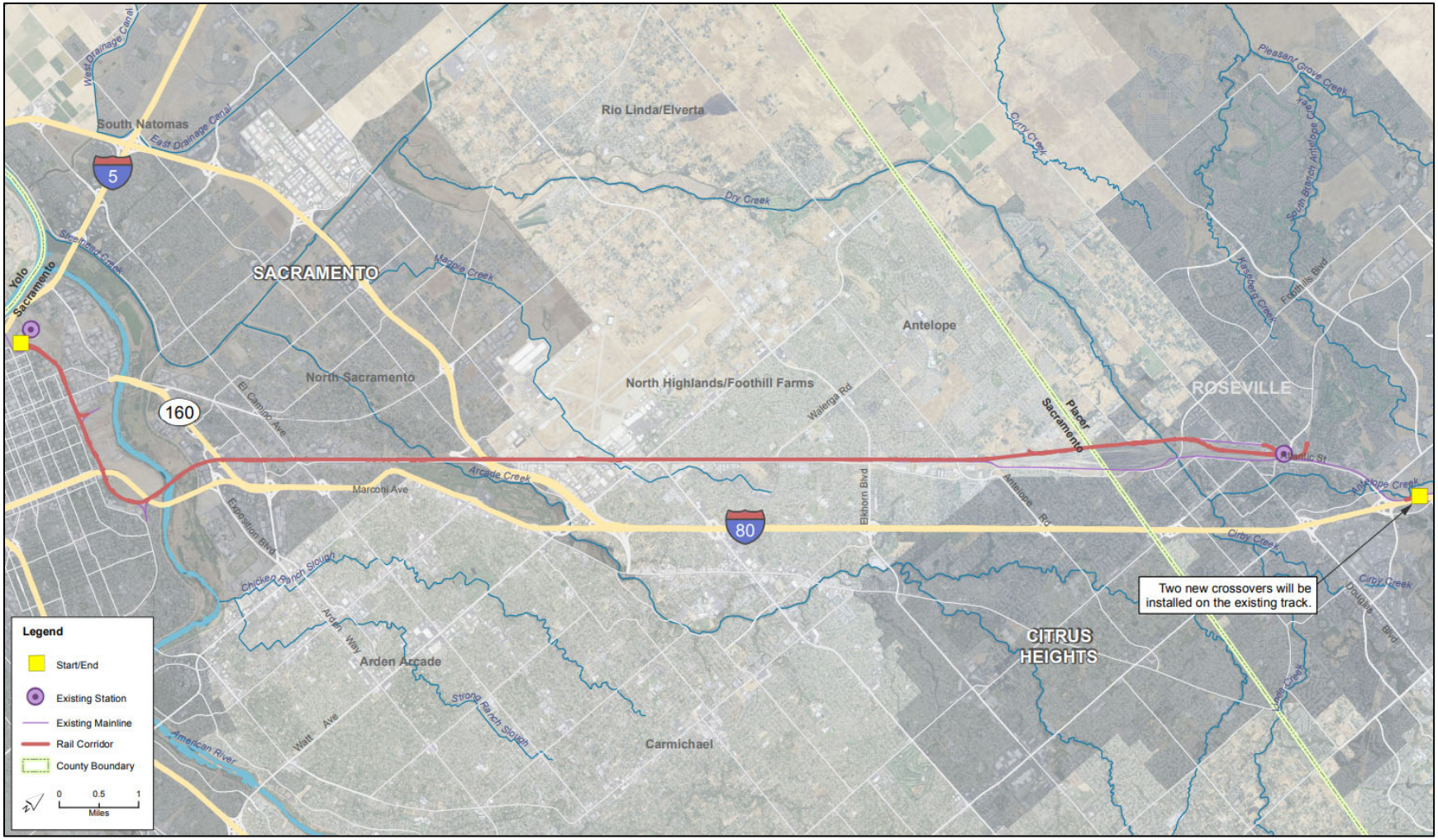


Figure 3. Elvas Railroad Bridge Crossings Location Map

Figure 4. Passenger Train Layover Facility Location Map

06-30-2023 – Native American Heritage Commission

STATE OF CALIFORNIA — Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

June 30, 2023

Jim Allison
Capitol Corridor Joint Powers Authority (CCJPA)
300 Lakeside Dr, 14th Floor East
Oakland, CA 94612

Re: 2014072005, Sacramento to Roseville Third Main Track Project, Sacramento and Placer Counties

Dear Mr. Allison:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

Page 1 of 5

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

- **a.** A brief description of the project.
- **b.** The lead agency contact information.
- **c.** Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
- **d.** A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

- **a.** For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

- **a.** Alternatives to the project.
- **b.** Recommended mitigation measures.
- **c.** Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

- **a.** Type of environmental review necessary.
- **b.** Significance of the tribal cultural resources.
- **c.** Significance of the project's impacts on tribal cultural resources.
- **d.** If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

- **a.** Whether the proposed project has a significant impact on an identified tribal cultural resource.
- **b.** Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

Page 2 of 5

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

Page 3 of 5

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

Page 4 of 5

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

cc: State Clearinghouse

07-10-2023 – A. Bravo

From: Alyssa Bravo <alyssabravo615@gmail.com>
Date: Monday, July 10, 2023 at 6:40 AM
To: James Allison <JimA@capitolcorridor.org>
Subject: Comment on Seir for the SR3T project

Hi my name is Alyssa bravo. I'm a resident of Roseville CA that lives behind the Amtrak station. My house, 227 Church Street, it backs up to the small parking lot in the Amtrak station 201 Pacific Street in Roseville 95678-2242. My comment is what will be the impact to my Roseville Heights neighborhood and residents if there is anything to be done. Will there be impacts like construction? Road closures to this area?
Thank you.

07-12-2023 – Rail Passenger Association of California and Nevada

RailPAC
Rail Passenger Association
of California and Nevada

P.O. Box 22344
San Francisco CA 94122

www.railpac.org

Jim Allison, Manager of Planning
Capitol Corridor Joint Powers Association
300 Lakeside Drive, 14th Floor East
Oakland, CA 94612

July 12, 2023

Subject: Support for Sacramento to Roseville Third Main Track Project and Project Supplemental Environmental Impact Report

Dear Mr. Allison,

I am writing on behalf of members of the Rail Passenger Association of California and Nevada (RailPAC) living, working and traveling in the greater Sacramento and Bay Area of California. RailPAC is an all-volunteer statewide organization advocating for improvement of commuter and intercity passenger rail service and for expanded public transportation in California and Nevada.

RailPAC fully supports Capitol Corridor's Sacramento to Roseville Third Main Track Project, SCH number 2014072005, which will give the needed capacity to increase passenger train service between Roseville and Sacramento, Oakland, San Francisco, San Jose and intermediate cities. We also support the Supplemental Environmental Impact Report, dated June 28, 2023, covering relatively minor changes to the project design.

Sincerely,

Doug Kerr

Doug Kerr, Vice-President North
Rail Passenger Association of California and Nevada

07-13-2023 – J. Legnitto

From: jlegnitto@aol.com <jlegnitto@aol.com>
Sent: Thursday, July 13, 2023 8:41 AM
To: James Allison <JimA@capitolcorridor.org>
Subject: Capitol Corridor Public Comments

Good Morning Mr. Allison:

I'm writing because I own the home on the corner of Atlantic Street and Doyle Street in Roseville which has been in my family for over 100 years.

Yesterday at 6pm Pacific Time, I attempted to view the Capitol Corridor Public Workshop on Zoom on both my laptop and my mobile phone. However, all I got through 6:30 PM was the waiting to start the meeting message. Since I live in New York, perhaps this was a network traffic issue.

Could you please tell me whether the meeting was taped and can be viewed online or whether there will be a transcript of it made available to the public?

Since my home is located directly across the street from the main railroad crossing at Atlantic Street and Yosemite Street in Roseville, I also have these questions:

1. At the above location, will the third main track be built on the Atlantic Street side or on the Tahoe Avenue side of the railroad at Yosemite Street?

2. Are there currently proposed alternate locations for the revised location of the passenger train layover facility in Roseville? If not, when will those locations be made public? And will there be a separate public comment period at that time?

3. How many parking spaces will there be at the passenger train layover facility? And will all day parking for commuters be available there?

Thank you for your assistance.

Jan Legnitto

07-18-2023 – Sacramento County Regional Parks

From: Maret. Mary <maretm@saccounty.gov>
Sent: Tuesday, July 18, 2023 11:49 AM
To: James Allison <JimA@capitolcorridor.org>
Subject: RE: Notice regarding Supplemental EIR for Sacramento to Roseville 3rd Track - replacement Zoom meeting

Thank you for the update. I am surprised that the 30 day comment period has not been extended past July 28th. Will that date be extended due to the late meeting? I was going to use the meeting to get more information to inform my comments.

Mary Maret

From: James Allison <JimA@capitolcorridor.org>
Sent: Tuesday, July 18, 2023 10:59 AM
Cc: kelly.czechowski@hdrinc.com; Berger, Buzz <buzz.berger@hdrinc.com>
Subject: Notice regarding Supplemental EIR for Sacramento to Roseville 3rd Track - replacement Zoom meeting

To all:

Each of you (on the bcc email line) emailed me about the missed opportunity when our Zoom hosting failed for the Supplemental EIR noticing and NOP for the Sacramento to Roseville 3rd Track Project Supplemental EIR.

The attached PDF documents each contain link details (or QR codes) for the replacement meeting scheduled for July 24, 6-7 PM.

We look forward to having the meeting work this time and apologize again for the technical snafu that prevented that from happening previously.

Thank you for your email feedback and we will be ready to host on this occasion.

Jim Allison | Manager of Planning
Pronouns: He | Him | His
Capitol Corridor Joint Powers Authority
2150 Webster St, 3rd Floor | Oakland, CA 94612
(510) 464-6994 | jima@capitolcorridor.org or jalliso@bart.gov

07-25-2023 – J. Legnitto

From: jlegnitto@aol.com <jlegnitto@aol.com>
Sent: Tuesday, July 25, 2023 9:37 AM
To: James Allison <JimA@capitolcorridor.org>
Subject: Capitol Corridors Project Zoom Meeting Follow-up Questions

Good Morning Mr. Allison:

I have a number of questions as a result of last night's Zoom call Q&A.

The first and second postcards sent by your office indicated that supplemental analysis would be conducted for a revised location of the proposed passenger train layover facility. Yesterday, if I heard you correctly, you indicated that location had already been selected. When did that happen and was there a public comment period before that decision was made? Where can I find the supplemental analysis that was done for the alternate location? And what is the number of parking spaces that the passenger layover facility will have?

I wasn't clear about the location of the documents that you mentioned that you would be posting this week. If it's the Atlantic Street map that you displayed last night, where can I find that? Due to its size and color, it was difficult to read.

Could you direct me to or provide a copy of the environmental impact report on the effects of releasing diesel fumes from the train maintenance installation?

You also mentioned that the timeframe for this project was long. What is the projected date when the project will be operational?

Finally, is the July 28th deadline for submitting comments 11:59 PM on that date?

Thank you.

Jan Legnitto

07-25-2023 – D. Pell

From: Derek Pell <derek.j.pell@gmail.com>
Sent: Tuesday, July 25, 2023 1:14 PM
To: James Allison <JimA@capitolcorridor.org>
Subject: SR3T Supplemental EIR Scoping

Good Afternoon Mr. Allison,

Thank you for hosting the workshop last night on the scoping of the supplemental EIR for the SR3T project. Regarding my comments on the impacts to the at-grade Tiger Way and Yosemite St crossings, something that could be beneficial to the assessment would be maybe the estimated speed at which trains would be crossing the roads.

UPRR trains can be quite disruptive currently primarily due to their long lengths, slow speeds, and proclivity to stop on the tracks blocking the crossings. Presumably, the operation of the passenger trains would require much shorter crossing closures.

Something to consider would be if there is adequate track length in the layover facility for trains to cross the roads at a reasonable speed.

I also appreciate your comments on electrification and would be interested in speaking with you and learning more about that.

Thank you very much,

Derek Pell

07-26-2023 – County of Sacramento Department of Regional Parks

Ann Edwards
County Executive

County of Sacramento

Dave Defanti
Deputy County Executive
Community Services Agency

Regional Parks
Liz Bellas - Director

July 26, 2023

Capitol Corridor Joint Powers Authority
Attention: Jim Allison
300 Lakeside Drive, 14th Floor East
Oakland, CA 94612

RE: County of Sacramento Department of Regional Parks Comments on the Notice of Preparation of a Supplemental Environmental Impact Report for the Sacramento to Roseville Third Track Project

Dear Mr. Allison:

Thank you for providing Sacramento County Department of Regional Parks (Regional Parks) the opportunity to provide comments on the proposed project's Notice of Preparation of a Supplemental Environmental Impact Report (Document). Our concerns are related to impacts to the American River Parkway (Parkway) by the Elvas Railroad Bridge Crossings.

The Parkway from Nimbus Dam to the confluence with the Sacramento River is designated as a Wild and Scenic River by both the State and Federal Wild and Scenic Rivers Acts (WSRA) in 1972 and 1981, respectively. The management and protection of the wild and scenic river values, specifically focused on recreation and fisheries, is outlined in the American River Parkway Plan (ARPP), as adopted by the State of California under the Urban American River Parkway Preservation Act. In accordance with the ARPP, management of the Parkway and administration of the ARPP is the principal responsibility of the Sacramento County Department of Regional Parks. Therefore, projects within the American River Parkway must be reviewed by Regional Parks for consistency with the ARPP as part of the approval process, which is also outlined in the ARPP.

As a responsible agency under the State and Federal Wild and Scenic Rivers Act, Regional Parks requests specificity of significant environmental impacts within the Parkway, with specific mitigations outlined in the Supplemental Impact Report. This request is consistent with the following policies of the ARPP:

Terrestrial Resource Policies

3.1 Any development of facilities within the Parkway, including but not limited to buildings, roads, turfed areas, trails, bridges, tunnels, pipelines, overhead electrical lines, levees and parking areas, shall be designed and located such that any impact upon native vegetation is minimized and appropriate mitigation measures are incorporated into the project.

3.1.1 Parkway facilities are those necessary for the operations, management, and permitted uses within the Parkway.

3.1.2 Development of non-Parkway facilities must have a compelling regional need, meet all applicable statutory requirements and provide mitigation and enhancements to the Parkway's natural, recreational, or interpretive resources.

Bridges

8.18 If new bridge crossings are constructed, they shall be designed and located in such a manner as to minimize negative impact to the Parkway environment, aesthetic values, and natural resources. Any additional bridge crossings should be located within Developed Recreation or Limited Recreation areas.

8.18.1 The Downtown-Natomas-Airport (DNA-RT) light rail project alignment, as approved by the Regional Transit Board of Directors in December 2003, is recognized by this Plan.

8.19 Bridge crossings should incorporate river themes and the Parkway context into its design and use muted, earth toned colors.

8.20 If new automobile bridges are considered, expanding existing bridge capacity is preferred to constructing new bridges. If after careful study of all other alternatives, another crossing is required, a map amendment to the locally-adopted area plan(s) shall be required.

8.21 If new automobile bridges are to be constructed over the American River or existing automobile bridges enlarged, these facilities should provide a path for bicycles and pedestrians that is separated from vehicle lanes and include viewing platforms where appropriate.

8.22 New bridges for bikes, pedestrians, and equestrians may be considered when there is a need to improve Parkway connectivity, circulation and access, and shall require a map amendment to the locally-adopted area plan(s).

The Document should describe any permanent property acquisitions from the American River Parkway. This loss of recreational property should include a specific mitigation:

- Add appropriate bridge infrastructure, as needed, to allow connection of the Two Rivers Trail. Adding bridge safety features that will allow the paved trail to be built under the railroad bridge will connect two sections of the Two Rivers Trail. As of now, Phase I and Phase II of the Two Rivers Trail are awkwardly separated by a short unpaved segment associated with the existing railroad bridge.

The Document should also describe impacts associated with any proposed detours from the recreational trails on the American River Parkway and should specifically describe how safe access to trails will be maintained as mitigation. Detours routed outside of the Parkway should be disclosed as a project impact. Regional Parks requests the following be included as mitigation for any recreational impacts described in the Document:

- If the paved trail requires closures, these should be limited to nighttime hours, and that the paved trail be re-opened for morning and daytime commuters.

- Daytime closure of the paved trails require a 14 day advance notice to trail users, via signage at the detour locations, and coordinated with Regional Parks.
- At least one Parkway paved or unpaved trail undercrossing be available, at all times, for walkers, equestrians, and others who should not be detoured through long detours onto the city streets.

If you have any questions please contact Mary Maret at (916) 875-4918 or maretm@saccounty.gov.

Sincerely,

Liz Bellas

Digitally signed by Liz Bellas
DN: cn=Liz Bellas, o=Regional Parks, ou=Regional Parks, email=bellase@saccounty.net, c=US
Date: 2023.07.26 09:21:19 -07'00'

Liz Bellas

07-26-2023 –Sacramento Municipal Utility District

Powering forward. Together.

SMUD

Sent Via E-Mail

July 26, 2023

Jim Allison, Manager of Planning
Capitol Corridor Joint Powers Authority
300 Lakeside Drive, 14th Floor East Oakland, CA 92612
jima@capitolcorridor.org

Subject: **Sacramento to Roseville Third Main Track Project / NOP / 2014072005**

Dear Mr. Allison:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the Notice of Preparation (NOP) for the Sacramento to Roseville Third Main Track Project (Project, SCH 2014072005).

As a Responsible Agency, SMUD's review of projects include supporting the goals of our 2030 Zero Carbon Plan. This plan is a flexible road map to eliminate greenhouse gas emissions from our electricity production by 2030, which is the most ambitious goal of any large utility in the United States, while maintaining reliable and affordable service. This ambitious goal puts the Sacramento region on the map as an example to follow and a region where innovative, climate-friendly businesses want to be. As a community-owned, not-for-profit utility, our customers and community are at the heart of all we do. By pursuing zero carbon, we're helping create a cleaner and healthier region for all.

It is our desire that the Project will acknowledge any impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way
- Utility line routing
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery
- The potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the project area

SMUD HQ | 6201 S Street | P.O. Box 15830 | Sacramento, CA 95852-1830 | 1.888.742.7683 | smud.org

Please see the attached for a list of locations where there is potential for specific SMUD lines to be impacted by the project. SMUD would like to see consideration of our facilities incorporated into the project description.

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD, and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this Project. If you have any questions regarding this letter, please do not hesitate to contact me at 916.732.6676, or by email at rob.ferrera@smud.org.

Sincerely,

Rob Ferrera
Environmental Services Specialist
Sacramento Municipal Utility District
6201 S Street
Sacramento, CA 95817

cc: Entitlements

Attachment

Project Name: Sacramento to Roseville 3rd Track

Project Location: Various

Existing Facilities and Service Arrangements[1]:

- SMUD has existing underground (UG) 21 kV infrastructure and facilities along the south side of the existing tracks from Interstate 5 to 6th Street.
- SMUD has existing UG 115 kV infrastructure and facilities crossing the tracks at 7th Street.
- SMUD has existing UG 21 kV infrastructure and facilities cross the tracks at 7th Street.
- SMUD has an existing overhead (OH) 21 kV circuit crossing the tracks at 14th Street.
- SMUD has existing UG 21 kV infrastructure and facilities crossing the tracks at approximately 18th Street.
- SMUD has existing OH 21 kV circuits along the south side of the tracks from 19th Street to 20th Streets.
- SMUD has an existing OH 21 kV circuit crossing the tracks at 20th Streets.
- SMUD has existing UG 115 kV infrastructure and facilities crossing the tracks at 20th Street.
- SMUD has existing UG 21 kV infrastructure and facilities crossing the tracks at 21st Street.
- SMUD has an existing OH 21 kV circuit crossing the tracks at 29th Street.
- SMUD has an existing OH 21 kV circuit crossing the tracks at Alhambra Blvd.
- SMUD has existing OH 21 kV circuits along the south side of the tracks from Alhambra Blvd to 32nd Street.
- SMUD has existing UG 21 kV infrastructure and facilities along the south side of the tracks from 33rd Street o McKinley Village Way.
- SMUD has an existing UG 21 kV crossing the tracks along the west side of McKinley Village Way.
- SMUD has existing OH 21 kV circuits along the south side of the tracks from McKinley Village Way to C Street.
- SMUD has an existing OH 21 kV crossing the tracks at C St.

[1] The listed existing facilities are estimated and based on the proximity to the existing tracks only and may not contain all potential conflicts without more detailed construction information for the third track.

SMUD HQ | 6201 S Street | P.O. Box 15830 | Sacramento, CA 95852-1830 | 1.888.742.7683 | smud.org

- SMUD has existing OH 21 kV circuits along the west side of the tracks at Business 80.
- SMUD has existing OH 115 kV and 230 kV transmission circuits cross the tracks just north of the American River
- SMUD has existing UG 12kV crossing I80, running parallel to Tribute Road
- SMUD has existing UG 12kV crossing the tracks along Exposition Blvd
- SMUD has existing OH 12kV crossing the tracks from Fee Drive on the east of the tracks to the west of the tracks along Leisure Lane
- SMUD has existing OH 12kV running northeast along the east side of the tracks for about 750' from Fee Drive
- SMUD has existing OH 12kV and 69 kV and secondary crossing the tracks about 150' north of Arden Way
- SMUD has existing OH and UG 12kV and secondary crossing the tracks from Silica Avenue to Dixieanne Avenue
- SMUD has existing OH 12kV and 69kV crossing the tracks about 175' north from El Camino Avenue
- SMUD has existing OH 12kV and 69kV running northeast along the east side of the tracks for about 0.3 miles from El Camino Ave and Auburn Blvd intersection
- SMUD has existing OH secondary at the corner of Auburn Blvd and Glenrose Avenue
- SMUD has existing OH 69kV running along the east side of the tracks, parallel to Roseville Road, for about 3 miles from the corner of Juliesse Avenue and Auburn Blvd to the corner of Winona Way and Roseville Road
- SMUD has existing OH secondary at the corner of Auburn Blvd and Plover Street
- SMUD has existing OH 12kV running northeast along the east side of the tracks, parallel to Roseville Road, for about 1.2 miles from the corner of Auburn Blvd and Marconi Circle
- SMUD has existing OH 12kV and 69kV crossing the tracks from Marconi Circle to Kathleen Avenue
- SMUD has existing OH 69kV running southwest along the west side of the tracks for about 3.8 miles from Foothill Substation
- SMUD has existing OH 12kV and secondary crossing the tracks from Roseville Rd to Craigmont Street
- SMUD has existing OH 69 kV crossing the tracks from Roseville Rd to the corner or Ripley Street and South Avenue
- SMUD has existing OH 12kV and 69 kV and secondary crossing the tracks from Roseville Rd to Harris Avenue
- SMUD has existing OH secondary running along the east side of the tracks for about 385', crossing I80

SMUD HQ | 6201 S Street | P.O. Box 15830 | Sacramento, CA 95852-1830 | 1.888.742.7683 | smud.org

- SMUD has existing OH secondary running along the east side of the tracks for about 0.6 miles, from the end of Harris Avenue to the corner of Roseville Road and Orange Grove Avenue
- SMUD has existing OH 69kV crossing the tracks from McClellan Gas Turbine to the corner of Roseville Road and Winona Way
- SMUD has existing UG 12kV and OH 69kV crossing the tracks from McClellan-Haggin Substation to the corner of Roseville Road and Watt Ave
- SMUD has existing OH secondary running along the west side of the tracks for about 0.7 miles from Dudley Blvd to Watt Avenue
- SMUD has existing OH 12kV and 69 kV and secondary crossing the tracks, running parallel of Watt Avenue
- SMUD has existing OH secondary running along the west side of the tracks for about 610' in between Airbase Drive and Watt Avenue
- SMUD has existing OH secondary running along the west side of the tracks for about 0.5 miles, behind Poplar Blvd
- SMUD has existing OH 12kV running along the west side of the tracks for about 370', behind Poplar Blvd
- SMUD has existing OH 12 kV and 69 kV crossing the tracks from Palm Avenue to A Street
- SMUD has existing OH 12 kV and secondary running on the west side of the tracks for about 0.43 miles behind Santa Fe Way
- SMUD has existing OH 69 kV crossing the tracks from the west side of the tracks to around the corner of Oakhollow Drive and Roseville Road
- SMUD has existing OH 12kV and secondary running along the west side of the tracks from Gilman-Cornelia Substation for about 450'
- SMUD has existing OH 12 kV and secondary crossing the tracks running parallel along Walerga Rd on both the north and south side of Walerga Rd
- SMUD has existing UG 12kV running along the east side of the tracks for about 0.35 miles from Walerga Rd and Roseville Rd intersection to behind the corner of Stagecoach Drive and Marshall Drive
- SMUD has existing OH 69kV crossing the tracks about 380' south of Elkhorn Blvd and about 760' north of Elkhorn Blvd, exiting Foothill Substation
- SMUD has existing UG 12kV crossing the tracks about 170' north from Elkhorn Blvd
- SMUD has existing OH 12 kV and 69kV and secondary crossing the tracks perpendicularly from behind 5149 Ladefonos Ct
- SMUD has existing OH 12kV and secondary running along the west side of the tracks starting about 170' from Antelope Road and going for about 410', then crossing the tracks, continuing along the east side of the tracks for about 0.3 miles
- SMUD has existing OH 12kV and 69 kV and secondary crossing the tracks from Old Antelope North Rd/Poker Lane

SMUD HQ | 6201 S Street | P.O. Box 15830 | Sacramento, CA 95852-1830 | 1.888.742.7683 | smud.org

Future Facilities and/or Impacts[2]:

- SMUD has future construction planned that will add an additional OH 21 kV crossing the tracks at 14th Street.

[2] The future facilities are SUBJECT TO CHANGE.

SMUD HQ | 6201 S Street | P.O. Box 15830 | Sacramento, CA 95852-1830 | 1.888.742.7683 | smud.org

07-26-2023 –E. Wehr

From: Ellen Wehr <eltrescott@hotmail.com>
Date: Wednesday, July 26, 2023 at 7:53 PM
To: James Allison <JimA@capitolcorridor.org>
Subject: Scoping Comments on SR3T SEIR

Hello,
There is not much, if any, relevant information provided in the scoping notice regarding the proposed changes to the Sacramento to Roseville Third Main Track Project. I also just noticed on your website that the meeting date listed on the public mailer was also rescheduled.

Please be sure to include me on your distribution list for the Supplemental EIR, as soon as it is released for public comment.

Thank you,
Ellen Wehr
[please redact the following private contact information if publishing]
eltrescott@hotmail.com
2014 C Street

Sent from Outlook

07-26-2023 –California Department of Fish and Wildlife

DocuSign Envelope ID: 69F6BCFC-3017-4001-BB5B-95212B9DF41D

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670-4599
916-358-2900
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 26, 2023

Jim Allison
Manager of Planning
Capitol Corridor Joint Powers Authority
300 Lakeside Drive, 14th Floor East
Oakland, CA 92612
jima@capitolcorridor.org

Subject: Sacramento to Roseville Third Main Track- DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT (DSEIR)
SCH# 2014072005

Dear Jim Allison:

The California Department of Fish and Wildlife (CDFW) received and reviewed the Notice of Preparation of a Supplemental Environmental Impact Report (SEIR) from Capitol Corridor Joint Powers Authority for the Sacramento to Roseville Third Main Track (Project) in Sacramento and Placer counties pursuant the California Environmental Quality Act (CEQA) statute and guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish, wildlife, plants and their habitats. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may need to exercise its own regulatory authority under the Fish and Game Code (Fish & G. Code).

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802.). Similarly, for purposes of CEQA, CDFW provides, as available, biological expertise during public agency environmental

1 CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW may also act as a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

PROJECT DESCRIPTION SUMMARY

The Project site is located in Sacramento County and Placer County between the existing Sacramento Valley Station and the existing City of Roseville Station.

The Project consists of the construction and operation of approximately 17.8 miles of new main track within the existing rail corridor and identifies multiple improvements including minor reconfiguration of the City of Roseville Station to accommodate increased Capitol Corridor service in the future, grading and installation of new subgrade and drainage, placement of new rail and ties, special track work with turnouts, crossovers and associated switches and equipment, new wayside track signals, and eleven replaced railroad bridges, including a new bridge across the American River in Sacramento.

The SEIR contains only information necessary to make the previously circulated EIR adequate for the Project as revised. The Project SEIR covers two project components. The Elvas Railroad Bridge Crossings and Passenger Train Layover Facility. Supplemental analysis of the Elvas Railroad Bridge Crossings addresses three railroad bridge crossings across State Route 51 (SR-51) to accommodate changes in project design associated with the SR-51 and Project. Additionally, the original Project EIR contemplated a passenger train layover facility adjacent to Old Town Roseville, located along the west leg of the Union Pacific (UP) wye track connecting the UP Roseville Subdivision with the UP Valley Subdivision. Supplemental analysis of the Passenger Train Layover Facility details a revised location for the proposed passenger train layover facility.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations presented below to assist the Capitol Corridor Joint Powers Authority in adequately identifying and/or mitigating the Project's significant, or potentially significant, impacts on biological resources. The comments and recommendations are also offered to enable CDFW to adequately review and comment on the proposed Project with respect to impacts on biological resources. CDFW recommends that the forthcoming SEIR address the following:

Project Description

The Project description should include the whole action as defined in the CEQA Guidelines § 15378 and should include appropriate detailed exhibits disclosing the Project area including temporary impacted areas such as equipment stage area, spoils areas, adjacent infrastructure development, staging areas and access and haul roads if applicable.

As required by § 15126.6 of the CEQA Guidelines, the SEIR should include an appropriate range of reasonable and feasible alternatives that would attain most of the basic Project objectives and avoid or minimize significant impacts to resources under CDFW's jurisdiction.

Assessment of Biological Resources

Section 15125(c) of the CEQA Guidelines states that knowledge of the regional setting of a project is critical to the assessment of environmental impacts and that special emphasis should be placed on environmental resources that are rare or unique to the region. To enable CDFW staff to adequately review and comment on the Project, the SEIR should include a complete assessment of the flora and fauna within and adjacent to the Project footprint, with emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats. CDFW recommends the SEIR specifically include:

1. An assessment of all habitat types located within the Project footprint, and a map that identifies the location of each habitat type. CDFW recommends that floristic, alliance- and/or association-based mapping and assessment be completed following, *The Manual of California Vegetation*, second edition (Sawyer 2009). Adjoining habitat areas should also be included in this assessment where site activities could lead to direct or indirect impacts offsite. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

2. A general biological inventory of the fish, amphibian, reptile, bird, and mammal species that are present or have the potential to be present within each habitat type onsite and within adjacent areas that could be affected by the Project. CDFW recommends that the California Natural Diversity Database (CNDDB), as well as previous studies performed in the area, be consulted to assess the potential presence of sensitive species and habitats. A nine United States Geologic Survey 7.5-minute quadrangle search is recommended to determine what may occur in the region, larger if the Project area extends past one quad (see *Data Use Guidelines* on the Department webpage www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data). Please review the webpage for information on how to access the database to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code, in the vicinity of the Project. CDFW recommends that CNDDB Field Survey Forms be completed and submitted to

CNDDB to document survey results. Online forms can be obtained and submitted at: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data.

Please note that CDFW's CNDDB is not exhaustive in terms of the data it houses, nor is it an absence database. CDFW recommends that it be used as a starting point in gathering information about the *potential presence* of species within the general area of the Project site. Other sources for identification of species and habitats near or adjacent to the Project area should include, but may not be limited to, State and federal resource agency lists, California Wildlife Habitat Relationship System, California Native Plant Society Inventory, agency contacts, environmental documents for other projects in the vicinity, academics, and professional or scientific organizations.

3. A complete and recent inventory of rare, threatened, endangered, and other sensitive species located within the Project footprint and within offsite areas with the potential to be affected, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code § § 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition (CEQA Guidelines § 15380). The inventory should address seasonal variations in use of the Project area and should not be limited to resident species. The EIR should include the results of focused species-specific surveys, completed by a qualified biologist and conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable. Species-specific surveys should be conducted in order to ascertain the presence of species with the potential to be directly, indirectly, on or within a reasonable distance of the Project activities. CDFW recommends the Capitol Corridor Joint Powers Authority rely on survey and monitoring protocols and guidelines available at: www.wildlife.ca.gov/Conservation/Survey-Protocols. Alternative survey protocols may be warranted; justification should be provided to substantiate why an alternative protocol is necessary. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service, where necessary. Some aspects of the Project may warrant periodic updated surveys for certain sensitive taxa, particularly if the Project is proposed to occur over a protracted time frame, or in phases, or if surveys are completed during periods of drought or deluge.

4. A thorough, recent (within the last two years), floristic-based assessment of special-status plants and natural communities, following CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see www.wildlife.ca.gov/Conservation/Plants).

5. Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region (CEQA Guidelines § 15125[c]).

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

The SEIR should provide a thorough discussion of the Project's potential direct, indirect, and cumulative impacts on biological resources. To ensure that Project impacts on biological resources are fully analyzed, the following information should be included in the SEIR:

1. The SEIR should define the threshold of significance for each impact and describe the criteria used to determine whether the impacts are significant (CEQA Guidelines, § 15064, subd. (f)). The SEIR must demonstrate that the significant environmental impacts of the Project were adequately investigated and discussed, and it must permit the significant effects of the Project to be considered in the full environmental context.

2. A discussion of potential impacts from lighting, noise, human activity, and wildlife-human interactions created by Project activities especially those adjacent to natural areas, exotic and/or invasive species occurrences, and drainages. The SEIR should address Project-related changes to drainage patterns and water quality within, upstream, and downstream of the Project site, including: volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-Project fate of runoff from the Project site.

3. A discussion of potential indirect Project impacts on biological resources, including resources in areas adjacent to the Project footprint, such as nearby public lands (e.g., National Forests, State Parks, etc.), open space, adjacent natural habitats, riparian ecosystems, wildlife corridors, and any designated and/or proposed reserve or mitigation lands (e.g., preserved lands associated with a Conservation or Recovery Plan, or other conserved lands).

4. A cumulative effects analysis developed as described under CEQA Guidelines section 15130. The SEIR should discuss the Project's cumulative impacts to natural resources and determine if that contribution would result in a significant impact. The SEIR should include a list of present, past, and probable future projects producing related impacts to biological resources or shall include a summary of the projections contained in an adopted local, regional, or statewide plan, that consider conditions contributing to a cumulative effect. The cumulative analysis shall include impact analysis of vegetation and habitat reductions within the area and their potential cumulative effects. Please include all potential direct and indirect Project-related impacts to riparian areas, wetlands, wildlife corridors or wildlife movement areas, aquatic habitats, sensitive species and/or special-status species, open space, and adjacent natural habitats in the cumulative effects analysis.

Mitigation Measures for Project Impacts to Biological Resources

The SEIR should include appropriate and adequate avoidance, minimization, and/or mitigation measures for all direct, indirect, and cumulative impacts that are expected to occur as a result of the construction and long-term operation and maintenance of the Project. CDFW also recommends the environmental documentation provide scientifically supported discussion regarding adequate avoidance, minimization, and/or mitigation measures to address the Project's significant impacts upon fish and wildlife and their habitat. For individual projects, mitigation must be roughly proportional to the level of impacts, including cumulative impacts, in accordance with the provisions of CEQA (Guidelines § § 15126.4(a)(4)(B), 15064, 15065, and 16355). In order for mitigation measures to be effective, they must be specific, enforceable, and feasible actions that will improve environmental conditions. When proposing measures to avoid, minimize, or mitigate impacts, CDFW recommends consideration of the following:

1. *Fully Protected Species*: Several Fully Protected Species (Fish & G. Code § 3511) have the potential to occur within or adjacent to the Project area, including, but not limited to: White-tailed kite (*Elanus leucurus*), Fully protected species may not be taken or possessed at any time. Project activities described in the SEIR should be designed to completely avoid any fully protected species that have the potential to be present within or adjacent to the Project area. CDFW also recommends the SEIR fully analyze potential adverse impacts to fully protected species due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends that the Capitol Corridor Joint Powers Authority include in the analysis how appropriate avoidance, minimization and mitigation measures will reduce indirect impacts to fully protected species.

2. *Species of Special Concern*: Several Species of Special Concern (SSC) have the potential to occur within or adjacent to the Project area, including, but not limited to: western spadefoot (*Spea hammondii*), and western pond turtle (*Emys marmorata*). Project activities described in the SEIR should be designed to avoid any SSC that have the potential to be present within or adjacent to the Project area. CDFW also recommends that the SEIR fully analyze potential adverse impacts to SSC due to habitat modification, loss of foraging habitat, and/or interruption of migratory and breeding behaviors. CDFW recommends the Capitol Corridor Joint Powers Authority include in the analysis how appropriate avoidance, minimization and mitigation measures will reduce impacts to SSC.

3. *Sensitive Plant Communities*: CDFW considers sensitive plant communities to be imperiled habitats having both local and regional significance. Plant communities, alliances, and associations with a statewide ranking of S-1, S-2, S-3, and S-4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by querying the CNDDB and are included in *The Manual of California Vegetation* (Sawyer 2009). The SEIR should include

measures to fully avoid and otherwise protect sensitive plant communities from Project-related direct and indirect impacts.

4. *Native Wildlife Nursey Sites:* CDFW recommends the SEIR fully analyze potential adverse impacts to native wildlife nursey sites, including but not limited to bat maternity roosts. Based on review of Project materials, aerial photography, and observation of the site from public roadways, the Project site contains potential nursery site habitat for structure and tree roosting bats and is near potential foraging habitat. Bats are considered non-game mammals and are afforded protection by state law from take and/or harassment, (Fish & G. Code, § 4150; Cal. Code of Regs, § 251.1). CDFW recommends that the SEIR fully identify the Project's potential impacts to native wildlife nursery sites, and include appropriate avoidance, minimization and mitigation measures to reduce impacts or mitigate any potential significant impacts to bat nursery sites.

5. *Mitigation*: CDFW considers adverse Project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the SEIR should include mitigation measures for adverse Project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, onsite habitat restoration, enhancement, or permanent protection should be evaluated and discussed in detail. If onsite mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, offsite mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

   The SEIR should include measures to perpetually protect the targeted habitat values within mitigation areas from direct and indirect adverse impacts in order to meet mitigation objectives to offset Project-induced qualitative and quantitative losses of biological values. Specific issues that should be addressed include restrictions on access, proposed land dedications, long-term monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

6. *Habitat Revegetation/Restoration Plans*: Plans for restoration and revegetation should be prepared by persons with expertise in the regional ecosystems and native plant restoration techniques. Plans should identify the assumptions used to develop the proposed restoration strategy. Each plan should include, at a minimum: (a) the location of restoration sites and assessment of appropriate reference sites; (b) the plant species to be used, sources of local propagules, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) a local seed and cuttings and planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the

mitigation site in perpetuity. Monitoring of restoration areas should extend across a sufficient time frame to ensure that the new habitat is established, self-sustaining, and capable of surviving drought.

CDFW recommends that local onsite propagules from the Project area and nearby vicinity be collected and used for restoration purposes. Onsite seed collection should be appropriately timed to ensure the viability of the seeds when planted. Onsite vegetation mapping at the alliance and/or association level should be used to develop appropriate restoration goals and local plant palettes. Reference areas should be identified to help guide restoration efforts. Specific restoration plans should be developed for various Project components as appropriate. Restoration objectives should include protecting special habitat elements or re-creating them in areas affected by the Project. Examples may include retention of woody material, logs, snags, rocks, and brush piles. Fish and Game Code sections 1002, 1002.5 and 1003 authorize CDFW to issue permits for the take or possession of plants and wildlife for scientific, educational, and propagation purposes. Please see our website for more information on Scientific Collecting Permits at www.wildlife.ca.gov/Licensing/Scientific-Collecting#53949678-regulations-.

7. *Nesting Birds:* Please note that it is the Project proponent's responsibility to comply with all applicable laws related to nesting birds and birds of prey. Migratory non-game native bird species are protected by international treaty under the federal Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703 *et seq.*). CDFW implemented the MBTA by adopting the Fish and Game Code section 3513. Fish and Game Code sections 3503, 3503.5 and 3800 provide additional protection to nongame birds, birds of prey, their nests and eggs. Sections 3503, 3503.5, and 3513 of the Fish and Game Code afford protective measures as follows: section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Fish and Game Code or any regulation made pursuant thereto; section 3503.5 states that is it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the Fish and Game Code or any regulation adopted pursuant thereto; and section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

   Potential habitat for nesting birds and birds of prey is present within the Project area. The Project should disclose all potential activities that may incur a direct or indirect take to nongame nesting birds within the Project footprint and its vicinity. Appropriate avoidance, minimization, and/or mitigation measures to avoid take must be included in the SEIR.

CDFW recommends the SEIR include specific avoidance and minimization measures to ensure that impacts to nesting birds or their nests do not occur. Project-specific avoidance and minimization measures may include, but not be limited to: Project phasing and timing, monitoring of Project-related noise (where applicable), sound walls, and buffers, where appropriate. The SEIR should also include specific avoidance and minimization measures that will be implemented should a nest be located within the Project site. In addition to larger, protocol level survey efforts (e.g., Swainson's hawk surveys) and scientific assessments, CDFW recommends a final preconstruction survey be required no more than three (3) days prior to vegetation clearing or ground disturbance activities, as instances of nesting could be missed if surveys are conducted earlier.

8. *Moving out of Harm's Way:* The Project is anticipated to result in the clearing of natural habitats that support native species. To avoid direct mortality, the Capitol Corridor Joint Powers Authority should state in the SEIR a requirement for a qualified biologist with the proper handling permits, will be retained to be onsite prior to and during all ground- and habitat-disturbing activities. Furthermore, the SEIR should describe that the qualified biologist with the proper permits may move out of harm's way special-status species or other wildlife of low or limited mobility that would otherwise be injured or killed from Project-related activities, as needed. The SEIR should also describe qualified biologist qualifications and authorities to stop work to prevent direct mortality of special-status species. CDFW recommends fish and wildlife species be allowed to move out of harm's way on their own volition, if possible, and to assist their relocation as a last resort. It should be noted that the temporary relocation of onsite wildlife does not constitute effective mitigation for habitat loss.

9. *Translocation of Species*: CDFW generally does not support the use of relocation, salvage, and/or transplantation as the sole mitigation for impacts to rare, threatened, or endangered species as these efforts are generally experimental in nature and largely unsuccessful. Therefore, the SEIR should describe additional mitigation measures utilizing habitat restoration, conservation, and/or preservation, in addition to avoidance and minimization measures, if it is determined that there may be impacts to rare, threatened, or endangered species.

The SEIR should incorporate mitigation performance standards that would ensure that impacts are reduced to a less-than-significant level. Mitigation measures proposed in the SEIR should be made a condition of approval of the Project. Please note that obtaining a permit from CDFW by itself with no other mitigation proposal may constitute mitigation deferral. CEQA Guidelines section 15126.4, subdivision (a)(1)(b) states that formulation of mitigation measures should not be deferred until some future time. To avoid deferring mitigation in this way, the SEIR should describe avoidance, minimization and mitigation measures that would be implemented should the impact occur.

California Endangered Species Act

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to CESA. CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in "take" (Fish & G. Code § 86 defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") of State-listed CESA species, either through construction or over the life of the Project.

State-listed species with the potential to occur in the area include, but are not limited to: tricolored blackbird (*Agelaius tricolor*) and Swainson's hawk (*Buteo swainsoni*).

The SEIR should disclose the potential of the Project to take State-listed species and how the impacts will be avoided, minimized, and mitigated. Please note that mitigation measures that are adequate to reduce impacts to a less-than significant level to meet CEQA requirements may not be enough for the issuance of an ITP. To facilitate the issuance of an ITP, if applicable, CDFW recommends the SEIR include measures to minimize and fully mitigate the impacts to any State-listed species the Project has potential to take. CDFW encourages early consultation with staff to determine appropriate measures to facilitate future permitting processes and to engage with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service to coordinate specific measures if both State and federally listed species may be present within the Project vicinity.

Native Plant Protection Act

The Native Plant Protection Act (Fish & G. Code §1900 *et seq.*) prohibits the take or possession of State-listed rare and endangered plants, including any part or product thereof, unless authorized by CDFW or in certain limited circumstances. Take of State-listed rare and/or endangered plants due to Project activities may only be permitted through an ITP or other authorization issued by CDFW pursuant to California Code of Regulations, Title 14, section 786.9 subdivision (b).

Lake and Streambed Alteration Program

The SEIR should identify all perennial, intermittent, and ephemeral rivers, streams, lakes, other hydrologically connected aquatic features, and any associated biological resources/habitats present within the entire Project footprint (including utilities, access and staging areas). The environmental document should analyze all potential temporary, permanent, direct, indirect and/or cumulative impacts to the above-mentioned features and associated biological resources/habitats that may occur because of the Project. If it is determined the Project will result in significant impacts to these resources the SEIR shall propose appropriate avoidance, minimization and/or mitigation measures to reduce impacts to a less-than-significant level.

Section 1602 of the Fish and Game Code requires an entity to notify CDFW prior to commencing any activity that may do one or more of the following:

1. Substantially divert or obstruct the natural flow of any river, stream or lake;
2. Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or
3. Deposit debris, waste or other materials where it may pass into any river, stream or lake.

Please note that "any river, stream or lake" includes those that are episodic (i.e., those that are dry for periods of time) as well as those that are perennial (i.e., those that flow year-round). This includes ephemeral streams and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

If upon review of an entity's notification, CDFW determines that the Project activities may substantially adversely affect an existing fish or wildlife resource, a Lake or Streambed Alteration (LSA) Agreement will be issued which will include reasonable measures necessary to protect the resource. CDFW's issuance of an LSA Agreement is a "project" subject to CEQA (see Pub. Resources Code 21065). To facilitate issuance of an LSA Agreement, if one is necessary, the SEIR should fully identify the potential impacts to the lake, stream, or riparian resources, and provide adequate avoidance, mitigation, and monitoring and reporting commitments. Early consultation with CDFW is recommended, since modification of the Project may avoid or reduce impacts to fish and wildlife resources. All LSA Notification types must be submitted online through CDFW's Environmental Permit Information Management System (EPIMS). For more information about EPIMS, please visit https://wildlife.ca.gov/Conservation/Environmental-Review/EPIMS. More information about LSA Notifications, paper forms and fees may be found at https://www.wildlife.ca.gov/Conservation/Environmental-Review/LSA.

Please note that other agencies may use specific methods and definitions to determine impacts to areas subject to their authorities. These methods and definitions often do not include all needed information for CDFW to determine the extent of fish and wildlife resources affected by activities subject to Notification under Fish and Game Code section 1602. Therefore, CDFW does not recommend relying solely on methods developed specifically for delineating areas subject to other agencies' jurisdiction (such as United States Army Corps of Engineers) when mapping lakes, streams, wetlands, floodplains, riparian areas, etc. in preparation for submitting a Notification of an LSA.

CDFW relies on the lead agency environmental document analysis when acting as a responsible agency issuing an LSA Agreement. CDFW recommends lead agencies coordinate with us as early as possible, since potential modification of the proposed Project may avoid or reduce impacts to fish and wildlife resources and expedite the Project approval process.

The following information will be required for the processing of an LSA Notification and CDFW recommends incorporating this information into any forthcoming CEQA document(s) to avoid subsequent documentation and Project delays:

1. Mapping and quantification of lakes, streams, and associated fish and wildlife habitat (e.g., riparian habitat, freshwater wetlands, etc.) that will be temporarily and/or permanently impacted by the Project, including impacts from access and staging areas. Please include an estimate of impact to each habitat type.

2. Discussion of specific avoidance, minimization, and mitigation measures to reduce Project impacts to fish and wildlife resources to a less-than-significant level. Please refer to section 15370 of the CEQA Guidelines.

Based on review of Project materials, aerial photography and observation of the site from public roadways, portions of the Project site are adjacent to the American River, Dry Creek and their associated riparian habitats. CDFW recommends the SEIR fully identify the Project's potential impacts to the stream and/or its associated vegetation and wetlands.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDB. The CNNDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be submitted online or mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov.

FILING FEES

The Project, as proposed, would have an effect on fish and wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Capitol Corridor Joint Powers Authority and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

Pursuant to Public Resources Code sections 21092 and 21092.2, CDFW requests written notification of proposed actions and pending decisions regarding the Project. Written notifications shall be directed to: California Department of Fish and Wildlife North Central Region, 1701 Nimbus Road, Rancho Cordova, CA 95670.

CDFW appreciates the opportunity to comment on the Notice of Preparation of the SEIR for the Sacramento to Roseville Third Main Track and recommends that the Capitol Corridor Joint Powers Authority address CDFW's comments and concerns in the forthcoming SEIR. CDFW personnel are available for consultation regarding biological resources and strategies to minimize impacts.

If you have any questions regarding the comments provided in this letter or wish to schedule a meeting and/or site visit, please contact Ben Huffer, Environmental Scientist at (916) 216-6253 or Benjamin.huffer@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Tanya Sheya
1ABC45303752499...

Tanya Sheya
Environmental Program Manager

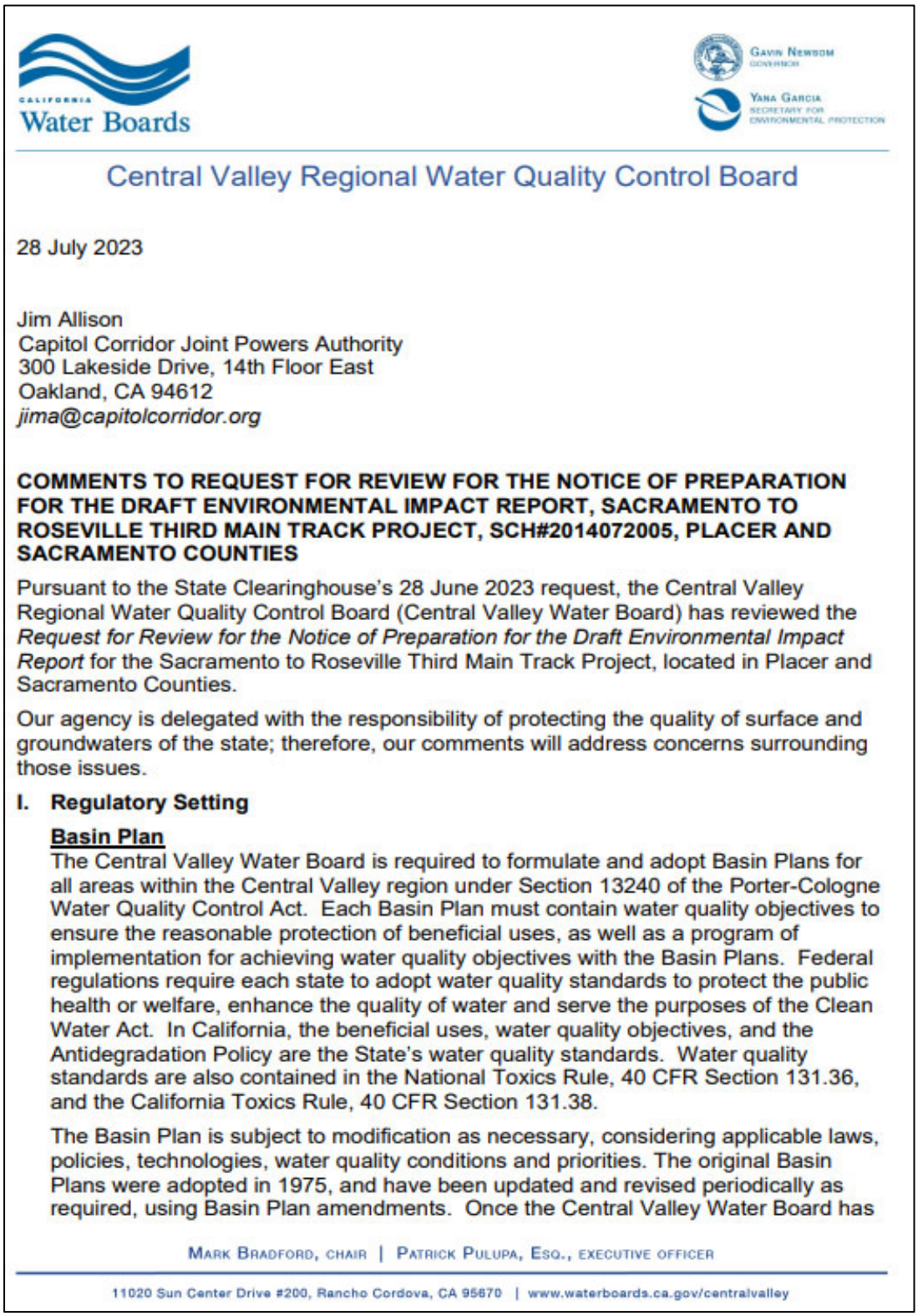
ec: Dylan Wood, Senior Environmental Scientist (Supervisory)
dylan.wood@wildlife.ca.gov
Patrick Moeszinger, Senior Environmental Scientist (Specialist)
patrick.moeszinger@wildlife.ca.gov
Ben Huffer, Environmental Scientist
benjamin.huffer@wildlife.ca.gov
Department of Fish and Wildlife

Office of Planning and Research, State Clearinghouse, Sacramento

Literature Cited

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, 2nd ed. California Native Plant Society Press, Sacramento, California. http://vegetation.cnps.org/

07-28-2023 – Central Valley Regional Water Quality Control Board



CALIFORNIA Water Boards

Gavin Newsom, Governor
Yana Garcia, Secretary for Environmental Protection

Central Valley Regional Water Quality Control Board

28 July 2023

Jim Allison
Capitol Corridor Joint Powers Authority
300 Lakeside Drive, 14th Floor East
Oakland, CA 94612
jima@capitolcorridor.org

COMMENTS TO REQUEST FOR REVIEW FOR THE NOTICE OF PREPARATION FOR THE DRAFT ENVIRONMENTAL IMPACT REPORT, SACRAMENTO TO ROSEVILLE THIRD MAIN TRACK PROJECT, SCH#2014072005, PLACER AND SACRAMENTO COUNTIES

Pursuant to the State Clearinghouse's 28 June 2023 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Request for Review for the Notice of Preparation for the Draft Environmental Impact Report* for the Sacramento to Roseville Third Main Track Project, located in Placer and Sacramento Counties.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore, our comments will address concerns surrounding those issues.

I. Regulatory Setting

Basin Plan

The Central Valley Water Board is required to formulate and adopt Basin Plans for all areas within the Central Valley region under Section 13240 of the Porter-Cologne Water Quality Control Act. Each Basin Plan must contain water quality objectives to ensure the reasonable protection of beneficial uses, as well as a program of implementation for achieving water quality objectives with the Basin Plans. Federal regulations require each state to adopt water quality standards to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act. In California, the beneficial uses, water quality objectives, and the Antidegradation Policy are the State's water quality standards. Water quality standards are also contained in the National Toxics Rule, 40 CFR Section 131.36, and the California Toxics Rule, 40 CFR Section 131.38.

The Basin Plan is subject to modification as necessary, considering applicable laws, policies, technologies, water quality conditions and priorities. The original Basin Plans were adopted in 1975, and have been updated and revised periodically as required, using Basin Plan amendments. Once the Central Valley Water Board has

Mark Bradford, chair | Patrick Pulupa, Esq., executive officer

11020 Sun Center Drive #200, Rancho Cordova, CA 95670 | www.waterboards.ca.gov/centralvalley

adopted a Basin Plan amendment in noticed public hearings, it must be approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and in some cases, the United States Environmental Protection Agency (USEPA). Basin Plan amendments only become effective after they have been approved by the OAL and in some cases, the USEPA. Every three (3) years, a review of the Basin Plan is completed that assesses the appropriateness of existing standards and evaluates and prioritizes Basin Planning issues. For more information on the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins*, please visit our website:
http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/

Antidegradation Considerations
All wastewater discharges must comply with the Antidegradation Policy (State Water Board Resolution 68-16) and the Antidegradation Implementation Policy contained in the Basin Plan. The Antidegradation Implementation Policy is available on page 74 at:
https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf

In part it states:

Any discharge of waste to high quality waters must apply best practicable treatment or control not only to prevent a condition of pollution or nuisance from occurring, but also to maintain the highest water quality possible consistent with the maximum benefit to the people of the State.

This information must be presented as an analysis of the impacts and potential impacts of the discharge on water quality, as measured by background concentrations and applicable water quality objectives.

The antidegradation analysis is a mandatory element in the National Pollutant Discharge Elimination System and land discharge Waste Discharge Requirements (WDRs) permitting processes. The environmental review document should evaluate potential impacts to both surface and groundwater quality.

II. Permitting Requirements

Construction Storm Water General Permit
Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit), Construction General Permit Order No. 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). For more information on the Construction General Permit, visit the

State Water Resources Control Board website at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACE). If a Section 404 permit is required by the USACE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements. If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACE permit (e.g., Non-Reporting Nationwide Permit, Nationwide Permit, Letter of Permission, Individual Permit, Regional General Permit, Programmatic General Permit), or any other federal permit (e.g., Section 10 of the Rivers and Harbors Act or Section 9 from the United States Coast Guard), is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications. For more information on the Water Quality Certification, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

Waste Discharge Requirements – Discharges to Waters of the State

If USACE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project may require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation. For more information on the Waste Discharges to Surface Water NPDES Program and WDR processes, visit the Central Valley Water Board website at:https://www.waterboards.ca.gov/centralvalley/water_issues/waste_to_surface_water/

Projects involving excavation or fill activities impacting less than 0.2 acre or 400 linear feet of non-jurisdictional waters of the state and projects involving dredging activities impacting less than 50 cubic yards of non-jurisdictional waters of the state may be eligible for coverage under the State Water Resources Control Board Water Quality Order No. 2004-0004-DWQ (General Order 2004-0004). For more information on the General Order 2004-0004, visit the State Water Resources

Control Board website at:
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2004/wqo/wqo2004-0004.pdf

Dewatering Permit

If the proposed project includes construction or groundwater dewatering to be discharged to land, the proponent may apply for coverage under State Water Board General Water Quality Order (Low Threat General Order) 2003-0003 or the Central Valley Water Board's Waiver of Report of Waste Discharge and Waste Discharge Requirements (Low Threat Waiver) R5-2018-0085. Small temporary construction dewatering projects are projects that discharge groundwater to land from excavation activities or dewatering of underground utility vaults. Dischargers seeking coverage under the General Order or Waiver must file a Notice of Intent with the Central Valley Water Board prior to beginning discharge.

For more information regarding the Low Threat General Order and the application process, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2003/wqo/wqo2003-0003.pdf

For more information regarding the Low Threat Waiver and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/waivers/r5-2018-0085.pdf

Limited Threat General NPDES Permit

If the proposed project includes construction dewatering and it is necessary to discharge the groundwater to waters of the United States, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Dewatering discharges are typically considered a low or limited threat to water quality and may be covered under the General Order for *Limited Threat Discharges to Surface Water* (Limited Threat General Order). A complete Notice of Intent must be submitted to the Central Valley Water Board to obtain coverage under the Limited Threat General Order. For more information regarding the Limited Threat General Order and the application process, visit the Central Valley Water Board website at:
https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2016-0076-01.pdf

NPDES Permit

If the proposed project discharges waste that could affect the quality of surface waters of the State, other than into a community sewer system, the proposed project will require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. A complete Report of Waste Discharge must be submitted with the Central Valley Water Board to obtain a NPDES Permit. For more information regarding the NPDES Permit and the application process, visit the Central Valley Water Board website at: https://www.waterboards.ca.gov/centralvalley/help/permit/

If you have questions regarding these comments, please contact me at (916) 464-4684 or Peter.Minkel2@waterboards.ca.gov.

Peter Minkel

Peter Minkel
Engineering Geologist

cc: State Clearinghouse unit, Governor's Office of Planning and Research, Sacramento

07-28-2023 – J. Legnitto

From: jlegnitto@aol.com <jlegnitto@aol.com>
Date: Friday, July 28, 2023 at 3:44 PM
To: James Allison <JimA@capitolcorridor.org>
Subject: Comments on Sacramento to Roseville Third Main Track Project

Good afternoon Mr. Allison:

Based on what I've read about the Sacramento to Roseville Third Main Track Project and your answers to my questions, I have several concerns which I hope that you and your team will consider as plans for the project move forward.

TRAFFIC AND TRAFFIC SAFETY Many times a day, traffic is backed up on Atlantic Street between Yosemite Street and Tiger Way. This often occurs due to commuter traffic and school traffic from Adelante High School and Roseville High School coupled with delays in crossing those two streets due to train traffic. There's also frequent speeding between the two stoplights along that stretch of Atlantic Street. Consequently, it's often difficult for residents in this area to safely merge into vehicle traffic on Atlantic Street. Between July 21, 2021 and July 21, 2023, the Roseville Police Department reported 10 accidents there -- seven at the Yosemite Street intersection and three at the Tiger Way intersection. My question is whether the impact of the Third Main Track Project on the traffic problems at those locations has been studied. And what the project proposes to prevent them from becoming worse while it is under construction and after it becomes operational.

PARKING Over the past decade, parking for residents who live on and off Atlantic Street between Yosemite Street and Tiger Way has become a critical issue. Due to the increase in commercial and residential development there, as well as the parking shortage created by two high schools, residents in this neighborhood are frequently unable to find parking places in front of their own homes. Last year, when the City of Roseville asked for comments on its Atlantic Street Corridor Specific Plan, there was so much feedback from owners about the parking crisis that the City decided not to revise its parking standards in this area. My questions are whether the project has studied how much additional parking will be needed during the construction phase of the Third Main Track Project. And, once the project is operational, whether the 22 parking spaces for the alternate passenger layover facility will be adequate to accommodate commuters' vehicles without spilling over into the residential neighborhood of Enwood along Atlantic Street.

DIESEL FUMES I understand that the diesel fumes are effectively the same in the old location as in the new location. What we're concerned about in our neighborhood is any installation that adds more diesel fumes to the air that we breathe. During the Zoom presentation for the project, you mentioned that diesel powered trains idling for maintenance at the new location would produce diesel fumes for 10 minutes before shutting down. It's the experience of residents who live along Atlantic Street between Yosemite Street and Tiger Way that we are already exposed to unhealthy levels of diesel fumes day from idling trains due to the large volume of train traffic there both day and night. During a recent three month stay in Roseville, I could smell diesel fumes in my home in the middle of the night with all the windows closed. My question is what is being done to study the health effects of diesel fume emissions at the new location.

Thank you for your consideration of these issues.

Sincerely,

Jan Legnitto

07-28-2023 – Sacramento Metropolitan Air Quality Management District

SACRAMENTO METROPOLITAN
AIR QUALITY
MANAGEMENT DISTRICT

July 28, 2023

Jim Allison, Manager of Planning
Capitol Corridor Joint Powers Authority
300 Lakeside Drive, 14th Floor East
Oakland, CA 92612

Subject: **Sacramento to Roseville Third Main Track**
State Clearinghouse # 2014072005

Dear Jim Allison:

Thank you for providing the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) with the opportunity to review the Notice of Preparation (NOP) for a Supplemental Environmental Impact Report (SEIR) for the Sacramento to Roseville Third Main Track Project, which focuses on further improvements to the existing project to add 17.8 miles of new main track to the rail corridor between Sacramento and Roseville. Further improvements include design changes to the railroad bridge crossings in the vicinity of Elvas Avenue in Sacramento County, and a revised location for the passenger train layover facility near Roseville.

Please reference Sac Metro Air District's guidance on reviewing projects under CEQA, The Guide to Air Quality Assessment in Sacramento County (CEQA Guide), in preparing the SEIR. Following are recommendations for use of the CEQA Guide in the SEIR's analysis of criteria pollutant and greenhouse gas (GHG) emissions.

Criteria Pollutant Analysis
If CEQA analysis demonstrates that the change in Sacramento County project emissions, over the original 2015 project EIR, will exceed applicable Sac Metro Air District thresholds of significance for federal and state ambient air quality standards for pollutants (criteria pollutants), we recommend mitigating associated impacts using methods referenced in the CEQA Guide's chapter on Construction-Generated Criteria Air Pollutant and Precursor Emissions and the CEQA Guide's chapter on Operational Criteria Air Pollutant and Precursor Emissions. Additionally, projects must implement Sac Metro Air District Basic Construction Emission Control Practices as best management practices in order to use Sac Metro Air District's non-zero particulate matter thresholds of significance. These are also helpful to ensure compliance with Sac Metro Air District's Rule 403, Fugitive Dust.

Climate Change Analysis
If CEQA analysis demonstrates that the change in project emissions of GHGs in Sacramento County will exceed applicable Sac Metro Air District thresholds of significance we recommend mitigating associated impacts using mitigation methods referenced in the CEQA Guide's chapter on GHG Emissions.

777 12th Street, Ste. 300 • Sacramento, CA 95814
Tel: 279-207-1122 • Toll Free: 800-880-9025
AirQuality.org

Conclusion
Thank you for your attention to our comments. If you have questions about them, please contact me at mwright@airquality.org or 279-207-1122.

Sincerely,

Molly Wright

Molly Wright, AICP
Air Quality Planner / Analyst

c: Paul Philley, AICP, Program Supervisor, Sac Metro Air District

08-08-2023 – R. Dodd

From: Randy D <randy5550@outlook.com>
Date: Tuesday, August 8, 2023 at 7:38 PM
To: James Allison <JimA@capitolcorridor.org>
Subject: mail list

Hey Jim.

I believe I am on the mail list for the Sac to Roseville third track project.

Can you please remove me from the postal mailings for that?

Randy Dodd
1860 Sierra Gardens Dr Unit 651
Roseville CA 95661

thanks.

08-09-2023 – M. Pennington-Hoyt

From: mary penningtonhoyt <marypenningtonhoyt@gmail.com>
Sent: Wednesday, August 9, 2023 9:08 AM
To: James Allison <JimA@capitolcorridor.org>
Subject: Sacramento to Roseville Third Track Project phase 1-02

Greetings!

I jointly own the house with my parents located at 6304 Longdale Drive North Highlands California. They informed me of the future light rail project behind their property and I have been reviewing the project documentation online.

Can you help me to understand the timelines of the project as well as any potential to assist with noise mitigation given the additional train traffic that will be forthcoming? In addition the drawings show a proposed mt3 and a future MT line. What is the difference? The proposed is right next to their property line.

My parents are seniors and just don't have the capability to understand zoom meetings and how to access qr codes etc. Is there a way for them to obtain hard copies of the documents?

Appreciate your guidance on this matter as they have obvious concerns here along with their neighbors.

Thank you

Mary Pennington-Hoyt

08-14-2023 – San Joaquin Regional Transit District

From: Erica Smith <esmith@sjRTD.com>
Date: Monday, August 14, 2023 at 3:35 PM
To: James Allison <JimA@capitolcorridor.org>
Subject: Updated Mailing Address for RTD

Jim:

I received a postcard addressed to our CEO at our former PO BOX.

Our updated mailing address is in my signature below.

We received the postcard after the meeting on 7/24.

Thank you,

Erica Smith
Executive and Board Support Specialist
San Joaquin Regional Transit District (RTD)
421 E. Weber Ave., Stockton, CA 95202
(209) 467-6619
esmith@sjRTD.com
www.sjRTD.com

Connect with us:

08-15-2023 – M. Vaba

From: Mikayla Vaba <mikayla.vaba@opr.ca.gov>
Sent: Tuesday, August 15, 2023 9:26 AM
To: James Allison <JimA@capitolcorridor.org>
Subject: Public Notice

Hello,

Our office has received your mailed Public Notice for the following project: ***Sacramento to Roseville Third Main Track Project, SCH# 2014072005***

Please note that we no long accept mailed hard copies of Public Notices. Future notices can be sent to us through email at state.clearinghouse@opr.ca.gov.

Our staff confirmed that the above-mentioned project was uploaded to CEQAnet, and that the Public Notice was included online. There is no need to send this notice through email, as it has already been uploaded to the correct project in CEQAnet.

We appreciate your understanding. Please reach out to us with any questions.

Mikayla Vaba
State Clearinghouse
(916) 445-0613
mikayla.vaba@opr.ca.gov

Appendix B: Air Quality/Greenhouse Gases Technical Memorandum

THIS PAGE IS INTENTIONALLY BLANK.

Memorandum

To:	Buzz Berger, PE Associate Vice President HDR 3003 Oak Road, Ste. 500 Walnut Creek, CA 95747
From:	Cory Matsui, Kelsey Hartfelder, ICF
Date:	August 2, 2023
Re:	**Air Quality and Greenhouse Gas Analysis of the Roseville Third Track Passenger Train Layover Facility**

Introduction

In 2015, the Capitol Corridor Joint Powers Authority (CCJPA) certified a final EIR and approved the Sacramento to Roseville Third Track Passenger Rail project (CCJPA 2015). Since then, CCJPA has determined that changes to the Roseville Passenger Train Layover design and location need to be made. The purpose of this memorandum is to address the potential air quality and greenhouse gas impacts associated with changes to the Sacramento-Roseville Third Track: Roseville Passenger Train Layover (Project). The Project is required to comply with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA); thus, this memorandum provides support for both the CEQA and NEPA environmental review.

Project Description

The Project proposes the development of a layover facility, occupying approximately 9.5 acres along the Union Pacific Railroad (UPRR) right-of-way between Yosemite Street and Galleria Boulevard and serving as an endpoint where passenger trains begin and end their runs in Roseville, California. The layover facility would also be used for storage and light maintenance of up to four full passenger train sets at any one time. Typical activities at the layover facility will include storing passenger trains, cleaning the interiors of trains, emptying of sanitary retention tanks, and light maintenance. Locomotives may also receive fuel from trucks. The facility would also include an 8,000 square foot office, including a break room, a training room, administrative spaces, a small storage area, rest rooms, a locker room, and 22 employee parking spaces to serve as a point for train crews to start of finish their daily tours of duty.

CEQA Results

Criteria Air Pollutant and Greenhouse Gas Analysis Methodology

Construction Assumptions

Construction of the Project would generate emissions of reactive organic gases (ROG), nitrogen oxide (NO_X), carbon monoxide (CO), particulate matter no more than 10 microns in diameter (PM_{10}), and particulate matter no more than 2.5 microns in diameter ($PM_{2.5}$), resulting in short-term impacts on ambient air quality in the air quality study area (i.e., the Sacramento Valley Air Basin [SVAB]). Construction would also generate emissions of carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) that would result in long-term impacts on atmospheric greenhouse gas (GHG) concentrations. Emissions would be released in the form of exhaust from off-road equipment; exhaust from employee vehicles, vendor trucks, and haul trucks; exhaust from ballast-hauling locomotives; fugitive dust from site grading, earthmoving, and demolition; suspended road dust from vehicle travel; and off-gassing from architectural coatings and paving.

Short-term emissions generated by Project construction were calculated using CalEEMod Version 2022.1, which uses vehicle emission factors from CARB's EMFAC2021 (CAPCOA 2022). Modeling was based on Project-specific information provided by HDR and the Capitol Corridor Joint Powers Authority (CCJPA) where available, including demolition quantities, earthwork estimates, facility sizes and characteristics, expected construction phase durations, equipment inventory, number of truck trips, the area to be graded or paved, and construction electricity consumption. Default values from CalEEMod were also used, which are generated by the model based on a Project's location and land use type. Emission factors for locomotives from the United States Environmental Protection Agency (U.S. EPA) and the 2021 Port of Long Beach (POLB) Air Emissions Inventory were entered into CalEEMod to estimate emissions associated with ballast-hauling locomotives (U.S. EPA 2009; POLB 2021).

Construction of the Project was assumed to occur over approximately one year. Based on the construction schedule provided by HDR and CCJPA, construction of the Project may overlap with the final year of construction of the original Sacramento to Roseville Third Main Track project. Accordingly, the Project's construction emissions were summed with those associated with the final year of construction for the original Sacramento to Roseville Third Main Track project, as evaluated and disclosed in the 2015 Sacramento to Roseville Third Main Track Environmental Impact Report (CCJPA 2015).

Attachment A includes construction modeling outputs and detailed assumptions.

Operations Assumptions

Operation of the Project would generate emissions of ROG, NO_X, CO, PM_{10}, and $PM_{2.5}$ that could result in long-term impacts on ambient air quality. Project operation would also generate emissions of CO_2, CH_4, and N_2O that could result in long-term impacts on atmospheric GHG concentrations. Emissions from employee vehicles traveling to and from the facility, energy consumption, water use, waste generation, operation of the emergency generator, the reapplication of architectural coatings, the

use of consumer products, and the use of landscaping equipment were calculated using CalEEMod Version 2022.1. Modeling was based on Project-specific information where available, including the Project's estimated outdoor water use rate, solid waste generation rate, and information regarding the proposed emergency generator; and default values from CalEEMod, which are generated by the model based on a project's location and land use type.

The Project would not induce additional motor vehicles to travel to the Roseville transit station or increase passenger train activities, including locomotive usage or required maintenance, but it would result in incremental emissions in addition to the emissions identified in the 2015 EIR. The Project would increase running time for locomotives traveling the additional distance to the new location of the layover facility. Additionally, the Project would result in emissions from locomotive idling at a new location, because the layover facility was previously located in Old Town Roseville. It should be noted that the emissions from locomotive idling would not increase beyond those presented in the 2015 EIR, because the number of trains and idling time would remain the same. What is changing is the location of the idling emissions. Locomotive running and idling emissions were estimated based on EPA's locomotive emissions standards for traction engines and California Air Resources Board's (CARB's) offroad diesel engine standards for head-end-power engines.

The Project's operational emissions were summed with those from the 2015 EIR to evaluate the potential for Project implementation to result in new or more significant impacts than those evaluated and disclosed for the original Sacramento to Roseville Third Main Track project.

Attachment A includes detailed operational modeling outputs.

CEQA Air Quality Analysis Results

This section describes the estimated air quality impacts from construction and operation of the Project as required under CEQA.

Impact AQ-1: Conflict with or obstruction of implementation of the applicable air quality plan

Consistent with the analysis provided in the 2015 EIR, the Project's potential to "conflict with or obstruct implementation" is defined as circumstances under which the Project would exceed the growth assumptions utilized by the Sacramento Area Council of Governments (SACOG) in preparing the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) or worsen existing air quality violations (SACOG 2019).

The Project would not increase passenger train frequency beyond the additional service evaluated in the 2015 EIR, and would thus not increase maintenance activities, or induce additional motor vehicle travel to the Roseville transit station. The Project would only relocate the layover facility, resulting in minor additional locomotive travel of approximately two minutes per train. Accordingly, the Project would not increase the overall growth pressure in the communities served by CCJPA, and the Project would be consistent with recent growth projections for the region and would not conflict with the current air quality plans. Moreover, SACOG's MTP/SCS includes strategies to reduce single-occupancy vehicle usage and to increase alternative transportation (SACOG 2019). Implementation of the Sacramento to Roseville Third Main Track Project, including the revised location of the layover facility, would support efforts to expand passenger rail service and accommodate increased

ridership, as the proposed layover facility would be used for maintenance of passenger trains. As a result, operation of the Project would contribute to SACOG's goals to improve long-term air quality, reduce on road vehicle miles traveled (VMT), and increase alternative transportation.

As described below, while short-term emissions would be generated during construction, these would be mitigated to below air district significance thresholds (see Impact AQ-2). Likewise, long-term operation of the Project would result in a net reduction of all criteria pollutant emissions except NO_X under design year (2035) conditions, and the Project's operational NO_X emissions would not exceed the applicable PCAPCD threshold (Impact AQ-2). The Project would thus not worsen existing air quality violations,

Impact AQ-2: Potential to result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is a nonattainment area for an applicable federal or state ambient air quality standard.

Construction

Table 1 summarizes the results of the emissions modeling, which are compared to PCAPCD's criteria pollutant numeric thresholds for construction emissions (PCAPCD 2017a). The emissions shown in Table 1 are the maximum daily emissions that would occur, consistent with PCAPCD guidance. Maximum daily emissions are conservative, because they capture the emissions that would occur on the worst-case day of construction, whereas the use of average daily thresholds in other air districts results in lower emissions values that are averaged across the construction period.

It should be noted that the emissions presented in Table 1 are also conservative, because the 2015 EIR included emissions for construction of a new 4,600-square-foot maintenance facility, which would likely be replaced by the proposed layover facility. However, it is not feasible to adjust the emissions disclosed in the 2015 EIR to subtract the contribution from the original maintenance facility construction. As such, the Project's emissions are summed with emissions in the third year of construction associated with the original Sacramento to Roseville Third Main Track project. As a result, there may be some unavoidable double counting of emissions between the original maintenance facility and the proposed layover facility. Although double counting may occur, summing emissions in this way is a conservative approach and allows for a comprehensive evaluation of the Sacramento to Roseville Third Main Track project with the proposed layover facility.

Table 1. Criteria Pollutant Emissions from Project Construction (maximum pounds per day)

Year/Condition	ROG	NO_X	PM_{10}
Unmitigated Construction			
2015 EIR			
Year 1	2	24	12
Year 2	9	96	50
Year 3	24	30	19
Roseville Layover	**44**	**593**	**50**
Net Unmitigated	**68**	**623**	**69**

(2015 EIR Year 3 + Roseville Layover)			
PCAPCD Threshold	*82*	*82*	*82*
Exceed?	No	Yes	No
Mitigated Construction			
2015 EIR			
Year 1	2	19	12
Year 2	9	77	50
Year 3	24	24	19
Roseville Layover	**16**	**129**	**24**
Net Mitigated (2015 EIR Year 3 + Roseville Layover)	**40**	**153**	**43**
PCAPCD Threshold	*82*	*82*	*82*
Exceed?	No	**Yes**	No

Source: 2015 Sacramento to Roseville Third Main Track Environmental Impact (2015 EIR); Attachment A of this memorandum.
Notes: Bold, underlined text indicates changes in emissions and exceedances from 2015 EIR resulting from the Proposed Project; PCAPCD = Placer County Air Pollution Control District; ROG= reactive organic gases; NO_X = nitrogen oxide; PM_{10} = particulate matter no more than 10 microns in diameter.

As shown in Table 1, the Project's unmitigated construction activities would generate NO_X emissions that exceed the applicable PCAPCD numeric threshold and ROG and PM_{10} emissions that are below the applicable PCAPCD numeric thresholds. The primary reason for the exceedance of the emissions threshold is from the use of locomotives to haul ballast from quarries to the Project site. The ballast-hauling locomotives are high-horsepower and thus emissions-intensive equipment, but the use of the locomotives would occur for only 4 days. On these days, the maximum daily emissions scenario would occur, and the threshold would be exceeded; however, for the majority of days during construction the emissions of NO_X would be substantially lower. The average emissions during construction would thus result in lower emissions than those presented in Table 1, and the presentation of maximum daily emissions is conservative.

Mitigation Measure AQ-1 would be implemented to reduce the Project's construction NO_X emissions below PCAPCD thresholds. This would be accomplished by using Tier 4 final construction equipment, using Tier 4 locomotives for ballast hauling, and, for emissions that are still above the threshold after use of Tier 4 equipment, offsets would be purchased in coordination with PCAPCD. The use of offsets would only apply to days when the NOx threshold is exceeded. As indicated above, the number of days that emissions would be exceeded would be limited to the days that locomotive ballast hauling would occur (i.e., 3-4 days). As such, construction emissions would not be expected to contribute to a significant level of air pollution that would degrade regional air quality within the SFBAAB with the implementation of Mitigation Measure AQ-1.

Mitigation Measure AQ-1: Reduce construction emissions to below PCAPCD NO_X thresholds.

CCJPA shall ensure that construction-related emissions do not exceed PCAPCD's construction NO_X threshold of 82 pounds per day. Potential measures include but are not limited to those listed below.

- Require the usage of EPA-rated Tier 4 Final rated construction equipment. In general, replacing Tier 2 equipment with Tier 4 Final equipment can result in a 94% reduction in NO_X emissions.
- Require the usage of EPA-rated Tier 4 locomotives for ballast hauling between quarries and the Project site.
- Work with PCAPCD to purchase NO_X credits to offset remaining NO_X construction emissions exceeding PCAPCD thresholds.

Operations

Table 2 summarizes the Project's estimated operational criteria pollutant emissions, which are compared to PCAPCD's operational criteria pollutant numeric thresholds (PCAPCD 2017a). The emissions shown in Table 2 represent the entire Sacramento to Roseville Third Main Track Project with the revised location of the layover facility. The only difference in emissions between what is shown in Table 2 and what is shown in the 2015 EIR is the additional run-time of approximately two minutes that would occur from the revised layover facility location. Idling emissions would remain the same as in the 2015 EIR, but the idling would occur in a different location. For this reason, idling emissions are included in the analysis of health risks below (see Impact AQ-3).

Table 2 shows emissions that would occur in both PCAPCD and the Sacramento Metropolitan Air Quality Management District (SMAQMD). However, because the only change in the overall project is within the PCAPCD, emissions in SMAQMD are not affected and thus are the same as what is shown in the 2015 EIR. Emissions are shown for various sources in Table 2, including those that are not affected by the Project (e.g., public on-road vehicles and buses), because the location of the layover facility does not affect ridership (and thus on-road vehicle travel) or bus service. Consistent with the 2015 EIR, emissions are presented for two scenarios (existing conditions in 2013 and design conditions in 2035); however, the impact determination is made with respect to design conditions only, because comparing to existing conditions would overestimate emissions. Page 3.2-7 through 3.2-8 of the draft 2015 EIR provides the rationale for determining impacts with respect to design conditions.

For the reasons noted above for construction, the emissions presented in Table 2 are conservative because the 2015 EIR included emissions for the operation of a new maintenance facility, which the proposed layover facility would likely replace. It is not feasible to adjust the emissions disclosed in the 2015 EIR to subtract the contribution from operation of the original maintenance facility. As such, the Project's emissions are conservatively summed with all emissions expected to result from the original Sacramento to Roseville Third Main Track project. Although some double counting may occur, summing emissions in this way is a conservative approach and allows for a comprehensive

evaluation of the Sacramento to Roseville Third Main Track project with the proposed layover facility.

Table 2. Net Daily Operational Emissions in SMAQMD and PCAPCD (pounds/day)

	SMAQMD						PCAPCD					
Source	ROG	NO_X	CO	PM10	PM2.5	SO_2	ROG	NO_X	CO	PM10	PM2.5	SO_2
Existing Conditions (2013)												
Train operation	6.3	115.4	28	4.1	4	0.1	**2.7**	**51.4**	**11.1**	**1.8**	**1.7**	**0.1**
Public vehicles	-6.6	-21.5	-80.8	-6.4	-2.1	-0.2	-6.6	-21.5	-80.8	-6.4	-2.1	-0.2
Public Buses—Thruway	<-0.1	-0.2	-0.4	<-0.1	<-0.1	<-0.1	<-0.1	-0.2	-0.4	<-0.1	<-0.1	<-0.1
Public Buses—Roseville	-	-	-	-	-	-	<0.1	0.1	0.2	<0.1	<0.1	<0.1
O&M at Roseville Station	-	-	-	-	-	-	0.1	0.1	0.3	<0.1	<0.1	<0.1
Total Net Change	-0.3	93.7	-53.2	-2.3	1.9	-0.1	**-3.8**	**29.9**	**-69.6**	**-4.6**	**-0.4**	**-0.1**
CEQA Threshold	*64*	*64*	–	–	–	–	*55*	*55*	–	*82*	–	–
Exceed?	No	Yes	N/A	N/A	N/A	N/A	No	No	N/A	No	N/A	N/A
Design Conditions (2035)												
Train operation	0.9	21.4	27.4	0.3	0.3	0.1	**0.9**	**21.9**	**28.1**	**0.3**	**0.3**	**0.1**
Public vehicles	-2.7	-5.9	-29.1	-6.2	-1.9	-0.2	-2.7	-5.9	-29.1	-6.2	-1.9	-0.2
Public Buses—Thruway	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1	<-0.1
Public Buses—Roseville	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
O&M at Roseville Station	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
O&M at Roseville Layover Facility	-	-	-	-	-	-	**0.1**	**<0.1**	**0.3**	**0.1**	**<0.1**	**<0.1**
Total Net Change	-1.8	15.5	-1.7	-5.9	-1.6	-0.1	**-1.6**	**16.1**	**-0.6**	**-5.8**	**-1.6**	**-0.1**
CEQA Threshold	*64*	*64*	–	–	–	–	*55*	*55*	–	*82*	–	–
Threshold Exceeded?	No	No	N/A	N/A	N/A	N/A	No	No	N/A	No	N/A	N/A

Source: 2015 Sacramento to Roseville Third Main Track Environmental Impact (2015 EIR); Attachment A of this memorandum.

Notes: Bold, underlined text indicates changes in emissions from 2015 EIR resulting from the Proposed Project. SMAQMD = Sacramento Metropolitan Air Quality Management District; PCAPCD = Placer County Air Pollution Control District; ROG= reactive organic gases; NO_X = nitrogen oxide; PM_{10} = particulate matter no more than 10 microns in diameter.

As shown in Table 2, operation of the Project would not generate ROG, NO_X, or particulate matter that would exceed the applicable PCAPCD numeric thresholds. This conclusion is consistent with the conclusion in the 2015 EIR. As such, Project operation would not be expected to contribute a significant level of air pollution that would degrade regional air quality within the SFBAAB.

Impact AQ-3: Exposure of sensitive receptors to substantial pollutant concentrations.

Localized Carbon Monoxide Concentrations

As noted in the 2015 EIR, increased passenger traffic near the Sacramento and Roseville stations would have the potential to create CO hot spots. The Project would not induce additional motor vehicles to travel to the Sacramento or Roseville transit stations, because ridership is not affected by the specific location of a layover facility. Thus, the Project would not have the potential to create CO hot spots beyond those analyzed in the 2015 EIR. As a result, consistent with the localized carbon monoxide analysis provided in the 2015 EIR, the Project would not be expected to result in CO hot spots at the intersections surrounding the transit stations.

Localized Diesel Particulate Matter Concentrations

Construction activities would generate emissions of diesel particulate matter (DPM) from the use of heavy-duty off-road equipment, including ballast-hauling locomotives, and trucks used for hauling materials. During the Project's operational phase, increased DPM emissions would be generated by locomotive activity along the rail line covering the additional distance to the proposed layover facility, locomotive idling at the layover facility, and the proposed diesel-fueled emergency generator. Sensitive receptors in the Project area include Roseville High School and multiple residences located directly adjacent to the Project boundary.

Because the Project would introduce DPM emissions in an area near existing sensitive receptors, a Health Risk Assessment (HRA) was conducted in accordance with PCAPCD guidelines. The HRA uses EPA's most recent air dispersion model, AERMOD (version 22112), and risk assessment methodologies for DPM provided by the Office of Environmental Health Hazard Assessment (OEHHA 2015). The HRA consists of three parts: an emissions inventory, air dispersion modeling, and risk calculations.

Exposure to DPM emissions from construction activities and locomotive movement and idling during Project operation was assessed by predicting the health risks in terms of excess cancer, non-cancer hazard impacts, and elevated DPM concentrations. Cancer health risk from exposure to diesel exhaust is associated with chronic exposure, in which a 30-year exposure period is assumed. DPM exposure and associated health risks are dependent on several factors, including variation in receptor behavior and physiology, as well as meteorological conditions and the release characteristics of the engine exhaust. Depending on the release height and other variables, the highest exposure may not be at locations nearest to the track. Note that DPM concentrations, and thus cancer risks, dissipate as a function of distance from the emissions source.

The results of the HRA are summarized in Table 3 and compared to PCAPCD's health risk thresholds (PCAPCD 2017b).

Table 3. Mitigated and Unmitigated Health Risks Resulting from Project Construction and Operation

Condition	DPM Cancer Risk	Chronic Non-Cancer HI
Project Construction and Operation		
Construction – Unmitigated	2.3	< 0.01
Construction – Mitigated	1.0	< 0.01
Operation	6.5	< 0.01
Cumulative – Unmitigated (Construction + Operation)	8.8	-
Cumulative – Mitigated (Construction + Operation)	7.5	-
PCAPCD Threshold	*10*	*1*
Exceed?	**No**	**No**

Source: Attachment A of this memorandum.
Notes: Data represent maximum health risks at evaluated receptor locations; DPM = diesel particulate matter.

As shown in Table 3, DPM emissions generated by Project construction, operation, and the cumulative total of both would not result in chronic non-cancer or cancer risks that exceed PCAPCD health risk thresholds. The mitigated construction health risk estimates account for reductions in DPM emissions achieved by using Tier 4 Final construction equipment, as required by Mitigation Measure AQ-1 (see Impact AQ-2). However, this mitigation measure is not required to prevent health risks from exceeding the cancer risk threshold.

Naturally Occurring Asbestos

Disturbance of rock and soil that contains (naturally occurring asbestos) NOA can result in consequent exposure to the public. Asbestos most commonly occurs in serpentine rock and its parent material, ultramafic rock. Construction activities in areas known to contain ultramafic rocks may expose workers and the general public to NOA. The 2015 EIR evaluated the potential for construction in Placer County to expose sensitive receptors to NOA.

As described in the 2015 EIR, the Project is located in an area "least likely to contain NOA" according to the *Naturally Occurring Asbestos Hazard* map for Placer County (California Geological Survey 2008). Accordingly, submission of an NOA mitigation plan is not required for the Project, but compliance with PCAPCD Rule 228 would be required.

Impact AQ-5: Creation of objectionable odors affecting a substantial number of people.

Sources of odor during construction include diesel exhaust from construction equipment and asphalt paving. Odors from equipment exhaust would be localized and generally confined to the immediate area surrounding the work site. The Project would involve typical construction techniques, and the equipment odors would be typical of most construction sites and of temporary duration. Potential odors generated during asphalt paving would be addressed through mandatory compliance with PCAPCD Rule 217, which limits the amount of ROG from cutback asphalt.

As described in the 2015 EIR, guidance from the California Air Resources Board (CARB) indicates that land uses typically associated with odor complaints include agricultural activities, wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding facilities (CARB 2005). Operations would not include any uses

typically associated with odors and accordingly would not produce objectionable odors affecting a substantial number of people. Any odors resulting from diesel fuel combustion along the extended track or at the layover facility would be short term, occurring as trains pass by or during periods of idling. Idling time would be minimized, because locomotives and trains would connect to the electric grid for power. Moreover, odors associated with the expanded passenger rail service would be consistent with existing land uses, which include Union Pacific Railroad freight activity, in the Project vicinity.

Accordingly, the Project would not be expected to create objectionable odors affecting a substantial number of people.

CEQA Greenhouse Gas Analysis Results

This section describes the estimated greenhouse gas (GHG) impacts resulting from GHG emissions generated by Project construction and operation as required under CEQA.

Impact GHG-1: Generation of greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Construction

Table 4 summarizes the Project's estimated construction GHG emissions. Detailed model assumptions and outputs are provided in Attachment A to this memorandum.

Table 4. Estimated Construction GHG Emissions (metric tons per year)

Year	CO_2	CH_4	N_2O	Other	CO_2e
2015 EIR					
Year 1	1,716	<1	<1	3	1,739
Year 2	1,675	<1	<1	3	1,698
Year 3 (2015 EIR)	133	<1	<1	<1	135
Roseville Layover	**494**	**<1**	**<1**	**<1**	**508**
Total	**4,018**	**<1**	**<1**	**6**	**4,080**

Source: 2015 Sacramento to Roseville Third Main Track Environmental Impact (2015 EIR); Attachment A of this memorandum.
Notes: Bold, underlined text indicates changes in emissions from 2015 EIR resulting from the Proposed Project; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalents; other = emissions associated with on road gasoline vehicles, including CO_2, CH_4, N_2O, and HFCs; and SF_6 emissions from electricity usage.

As shown in Table 4, Project construction would result in GHG emissions that would generate approximately 4,080 metric tons of CO_2e over the course of the approximately 12-month Project construction period. This estimate is conservative, because as noted for AQ-2, some unavoidable double counting may occur between these proposed layover facility emissions and the construction emissions from the maintenance facility from the 2015 EIR. As noted in the 2015 EIR, short-term emissions during construction would be offset through long-term GHG savings achieved during operations. This conclusion would still apply to the Project.

Operations

Table 5 summarizes the Project's estimated operational GHG emissions. Detailed model assumptions and outputs are provided in Attachment A to this memorandum. The emissions shown in Table 2 represent the entire Sacramento to Roseville Third Main Track Project with the revised location of the layover facility. The only difference in emissions between what is shown in Table 2 and what is shown in the 2015 EIR is the additional run-time of approximately two minutes that would occur from the revised layover facility location. Idling emissions would remain the same as in the 2015 EIR and are thus not included in Table 5. As noted for Impact AQ-1, the emissions shown in Table 5 are conservative because of the potential overlap between the proposed layover facility emissions and the 2015 EIR maintenance facility emissions, which the proposed layover facility would likely replace.

Table 5. Estimated Net Operational GHG Emissions (metric tons per year)

Source	CO_2	CH_4	N_2O	Other	CO_2e
Existing Conditions (2013)					
Train operation	**2,223.4**	**0.2**	**0.1**	**-**	**2,243.3**
Public vehicles	-4,508.2	-	-	-54.1	-4,562.3
Public Buses – Thruway	-20.2	<-0.1	<-0.1	-	-20.3
Public Buses – Roseville	7.8	<0.1	<0.1	-	7.8
O&M at Roseville Station	28.9	0.1	<0.1	0.1	32.2
Standby Electricity Usage	-80.3	<-0.1	<-0.1	<-0.1	-80.9
Total Net Change	**-2,348.8**	**0.3**	**0.1**	**-54.0**	**-2,380.2**
Design Year Conditions (2035)					
Train operation	**3,147.9**	**0.2**	**0.1**	**-**	**3,176.1**
Public vehicles	-3,387.8	-	-	-40.7	-3,428.5
Public Buses – Thruway	-18.4	<-0.1	<-0.1	-	-18.4
Public Buses – Roseville	7.1	<0.1	<0.1	-	7.1
O&M at Roseville Station	18.0	0.1	<0.1	0.1	21.2
Standby Electricity Usage	-36.2	<-0.1	<-0.1	<-0.1	-36.7
O&M at Roseville Layover Facility	**95.3**	**0.3**	**<0.1**	**-**	**104.1**
Total Net Change	**-174.1**	**0.6**	**0.1**	**-40.6**	**-175.1**

Source: 2015 Sacramento to Roseville Third Main Track Environmental Impact (2015 EIR); Attachment A of this memorandum.

Notes: Bold, underlined text indicates changes in emissions from 2015 EIR resulting from the Proposed Project; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalents; other = emissions associated with on road gasoline vehicles, including CO_2, CH_4, N_2O, and HFCs; and SF_6 emissions from electricity usage.

As shown in Table 5, implementation of the Project would reduce operational GHG emissions under design year conditions. GHG benefits achieved through operation of the Project would offset the short-term construction emissions in approximately 23 years.[1] This timeframe is conservative,

[1] Calculated by dividing short-term construction emissions by the annual long-term emissions savings (4,080 metric tons CO_2e/ 175 metric tons CO_2e per year = 23 years).

however, because of the overlap in emissions described above. In reality, the offset time is likely to be less than this value. Emissions savings achieved thereafter would contribute to reductions in GHG emissions, which would be an environmental benefit. Accordingly, GHG emissions generated by the Project would not exceed any published draft emissions thresholds or the net zero threshold used for this analysis.

Impact GHG-2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation, including Senate Bill (SB) 32 and Assembly Bill (AB) 1279. In December 2022, CARB adopted its Final 2022 Scoping Plan Update for Achieving Carbon Neutrality (2022 Scoping Plan), which identifies a technologically feasible, cost-effective and equity-focused path to achieve carbon neutrality by 2045, pursuant to AB 1279, as well as the GHG emissions reduction goal called for in SB 32. In addition, SACOG has adopted the 2020 MTP/SCS to reduce transportation-related emissions throughout the region. Consistency with these documents is evaluated below.

CARB's Scoping Plan and SACOG's MTP/SCS include strategies to reduce single-occupancy vehicle usage and to increase alternative transportation (CARB 2022; SACOG 2019). The Project would result in minor additional locomotive travel of approximately two minutes per train, but it would support efforts to expand passenger rail service and accommodate increased ridership, as the proposed layover facility would be used for maintenance of passenger trains. As a result, implementation of the Project would support CARB and SACOG strategies to reduce single-occupancy vehicle usage and increase alternative transportation, as well as attainment of regional and statewide GHG polices and reduction targets.

Impact GHG-3: Subject property and persons to otherwise avoidable physical harm in light of inevitable climate change

Unavoidable climate change may result in a range of potential impacts on the Project vicinity; these include increased temperatures, increased heat events, worsened air quality, increased storm intensity, increased wildland fire frequency or intensity, changes in disease and pest vectors, and changes in water supply. However, the Project would subject property or people to physical harm from climate change effects, beyond the potential evaluated in the 2015 EIR. The Project would not affect ridership and is simply moving the layover facility from one location to another, within the same general area. As such, there is no additional potential for the Project to cause physical harm from climate change. The conclusions of the 2015 EIR for this impact are also applicable to the proposed Project.

NEPA Results

This section describes the estimated air quality impacts from construction and operation of the Project as required under NEPA and demonstrates that the Project would not lead to a violation of the applicable General Conformity *de minimis* thresholds.

Attainment Status

The Project site is located in Placer County in the Sacramento Valley Air Basin, which is designated by U.S. Environmental Protection Agency (USEPA) as nonattainment for the National Ambient Air Quality Standards (NAAQS) for ozone and $PM_{2.5}$, as shown in Table 6. Nonattainment status indicates that measured concentrations of these pollutants in the region have violated the NAAQS in the past.

Table 6. Federal Criteria Pollutant Attainment Status for the Project Site

Criteria Pollutant	Federal Designation
Ozone	Severe Nonattainment (2008 8-hour standards);
	Serious Nonattainment (2015 8-hour standard)
$PM_{2.5}$	Moderate Nonattainment (2006 standard)
CO	Moderate Maintenance
All other pollutants	Attainment

Source: U.S. EPA 2023b.

Project Emissions

Air Quality

Table 7 summarizes the Project's estimated annual construction and operational criteria pollutant emissions, which are compared to the applicable General Conformity *de minimis* thresholds (i.e., the applicable de minimis emission levels determined by the attainment status of the Project area).

Table 7. Annual Criteria Pollutant Emissions (tons per year)

Activity/Year	ROG	NO_X	CO	PM_{10}	$PM_{2.5}$	SO_2
Construction						
2015 EIR						
Year 1	1.7	12.4	8.4	1.3	0.6	<0.1
Year 2	1.6	11.2	8.4	1.2	0.6	<0.1
Year 3	0.2	0.7	0.7	<0.1	<0.1	<0.1
Roseville Layover	**0.1**	**0.7**	**1.2**	**2.0**	**0.2**	**<0.1**
Net Emissions (2015 EIR Year 3 + Roseville Layover)	**0.3**	**1.4**	**1.9**	**2.0**	**0.2**	**<0.1**
Long-Term Operation (Design Year)	**-0.5**	**5.1**	**-0.7**	**-2.0**	**-0.5**	**<-0.1**
De minimis Level	*25*	*25*	*100*	*100*	*100*	*100*
Exceed?	No	No	No	No	No	No

Source: U.S. EPA 2023c; 2015 Sacramento to Roseville Third Main Track Environmental Impact (2015 EIR); Attachment A of this memorandum.
Notes: Bold, underlined text indicates changes in emissions from 2015 EIR resulting from the Proposed Project; CO = carbon monoxide; NA = threshold not applicable or no threshold established; NO_X = nitrogen oxide; PM2.5 = particulate matter no more than 2.5 microns in diameter; PM10 = particulate matter no more than 10 microns in diameter; SO_2 = sulfur dioxide; ROG = reactive organic gases.

The Project's estimated construction and operational criteria pollutant emissions would be below all thresholds, as shown in Table 7. Based on the estimated emission levels, ambient pollutant

concentrations associated with the Project would not exceed the applicable General Conformity thresholds.

Climate Change

Please refer to the discussion under Impact GHG-1 for a discussion of the Project's GHG emissions. As shown in Table 7, Project construction would generate approximately 4,080 metric tons of CO_2e during the 12-month construction period. However, long-term operation of the Project would reduce GHG emissions under design year conditions. GHG benefits achieved through operation of the Build Alternative would offset the short-term construction emissions in approximately 23 years. Emissions savings achieved thereafter would contribute to reductions in GHG emissions. Accordingly, the Project would result in an eventual beneficial impact on GHG emissions.

Please refer to the discussion under Impact GHG-3 for a discussion of the Project's potential to result in significant increased risk to people or structures from climate change. As discussed in Impact GHG-3, the Build Alternative would not result in significant increased risk to people or structures from climate change.

Summary

For air quality, the estimated criteria pollutant emission generated by Project construction would be below applicable PCAPCD thresholds with the implementation of Mitigation Measure AQ-1, which requires the reduction of NO_X emissions to a level below the applicable PCAPCD threshold through the use of Tier 4 Final equipment or the purchase of NO_X credits to offset remaining NO_X construction emissions exceeding PCAPCD thresholds. In addition, the Project's operational criteria pollutant emissions would be below PCAPCD's significance thresholds. Thus, with mitigation, the Project's construction and operational criteria pollutant emissions would not exceed the applicable PCAPCD CEQA significance thresholds and would not be expected to contribute a significant level of air pollution that would degrade regional air quality within the SFBAAB. Compared to the Project's impacts identified in the November 2015 Final EIR, the changes associated with the Roseville layover design would not be substantially more severe than those analyzed in 2015 with the incorporation of mitigation.

For GHG emissions, implementation of the Project would result in net negative operational GHG emissions under design year conditions, and GHG benefits achieved through operation of the Project would eventually offset the short-term construction emissions. Emissions savings achieved thereafter would contribute to reductions in GHG emissions resulting in an environmental benefit. Accordingly, GHG emissions generated by the Project would not exceed any published draft emissions thresholds or the net zero threshold used for this analysis. Compared to the Project's impacts identified in the November 2015 Final EIR, the changes associated with the Roseville layover design would not be substantially more severe than those analyzed in 2015.

For NEPA considerations, the Project would not be expected to exceed the *de minimis* thresholds during either construction or operation. Therefore, the Project would result in no adverse air quality effects under NEPA.

References Cited

Printed References

California Air Pollution Control Officers Association (CAPCOA). 2022. California Emissions Estimator Model User Guide. April. Available: https://caleemod.com/documents/user-guide/CalEEMod_User_Guide_v2022.1.pdf. Accessed: July 17, 2023.

California Air Resources Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. April. Available: https://sfmohcd.org/sites/default/files/20%20-%20CARB%2C%20Air%20Quality%20and%20Land%20Use%20Handbook%202005.pdf. Accessed: July 17, 2023.

———. 2022. 2022 Scoping Plan Update. November. Available: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf. Accessed: June 16, 2023.

California Geological Survey. 2008. *Placer County Naturally Occurring Asbestos Hazard*. Last Revised: November 4. Available: https://www.placer.ca.gov/DocumentCenter/View/1435/Placer-County-Naturally-Occurring-Asbestos-Hazard---Index-Map-PDF. Accessed: July 17, 2023.

Capitol Corridor Joint Powers Authority. 2015. Sacramento to Roseville Third Main Track Final Environmental Impact Report. State Clearinghouse #2014072005. November. (ICF 00020.12.)

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments. February. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed: July 17, 2023.

Placer County Air Pollution Control District (PCAPCD). 2017a. CEQA Handbook, Chapter 2: Thresholds of Significance. Available: https://www.placerair.org/DocumentCenter/View/2047/Chapter-2-Thresholds-of-Significance-PDF. Accessed: July 17, 2023.

———. 2017b. CEQA Handbook, Chapter 6: Special Circumstances for a Project. Available: https://www.placerair.org/DocumentCenter/View/2051/Chapter-6-Special-Circumstances-for-a-Project-PDF. Accessed: July 17, 2023.

Port of Long Beach. 2022. Air Emissions Inventory – 2021. Available: https://polb.com/download/14/emissions-inventory/15418/2021-air-emissions-inventory.pdf. Accessed: July 17, 2023.

Sacramento Area Council of Governments (SACOG). 2019. 2020 Metropolitan Transportation Plan/Sustainable Communities Strategy. Available: https://www.sacog.org/sites/main/files/file-attachments/2020_mtp-scs.pdf?1580330993. Accessed: July 17, 2023.

U.S. Environmental Protection Agency (U.S. EPA). 2009. *Technical Highlights Emission Factors for Locomotives*. September 14. Available: https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100500B.txt. Accessed: July 17, 2023.

———. 2023a. Greenhouse Gas Equivalencies Calculator. April. Available: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator. Accessed: July 17, 2023.

———. 2023b. Nonattainment Areas for Criteria Pollutants (Green Book). Updated June 30. Available: https://www.epa.gov/green-book. Accessed: July 17, 2023.

———. 2023c. De Minimis Tables. Updated June 29. Available: https://www.epa.gov/general-conformity/de-minimis-tables. Accessed: July 17, 2023.

Attachment A

Modeling Outputs and Detailed Assumptions

This attachment includes the components listed below.

- Six sets of CalEEMod modeling outputs:
    - Unmitigated annual emissions generated by construction of the layover facility (identified with the phase "Unmitigated Annual" on the first page of the applicable output tables);
    - Mitigated annual emissions generated by construction of the layover facility (identified with the term "Mitigated Annual" on the first page of the applicable output tables);
    - Unmitigated maximum daily emissions generated by construction of the layover facility (identified with the term "Unmitigated Max Daily" on the first page of the applicable output tables);
    - Mitigated maximum daily emissions generated by construction of the layover facility (identified with the term "Mitigated Max Daily" on the first page of the applicable output tables);
    - Unmitigated annual emissions generated by the use of ballast-hauling locomotives during Project construction (identified with the term "Unmitigated Locomotive" on the first page of the applicable output tables); and
    - Mitigated annual emissions generated by the use of ballast-hauling locomotives during Project construction (identified with the term "Mitigated Locomotive" on the first page of the applicable output tables).
- A Microsoft Excel Workbook containing operational locomotive emissions modeling.
- A Microsoft Excel Workbook containing health risk assessment parameters, modeling results, and risk calculations.

Roseville Layover Unmitigated Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Roseville Layover Unmitigated
Construction Start Date	8/1/2027
Operational Year	2029
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	0.60
Location	38.756638691082856, -121.27398577092818
County	Placer-Sacramento
City	Roseville
Air District	Placer County APCD
Air Basin	Sacramento Valley
TAZ	443
EDFZ	15
Electric Utility	Roseville Electric
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Other Non-Asphalt Surfaces	9.20	Acre	9.20	0.00	0.00	—	—	—
General Office Building	8.00	1000sqft	0.20	8,000	0.00	—	—	—
Parking Lot	4.00	1000sqft	0.10	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.43	6.07	24.4	25.9	0.07	0.76	37.3	38.0	0.71	4.02	4.73	—	8,875	8,875	0.27	0.50	8.79	9,039
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.55	4.08	6.32	5.34	0.03	0.14	37.5	37.6	0.13	4.26	4.39	—	3,910	3,910	0.07	0.46	0.17	4,050
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.31	0.77	3.94	3.43	0.01	0.10	9.66	9.77	0.10	1.09	1.18	—	1,619	1,619	0.04	0.13	0.90	1,661
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.06	0.14	0.72	0.63	< 0.005	0.02	1.76	1.78	0.02	0.20	0.22	—	268	268	0.01	0.02	0.15	275

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.45	0.36	5.27	4.11	0.02	0.12	31.3	31.4	0.11	3.59	3.70	—	3,344	3,344	0.06	0.41	5.96	3,472
2028	2.43	6.07	24.4	25.9	0.07	0.76	37.3	38.0	0.71	4.02	4.73	—	8,875	8,875	0.27	0.50	8.79	9,039
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.43	0.35	5.56	3.75	0.02	0.12	31.3	31.4	0.11	3.59	3.70	—	3,307	3,307	0.06	0.42	0.15	3,433
2028	0.55	4.08	6.32	5.34	0.03	0.14	37.5	37.6	0.13	4.26	4.39	—	3,910	3,910	0.07	0.46	0.17	4,050
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.13	0.10	1.64	1.13	0.01	0.04	9.36	9.39	0.03	1.07	1.11	—	992	992	0.02	0.12	0.77	1,031
2028	0.31	0.77	3.94	3.43	0.01	0.10	9.66	9.77	0.10	1.09	1.18	—	1,619	1,619	0.04	0.13	0.90	1,661
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.02	0.02	0.30	0.21	< 0.005	0.01	1.71	1.71	0.01	0.20	0.20	—	164	164	< 0.005	0.02	0.13	171
2028	0.06	0.14	0.72	0.63	< 0.005	0.02	1.76	1.78	0.02	0.20	0.22	—	268	268	0.01	0.02	0.15	275

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.63	0.43	2.51	0.01	0.02	0.39	0.42	0.02	0.10	0.12	16.2	712	728	1.67	0.03	1.14	780
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	0.54	0.46	1.92	< 0.005	0.02	0.39	0.42	0.02	0.10	0.12	16.2	672	688	1.67	0.03	0.05	739

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.47	0.23	1.51	< 0.005	0.01	0.30	0.31	0.01	0.08	0.08	16.2	560	576	1.67	0.02	0.38	625
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.09	0.04	0.28	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	2.69	92.7	95.3	0.28	< 0.005	0.06	103

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Area	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.41	0.63	0.43	2.51	0.01	0.02	0.39	0.42	0.02	0.10	0.12	16.2	712	728	1.67	0.03	1.14	780
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Area	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7

Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.32	0.54	0.46	1.92	< 0.005	0.02	0.39	0.42	0.02	0.10	0.12	16.2	672	688	1.67	0.03	0.05	739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.19	0.16	1.28	< 0.005	< 0.005	0.30	0.30	< 0.005	0.08	0.08	—	325	325	0.01	0.02	0.36	331
Area	0.03	0.27	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.71
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.55	0.55	< 0.005	< 0.005	0.00	0.55
Total	0.25	0.47	0.23	1.51	< 0.005	0.01	0.30	0.31	0.01	0.08	0.08	16.2	560	576	1.67	0.02	0.38	625
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8
Area	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.9	37.9	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Waste	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	0.05	0.09	0.04	0.28	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	2.69	92.7	95.3	0.28	< 0.005	0.06	103

3. Construction Emissions Details

3.1. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.75	1.87	< 0.005	0.07	—	0.07	0.07	—	0.07	—	455	455	0.02	< 0.005	—	456
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.23	0.10	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.3	85.3	< 0.005	0.01	0.13	89.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.75	1.87	< 0.005	0.07	—	0.07	0.07	—	0.07	—	455	455	0.02	< 0.005	—	456
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.6	85.6	< 0.005	0.01	< 0.005	89.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.52	0.56	< 0.005	0.02	—	0.02	0.02	—	0.02	—	136	136	0.01	< 0.005	—	137

Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.11	0.11	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	8.80	8.80	< 0.005	0.88	0.88	—	25.6	25.6	< 0.005	< 0.005	0.02	26.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.5	22.5	< 0.005	< 0.005	—	22.6
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.61	1.61	< 0.005	0.16	0.16	—	4.24	4.24	< 0.005	< 0.005	< 0.005	4.44
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.39	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	322	322	< 0.005	< 0.005	0.97	324
Vendor	0.03	0.02	0.82	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	656	656	0.01	0.10	1.44	687
Hauling	0.08	0.05	2.42	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,824	1,824	0.03	0.29	3.42	1,914
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.00	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	285	285	0.01	0.01	0.03	288
Vendor	0.03	0.02	0.88	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	657	657	0.01	0.10	0.04	686
Hauling	0.07	0.04	2.61	0.54	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,825	1,825	0.03	0.29	0.09	1,912

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.6	87.6	< 0.005	< 0.005	0.12	88.7
Vendor	0.01	0.01	0.26	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	197	197	< 0.005	0.03	0.19	205
Hauling	0.02	0.01	0.76	0.16	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	546	546	0.01	0.09	0.44	573
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.03	34.0
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	0.07	94.8

3.3. Grading (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.67	1.87	< 0.005	0.07	—	0.07	0.07	—	0.07	—	454	454	0.02	< 0.005	—	456
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	83.5	83.5	< 0.005	0.01	< 0.005	87.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.03	0.29	0.33	< 0.005	0.01	—	0.01	0.01	—	0.01	—	80.0	80.0	< 0.005	< 0.005	—	80.3
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.18	5.18	< 0.005	0.52	0.52	—	14.7	14.7	< 0.005	< 0.005	0.01	15.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.3	13.3	< 0.005	< 0.005	—	13.3
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.94	0.94	< 0.005	0.09	0.09	—	2.43	2.43	< 0.005	< 0.005	< 0.005	2.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.95	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	279	279	0.01	0.01	0.02	282
Vendor	0.03	0.02	0.84	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	640	640	0.01	0.10	0.03	669
Hauling	0.07	0.04	2.51	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,777	1,777	0.03	0.28	0.08	1,860
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.5	50.5	< 0.005	< 0.005	0.07	50.6

Vendor	< 0.005	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.09	118
Hauling	0.01	0.01	0.43	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	313	313	< 0.005	0.05	0.24	328
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.35	8.35	< 0.005	< 0.005	0.01	8.39
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.5
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.8	51.8	< 0.005	0.01	0.04	54.3

3.5. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.48	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.48	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.7	16.7	< 0.005	< 0.005	< 0.005	17.5

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.71	0.71	< 0.005	0.07	0.07	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.32	2.32	< 0.005	< 0.005	—	2.33
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	< 0.005	0.68	254
Vendor	0.01	0.01	0.39	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.62	335
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.76	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	223	223	< 0.005	0.01	0.02	226
Vendor	0.01	0.01	0.42	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.02	334
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	27.7

Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.5	38.5	< 0.005	0.01	0.03	40.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.38	6.38	< 0.005	< 0.005	0.01	6.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.36	1.14	9.92	11.4	0.03	0.42	—	0.42	0.39	—	0.39	—	2,749	2,749	0.11	0.02	—	2,758
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	17.6	17.6	< 0.005	1.76	1.76	—	49.9	49.9	< 0.005	0.01	0.07	52.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.60	0.69	< 0.005	0.03	—	0.03	0.02	—	0.02	—	166	166	0.01	< 0.005	—	166
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	1.06	1.06	< 0.005	0.11	0.11	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.11	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.4	27.4	< 0.005	< 0.005	—	27.5
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.52
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.07	1.58	0.00	0.00	0.36	0.36	0.00	0.09	0.09	—	379	379	< 0.005	< 0.005	1.03	381
Vendor	0.04	0.03	1.17	0.32	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	959	959	0.01	0.15	1.87	1,004
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.7	20.7	< 0.005	< 0.005	0.03	20.8
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.8	57.8	< 0.005	0.01	0.05	60.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.43	3.43	< 0.005	< 0.005	< 0.005	3.44
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.57	9.57	< 0.005	< 0.005	0.01	10.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Trenching (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.82	10.1	7.51	0.02	0.28	—	0.28	0.26	—	0.26	—	1,894	1,894	0.11	0.03	—	1,905
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	11.8	11.8	< 0.005	1.17	1.17	—	33.3	33.3	< 0.005	0.01	0.05	34.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.15	1.83	1.36	< 0.005	0.05	—	0.05	0.05	—	0.05	—	343	343	0.02	0.01	—	345
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	2.13	2.13	< 0.005	0.21	0.21	—	6.03	6.03	< 0.005	< 0.005	< 0.005	6.32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.03	0.33	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.7	56.7	< 0.005	< 0.005	—	57.0
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.64	0.00	0.00	0.61	0.61	0.00	0.14	0.14	—	631	631	0.01	< 0.005	1.71	634
Vendor	0.03	0.02	0.78	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	639	639	0.01	0.10	1.25	670
Hauling	0.03	0.02	1.00	0.18	0.01	0.02	0.23	0.24	0.02	0.06	0.08	—	835	835	0.01	0.13	1.49	876
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.35	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.13	104
Vendor	< 0.005	< 0.005	0.15	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	116	116	< 0.005	0.02	0.10	121
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	< 0.005	0.02	0.12	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.02	17.2
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.1	19.1	< 0.005	< 0.005	0.02	20.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.0	25.0	< 0.005	< 0.005	0.02	26.2

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	23.9	23.9	< 0.005	< 0.005	—	24.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.56	0.56	< 0.005	< 0.005	—	0.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	24.5	24.5	< 0.005	< 0.005	—	24.6

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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

Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Parking Lot	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
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.06	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8

Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Work: Grading and Earthwork	Grading	8/1/2027	3/30/2028	5.00	174	—
Structures	Building Construction	3/1/2028	5/1/2028	5.00	44.0	—
Roadway Work	Paving	5/1/2028	5/30/2028	5.00	22.0	—
Track and Signal Work	Trenching	5/1/2028	7/31/2028	5.00	66.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Work: Grading and Earthwork	Excavators	Diesel	Average	1.00	1.58	275	0.38
Site Work: Grading and Earthwork	Graders	Diesel	Average	1.00	0.32	190	0.41
Site Work: Grading and Earthwork	Rubber Tired Dozers	Diesel	Average	1.00	0.90	250	0.40
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Average	1.00	0.06	50.0	0.42

Site Work: Grading and Earthwork	Tractors/Loaders/Backh	Diesel	Average	1.00	0.90	86.0	0.37
Site Work: Grading and Earthwork	Excavators	Diesel	Average	1.00	0.17	275	0.38
Site Work: Grading and Earthwork	Welders	Diesel	Average	1.00	0.03	46.0	0.45
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Average	1.00	0.90	160	0.43
Structures	Other Construction Equipment	Diesel	Average	1.00	1.38	80.0	0.42
Structures	Welders	Diesel	Average	1.00	0.55	46.0	0.45
Structures	Rough Terrain Forklifts	Diesel	Average	1.00	1.38	75.0	0.40
Roadway Work	Graders	Diesel	Average	1.00	5.06	190	0.41
Roadway Work	Rubber Tired Dozers	Diesel	Average	1.00	5.06	250	0.40
Roadway Work	Excavators	Diesel	Average	1.00	5.06	275	0.38
Roadway Work	Paving Equipment	Diesel	Average	1.00	1.08	630	0.36
Roadway Work	Pavers	Diesel	Average	1.00	5.06	170	0.42
Roadway Work	Other Construction Equipment	Diesel	Average	1.00	5.06	150	0.43
Track and Signal Work	Other Construction Equipment	Diesel	Average	1.00	1.28	250	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	1.00	1.28	350	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	1.00	0.55	160	0.42
Track and Signal Work	Rubber Tired Loaders	Diesel	Average	1.00	0.97	250	0.36
Track and Signal Work	Tractors/Loaders/Backhoes	Diesel	Average	2.00	0.97	86.0	0.37
Track and Signal Work	Other Construction Equipment	Diesel	Average	2.00	0.18	4,400	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	6.00	0.07	75.0	0.42

Track and Signal Work	Other Construction Equipment	Diesel	Average	4.00	0.07	200	0.42
Track and Signal Work	Cranes	Diesel	Average	4.00	0.07	130	0.29
Track and Signal Work	Other Construction Equipment	Diesel	Average	4.00	0.07	10.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	2.00	0.07	350	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	2.00	0.07	160	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	2.00	0.07	84.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	2.00	0.07	225	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	8.00	0.52	100	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	8.00	0.52	75.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Average	1.00	0.73	300	0.45

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Work: Grading and Earthwork	—	—	—	—
Site Work: Grading and Earthwork	Worker	30.0	14.3	LDA,LDT1,LDT2
Site Work: Grading and Earthwork	Vendor	24.0	8.80	HHDT,MHDT
Site Work: Grading and Earthwork	Hauling	34.0	15.0	HHDT
Site Work: Grading and Earthwork	Onsite truck	10.0	2.00	HHDT
Structures	—	—	—	—
Structures	Worker	24.0	14.3	LDA,LDT1,LDT2

Structures	Vendor	12.0	8.80	HHDT,MHDT
Structures	Hauling	0.00	20.0	HHDT
Structures	Onsite truck	2.00	2.00	HHDT
Roadway Work	—	—	—	—
Roadway Work	Worker	36.0	14.3	LDA,LDT1,LDT2
Roadway Work	Vendor	36.0	8.80	HHDT,MHDT
Roadway Work	Hauling	0.00	20.0	HHDT
Roadway Work	Onsite truck	6.00	2.00	HHDT
Track and Signal Work	—	—	—	—
Track and Signal Work	Worker	60.0	14.3	LDA,LDT1,LDT2
Track and Signal Work	Vendor	24.0	8.80	HHDT,MHDT
Track and Signal Work	Hauling	9.00	27.0	HHDT
Track and Signal Work	Onsite truck	4.00	2.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Structures	0.00	0.00	12,000	4,000	24,306

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)

Site Work: Grading and Earthwork	12,783	27,225	13.3	1,000	—
Roadway Work	0.00	0.00	0.00	0.00	2.50
Track and Signal Work	11,690	—	3.20	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	2.40	0%
General Office Building	0.00	0%
Parking Lot	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	300	528	0.03	< 0.005
2028	300	528	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	77.9	17.7	5.60	21,529	552	125	39.6	152,383

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	12,000	4,000	24,306

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	323	0.0330	0.0040	0.00
General Office Building	163,088	323	0.0330	0.0040	253,451
Parking Lot	3,816	323	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
General Office Building	1,421,870	7,000
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Office Building	25.0	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	6.00	40.0	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.3	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	65.4
AQ-PM	16.4
AQ-DPM	62.4
Drinking Water	0.54
Lead Risk Housing	38.6
Pesticides	0.00
Toxic Releases	14.7
Traffic	80.2
Effect Indicators	—
CleanUp Sites	62.4
Groundwater	86.7
Haz Waste Facilities/Generators	52.6
Impaired Water Bodies	72.2
Solid Waste	94.1
Sensitive Population	—
Asthma	46.2
Cardio-vascular	83.6
Low Birth Weights	28.8
Socioeconomic Factor Indicators	—
Education	11.4
Housing	69.2
Linguistic	0.92
Poverty	42.6

Unemployment	64.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	55.89631721
Employed	49.83959964
Median HI	43.92403439
Education	—
Bachelor's or higher	58.65520339
High school enrollment	100
Preschool enrollment	16.54048505
Transportation	—
Auto Access	87.47593995
Active commuting	52.35467727
Social	—
2-parent households	62.5433081
Voting	80.61080457
Neighborhood	—
Alcohol availability	65.41768254
Park access	81.35506224
Retail density	75.01604004
Supermarket access	31.39997434
Tree canopy	83.53650712
Housing	—
Homeownership	54.45912999

Housing habitability	70.61465418
Low-inc homeowner severe housing cost burden	80.17451559
Low-inc renter severe housing cost burden	49.18516617
Uncrowded housing	78.31387142
Health Outcomes	—
Insured adults	54.83125882
Arthritis	38.0
Asthma ER Admissions	44.1
High Blood Pressure	70.1
Cancer (excluding skin)	27.6
Asthma	40.2
Coronary Heart Disease	57.7
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	82.1
Life Expectancy at Birth	45.6
Cognitively Disabled	62.4
Physically Disabled	24.6
Heart Attack ER Admissions	32.5
Mental Health Not Good	56.0
Chronic Kidney Disease	79.8
Obesity	54.0
Pedestrian Injuries	44.6
Physical Health Not Good	66.1
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	7.5
Current Smoker	49.4

No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	73.7
Elderly	47.3
English Speaking	70.8
Foreign-born	4.8
Outdoor Workers	85.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	78.6
Traffic Density	75.9
Traffic Access	49.4
Other Indices	—
Hardship	35.6
Other Decision Support	—
2016 Voting	75.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on applicant-provided data.
Construction: Construction Phases	Based on applicant-provided data.
Construction: Off-Road Equipment	Based on applicant-provided data.
Construction: Off-Road Equipment EF	Per EPA Line-Haul emission factors for Tier 3 locomotive.
Construction: Dust From Material Movement	Based on applicant-provided data.
Construction: Demolition	Based on applicant-provided data.
Construction: Trips and VMT	Based on applicant-provided data.
Construction: Architectural Coatings	Based on applicant-provided data.
Construction: Paving	Based on applicant-provided data.
Construction: Electricity	Based on applicant-provided data.
Operations: Water and Waste Water	Outdoor water use rate based on applicant-provided data.
Operations: Solid Waste	Solid waste generation rate based on applicant-provided data.

Roseville Layover Mitigated v4 Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Roseville Layover Mitigated v4
Construction Start Date	8/1/2027
Operational Year	2029
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	0.60
Location	38.756638691082856, -121.27398577092818
County	Placer-Sacramento
City	Roseville
Air District	Placer County APCD
Air Basin	Sacramento Valley
TAZ	443
EDFZ	15
Electric Utility	Roseville Electric
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Other Non-Asphalt Surfaces	9.20	Acre	9.20	0.00	0.00	—	—	—
General Office Building	8.00	1000sqft	0.20	8,000	0.00	—	—	—
Parking Lot	4.00	1000sqft	0.10	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.05	6.61	16.3	27.9	0.06	0.53	37.3	37.8	0.50	4.02	4.51	—	8,867	8,867	0.27	0.50	8.79	9,031
Mit.	0.91	5.07	6.63	30.4	0.06	0.13	21.7	21.9	0.13	2.47	2.60	—	8,509	8,509	0.24	0.49	8.79	8,669
% Reduced	56%	23%	59%	-9%	6%	75%	42%	42%	73%	39%	42%	—	4%	4%	11%	2%	—	4%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.48	4.02	5.89	6.00	0.03	0.12	37.5	37.6	0.11	4.26	4.37	—	3,908	3,908	0.07	0.46	0.17	4,049

Mit.	0.32	3.89	4.53	5.98	0.03	0.06	21.5	21.5	0.06	2.47	2.53	—	3,908	3,908	0.07	0.46	0.17	4,049
% Reduced	33%	3%	23%	< 0.5%	—	49%	43%	43%	47%	42%	42%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.23	0.86	2.41	3.91	0.01	0.06	9.66	9.72	0.06	1.09	1.14	—	1,618	1,618	0.04	0.13	0.90	1,660
Mit.	0.14	0.67	1.54	3.89	0.01	0.02	5.59	5.61	0.02	0.65	0.67	—	1,553	1,553	0.04	0.13	0.90	1,594
% Reduced	40%	22%	36%	1%	—	57%	42%	42%	55%	40%	41%	—	4%	4%	12%	1%	—	4%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.16	0.44	0.71	< 0.005	0.01	1.76	1.77	0.01	0.20	0.21	—	268	268	0.01	0.02	0.15	275
Mit.	0.03	0.12	0.28	0.71	< 0.005	< 0.005	1.02	1.02	< 0.005	0.12	0.12	—	257	257	0.01	0.02	0.15	264
% Reduced	40%	22%	36%	1%	6%	57%	42%	42%	55%	40%	41%	—	4%	4%	12%	1%	—	4%

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.38	0.31	4.81	4.78	0.02	0.10	31.3	31.3	0.09	3.59	3.68	—	3,342	3,342	0.06	0.41	5.96	3,470
2028	2.05	6.61	16.3	27.9	0.06	0.53	37.3	37.8	0.50	4.02	4.51	—	8,867	8,867	0.27	0.50	8.79	9,031
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.36	0.29	5.10	4.42	0.02	0.10	31.3	31.3	0.09	3.59	3.68	—	3,306	3,306	0.06	0.42	0.15	3,431
2028	0.48	4.02	5.89	6.00	0.03	0.12	37.5	37.6	0.11	4.26	4.37	—	3,908	3,908	0.07	0.46	0.17	4,049

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.11	0.09	1.50	1.33	0.01	0.03	9.36	9.39	0.03	1.07	1.10	—	992	992	0.02	0.12	0.77	1,030
2028	0.23	0.86	2.41	3.91	0.01	0.06	9.66	9.72	0.06	1.09	1.14	—	1,618	1,618	0.04	0.13	0.90	1,660
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.02	0.02	0.27	0.24	< 0.005	0.01	1.71	1.71	0.01	0.20	0.20	—	164	164	< 0.005	0.02	0.13	171
2028	0.04	0.16	0.44	0.71	< 0.005	0.01	1.76	1.77	0.01	0.20	0.21	—	268	268	0.01	0.02	0.15	275

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.26	0.21	3.76	4.69	0.02	0.05	17.8	17.9	0.05	2.06	2.12	—	3,342	3,342	0.06	0.41	5.96	3,470
2028	0.91	5.07	6.63	30.4	0.06	0.13	21.7	21.9	0.13	2.47	2.60	—	8,509	8,509	0.24	0.49	8.79	8,669
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.24	0.20	4.05	4.34	0.02	0.05	17.8	17.9	0.05	2.06	2.12	—	3,306	3,306	0.06	0.42	0.15	3,431
2028	0.32	3.89	4.53	5.98	0.03	0.06	21.5	21.5	0.06	2.47	2.53	—	3,908	3,908	0.07	0.46	0.17	4,049
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.07	0.06	1.18	1.30	0.01	0.02	5.34	5.36	0.02	0.62	0.63	—	992	992	0.02	0.12	0.77	1,030
2028	0.14	0.67	1.54	3.89	0.01	0.02	5.59	5.61	0.02	0.65	0.67	—	1,553	1,553	0.04	0.13	0.90	1,594
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.01	0.01	0.22	0.24	< 0.005	< 0.005	0.98	0.98	< 0.005	0.11	0.12	—	164	164	< 0.005	0.02	0.13	171
2028	0.03	0.12	0.28	0.71	< 0.005	< 0.005	1.02	1.02	< 0.005	0.12	0.12	—	257	257	0.01	0.02	0.15	264

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.41	0.63	0.43	2.51	0.01	0.02	0.39	0.42	0.02	0.10	0.12	16.2	712	728	1.67	0.03	1.14	780
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	0.54	0.46	1.92	< 0.005	0.02	0.39	0.42	0.02	0.10	0.12	16.2	672	688	1.67	0.03	0.05	739
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.47	0.23	1.51	< 0.005	0.01	0.30	0.31	0.01	0.08	0.08	16.2	560	576	1.67	0.02	0.38	625
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.09	0.04	0.28	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	2.69	92.7	95.3	0.28	< 0.005	0.06	103

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Area	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.41	0.63	0.43	2.51	0.01	0.02	0.39	0.42	0.02	0.10	0.12	16.2	712	728	1.67	0.03	1.14	780
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Area	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.32	0.54	0.46	1.92	< 0.005	0.02	0.39	0.42	0.02	0.10	0.12	16.2	672	688	1.67	0.03	0.05	739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.19	0.16	1.28	< 0.005	< 0.005	0.30	0.30	< 0.005	0.08	0.08	—	325	325	0.01	0.02	0.36	331
Area	0.03	0.27	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.71
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.55	0.55	< 0.005	< 0.005	0.00	0.55
Total	0.25	0.47	0.23	1.51	< 0.005	0.01	0.30	0.31	0.01	0.08	0.08	16.2	560	576	1.67	0.02	0.38	625
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8
Area	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12

Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.9	37.9	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Waste	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	0.05	0.09	0.04	0.28	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	2.69	92.7	95.3	0.28	< 0.005	0.06	103

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Area	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.41	0.63	0.43	2.51	0.01	0.02	0.39	0.42	0.02	0.10	0.12	16.2	712	728	1.67	0.03	1.14	780
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Area	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230

Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.32	0.54	0.46	1.92	< 0.005	0.02	0.39	0.42	0.02	0.10	0.12	16.2	672	688	1.67	0.03	0.05	739
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.19	0.16	1.28	< 0.005	< 0.005	0.30	0.30	< 0.005	0.08	0.08	—	325	325	0.01	0.02	0.36	331
Area	0.03	0.27	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.71
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.55	0.55	< 0.005	< 0.005	0.00	0.55
Total	0.25	0.47	0.23	1.51	< 0.005	0.01	0.30	0.31	0.01	0.08	0.08	16.2	560	576	1.67	0.02	0.38	625
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8
Area	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.9	37.9	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Waste	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	0.05	0.09	0.04	0.28	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	2.69	92.7	95.3	0.28	< 0.005	0.06	103

3. Construction Emissions Details

3.1. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.28	2.53	< 0.005	0.05	—	0.05	0.05	—	0.05	—	453	453	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.23	0.10	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.3	85.3	< 0.005	0.01	0.13	89.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.28	2.53	< 0.005	0.05	—	0.05	0.05	—	0.05	—	453	453	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.6	85.6	< 0.005	0.01	< 0.005	89.7

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.76	< 0.005	0.02	—	0.02	0.01	—	0.01	—	136	136	0.01	< 0.005	—	136
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.11	0.11	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	8.80	8.80	< 0.005	0.88	0.88	—	25.6	25.6	< 0.005	< 0.005	0.02	26.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.4	22.4	< 0.005	< 0.005	—	22.5
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	0.02	0.02	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.61	1.61	< 0.005	0.16	0.16	—	4.24	4.24	< 0.005	< 0.005	< 0.005	4.44
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.39	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	322	322	< 0.005	< 0.005	0.97	324
Vendor	0.03	0.02	0.82	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	656	656	0.01	0.10	1.44	687
Hauling	0.08	0.05	2.42	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,824	1,824	0.03	0.29	3.42	1,914
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.00	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	285	285	0.01	0.01	0.03	288

Vendor	0.03	0.02	0.88	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	657	657	0.01	0.10	0.04	686
Hauling	0.07	0.04	2.61	0.54	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,825	1,825	0.03	0.29	0.09	1,912
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.6	87.6	< 0.005	< 0.005	0.12	88.7
Vendor	0.01	0.01	0.26	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	197	197	< 0.005	0.03	0.19	205
Hauling	0.02	0.01	0.76	0.16	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	546	546	0.01	0.09	0.44	573
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.03	34.0
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	0.07	94.8

3.2. Grading (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.23	2.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	453	453	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.15	0.15	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.23	0.10	< 0.005	< 0.005	16.5	16.5	< 0.005	1.64	1.65	—	85.3	85.3	< 0.005	0.01	0.13	89.5

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.23	2.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	453	453	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.15	0.15	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	16.5	16.5	< 0.005	1.64	1.65	—	85.6	85.6	< 0.005	0.01	< 0.005	89.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.73	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	136	136	0.01	< 0.005	—	136
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.04	0.04	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	4.93	4.93	< 0.005	0.49	0.49	—	25.6	25.6	< 0.005	< 0.005	0.02	26.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	22.4	22.4	< 0.005	< 0.005	—	22.5
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.90	0.90	< 0.005	0.09	0.09	—	4.24	4.24	< 0.005	< 0.005	< 0.005	4.44
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.39	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	322	322	< 0.005	< 0.005	0.97	324
Vendor	0.03	0.02	0.82	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	656	656	0.01	0.10	1.44	687
Hauling	0.08	0.05	2.42	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,824	1,824	0.03	0.29	3.42	1,914
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.00	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	285	285	0.01	0.01	0.03	288
Vendor	0.03	0.02	0.88	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	657	657	0.01	0.10	0.04	686
Hauling	0.07	0.04	2.61	0.54	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,825	1,825	0.03	0.29	0.09	1,912
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.6	87.6	< 0.005	< 0.005	0.12	88.7
Vendor	0.01	0.01	0.26	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	197	197	< 0.005	0.03	0.19	205
Hauling	0.02	0.01	0.76	0.16	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	546	546	0.01	0.09	0.44	573
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.03	34.0
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	0.07	94.8

3.3. Grading (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.24	2.53	< 0.005	0.05	—	0.05	0.05	—	0.05	—	453	453	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	83.5	83.5	< 0.005	0.01	< 0.005	87.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	79.7	79.7	< 0.005	< 0.005	—	80.0
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.18	5.18	< 0.005	0.52	0.52	—	14.7	14.7	< 0.005	< 0.005	0.01	15.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.2	13.2	< 0.005	< 0.005	—	13.2
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—

Demolitio	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.94	0.94	< 0.005	0.09	0.09	—	2.43	2.43	< 0.005	< 0.005	< 0.005	2.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.95	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	279	279	0.01	0.01	0.02	282
Vendor	0.03	0.02	0.84	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	640	640	0.01	0.10	0.03	669
Hauling	0.07	0.04	2.51	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,777	1,777	0.03	0.28	0.08	1,860
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.5	50.5	< 0.005	< 0.005	0.07	50.6
Vendor	< 0.005	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.09	118
Hauling	0.01	0.01	0.43	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	313	313	< 0.005	0.05	0.24	328
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.35	8.35	< 0.005	< 0.005	0.01	8.39
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.5
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.8	51.8	< 0.005	0.01	0.04	54.3

3.4. Grading (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.23	2.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	453	453	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.15	0.15	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	16.5	16.5	< 0.005	1.64	1.65	—	83.5	83.5	< 0.005	0.01	< 0.005	87.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.04	0.43	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	79.7	79.7	< 0.005	< 0.005	—	80.0
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	2.90	2.90	< 0.005	0.29	0.29	—	14.7	14.7	< 0.005	< 0.005	0.01	15.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.2	13.2	< 0.005	< 0.005	—	13.2
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.53	0.53	< 0.005	0.05	0.05	—	2.43	2.43	< 0.005	< 0.005	< 0.005	2.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.95	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	279	279	0.01	0.01	0.02	282
Vendor	0.03	0.02	0.84	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	640	640	0.01	0.10	0.03	669
Hauling	0.07	0.04	2.51	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,777	1,777	0.03	0.28	0.08	1,860
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.5	50.5	< 0.005	< 0.005	0.07	50.6
Vendor	< 0.005	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.09	118
Hauling	0.01	0.01	0.43	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	313	313	< 0.005	0.05	0.24	328
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.35	8.35	< 0.005	< 0.005	0.01	8.39
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.5
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.8	51.8	< 0.005	0.01	0.04	54.3

3.5. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	0.05	0.48	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.48	0.76	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.7	16.7	< 0.005	< 0.005	< 0.005	17.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.71	0.71	< 0.005	0.07	0.07	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.32	2.32	< 0.005	< 0.005	—	2.33
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	< 0.005	0.68	254
Vendor	0.01	0.01	0.39	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.62	335
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.76	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	223	223	< 0.005	0.01	0.02	226
Vendor	0.01	0.01	0.42	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.02	334
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	27.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.5	38.5	< 0.005	0.01	0.03	40.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.38	6.38	< 0.005	< 0.005	0.01	6.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Building Construction (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.01	0.12	0.82	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	116	116	< 0.005	< 0.005	—	117
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	3.29	3.29	< 0.005	0.33	0.33	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.12	0.82	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	116	116	< 0.005	< 0.005	—	117
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	3.29	3.29	< 0.005	0.33	0.33	—	16.7	16.7	< 0.005	< 0.005	< 0.005	17.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.40	0.40	< 0.005	0.04	0.04	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.32	2.32	< 0.005	< 0.005	—	2.33
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	< 0.005	0.68	254
Vendor	0.01	0.01	0.39	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.62	335
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.76	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	223	223	< 0.005	0.01	0.02	226
Vendor	0.01	0.01	0.42	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.02	334
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	27.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.5	38.5	< 0.005	0.01	0.03	40.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.38	6.38	< 0.005	< 0.005	0.01	6.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.36	1.14	9.92	11.4	0.03	0.42	—	0.42	0.39	—	0.39	—	2,749	2,749	0.11	0.02	—	2,758
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	17.6	17.6	< 0.005	1.76	1.76	—	49.9	49.9	< 0.005	0.01	0.07	52.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.60	0.69	< 0.005	0.03	—	0.03	0.02	—	0.02	—	166	166	0.01	< 0.005	—	166
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	1.06	1.06	< 0.005	0.11	0.11	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.4	27.4	< 0.005	< 0.005	—	27.5
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.52
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.07	1.58	0.00	0.00	0.36	0.36	0.00	0.09	0.09	—	379	379	< 0.005	< 0.005	1.03	381
Vendor	0.04	0.03	1.17	0.32	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	959	959	0.01	0.15	1.87	1,004
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.7	20.7	< 0.005	< 0.005	0.03	20.8
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.8	57.8	< 0.005	0.01	0.05	60.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.43	3.43	< 0.005	< 0.005	< 0.005	3.44
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.57	9.57	< 0.005	< 0.005	0.01	10.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Paving (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.26	1.35	15.2	0.03	0.05	—	0.05	0.05	—	0.05	—	2,749	2,749	0.11	0.02	—	2,758
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	9.88	9.88	< 0.005	0.99	0.99	—	49.9	49.9	< 0.005	0.01	0.07	52.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.08	0.92	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	166	166	0.01	< 0.005	—	166
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.60	0.60	< 0.005	0.06	0.06	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.16

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.4	27.4	< 0.005	< 0.005	—	27.5
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.52
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.07	1.58	0.00	0.00	0.36	0.36	0.00	0.09	0.09	—	379	379	< 0.005	< 0.005	1.03	381
Vendor	0.04	0.03	1.17	0.32	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	959	959	0.01	0.15	1.87	1,004
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.7	20.7	< 0.005	< 0.005	0.03	20.8
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.8	57.8	< 0.005	0.01	0.05	60.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.43	3.43	< 0.005	< 0.005	< 0.005	3.44
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.57	9.57	< 0.005	< 0.005	0.01	10.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Trenching (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	1.35	2.06	9.51	0.02	0.04	—	0.04	0.04	—	0.04	—	1,887	1,887	0.11	0.03	—	1,898
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	11.8	11.8	< 0.005	1.17	1.17	—	33.3	33.3	< 0.005	0.01	0.05	34.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.24	0.37	1.72	< 0.005	0.01	—	0.01	0.01	—	0.01	—	341	341	0.02	0.01	—	343
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	2.13	2.13	< 0.005	0.21	0.21	—	6.03	6.03	< 0.005	< 0.005	< 0.005	6.32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.07	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	56.5	56.5	< 0.005	< 0.005	—	56.8
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.64	0.00	0.00	0.61	0.61	0.00	0.14	0.14	—	631	631	0.01	< 0.005	1.71	634
Vendor	0.03	0.02	0.78	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	639	639	0.01	0.10	1.25	670
Hauling	0.03	0.02	1.00	0.18	0.01	0.02	0.23	0.24	0.02	0.06	0.08	—	835	835	0.01	0.13	1.49	876
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.35	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.13	104
Vendor	< 0.005	< 0.005	0.15	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	116	116	< 0.005	0.02	0.10	121
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	< 0.005	0.02	0.12	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.02	17.2
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.1	19.1	< 0.005	< 0.005	0.02	20.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.0	25.0	< 0.005	< 0.005	0.02	26.2

3.10. Trenching (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.73	1.32	8.17	0.01	0.03	—	0.03	0.03	—	0.03	—	1,528	1,528	0.08	0.02	—	1,536

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	6.58	6.59	< 0.005	0.66	0.66	—	33.3	33.3	< 0.005	0.01	0.05	34.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.13	0.24	1.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	276	276	0.01	< 0.005	—	278
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	1.19	1.19	< 0.005	0.12	0.12	—	6.03	6.03	< 0.005	< 0.005	< 0.005	6.32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.04	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	45.7	45.7	< 0.005	< 0.005	—	46.0
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.22	0.22	< 0.005	0.02	0.02	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.64	0.00	0.00	0.61	0.61	0.00	0.14	0.14	—	631	631	0.01	< 0.005	1.71	634
Vendor	0.03	0.02	0.78	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	639	639	0.01	0.10	1.25	670
Hauling	0.03	0.02	1.00	0.18	0.01	0.02	0.23	0.24	0.02	0.06	0.08	—	835	835	0.01	0.13	1.49	876

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.35	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.13	104
Vendor	< 0.005	< 0.005	0.15	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	116	116	< 0.005	0.02	0.10	121
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	< 0.005	0.02	0.12	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.02	17.2
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.1	19.1	< 0.005	< 0.005	0.02	20.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.0	25.0	< 0.005	< 0.005	0.02	26.2

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

General Office Building	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.31	0.29	0.19	1.97	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	461	461	0.02	0.02	1.12	468
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.27	0.25	0.22	1.73	< 0.005	< 0.005	0.39	0.40	< 0.005	0.10	0.10	—	422	422	0.02	0.02	0.03	429
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.03	0.23	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	53.9	53.9	< 0.005	< 0.005	0.06	54.8

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	23.9	23.9	< 0.005	< 0.005	—	24.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.56	0.56	< 0.005	< 0.005	—	0.56

Total	—	—	—	—	—	—	—	—	—	—	—	—	24.5	24.5	< 0.005	< 0.005	—	24.6

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	23.9	23.9	< 0.005	< 0.005	—	24.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.56	0.56	< 0.005	< 0.005	—	0.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	24.5	24.5	< 0.005	< 0.005	—	24.6

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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

Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Parking Lot	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
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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

General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Parking Lot	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
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.06	0.06	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.06	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency Generato	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Work: Grading and Earthwork	Grading	8/1/2027	3/30/2028	5.00	174	—

Structures	Building Construction	3/1/2028	5/1/2028	5.00	44.0	—
Roadway Work	Paving	5/1/2028	5/30/2028	5.00	22.0	—
Track and Signal Work	Trenching	5/1/2028	7/31/2028	5.00	66.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	1.58	275	0.38
Site Work: Grading and Earthwork	Graders	Diesel	Average	1.00	0.32	190	0.41
Site Work: Grading and Earthwork	Rubber Tired Dozers	Diesel	Average	1.00	0.90	250	0.40
Site Work: Grading and Earthwork	Tractors/Loaders/Backhoes	Diesel	Average	1.00	0.90	86.0	0.37
Site Work: Grading and Earthwork	Welders	Diesel	Average	1.00	0.03	46.0	0.45
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	0.17	275	0.38
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.06	50.0	0.42
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.90	160	0.42
Structures	Other Construction Equipment	Diesel	Average	1.00	1.38	80.0	0.42
Structures	Welders	Diesel	Average	1.00	0.55	46.0	0.45
Structures	Rough Terrain Forklifts	Diesel	Average	1.00	1.38	75.0	0.40
Roadway Work	Graders	Diesel	Average	1.00	5.06	190	0.41
Roadway Work	Rubber Tired Dozers	Diesel	Average	1.00	5.06	250	0.40
Roadway Work	Excavators	Diesel	Average	1.00	5.06	275	0.38

Roadway Work	Paving Equipment	Diesel	Average	1.00	1.08	630	0.36
Roadway Work	Pavers	Diesel	Average	1.00	5.06	170	0.42
Roadway Work	Other Construction Equipment	Diesel	Average	1.00	5.06	150	0.43
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	1.28	250	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	1.28	350	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.55	160	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.73	300	0.42
Track and Signal Work	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	0.97	86.0	0.37
Track and Signal Work	Other Construction Equipment	Diesel	Average	2.00	0.18	4,400	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	6.00	0.07	75.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	4.00	0.07	200	0.42
Track and Signal Work	Cranes	Diesel	Tier 4 Final	4.00	0.07	130	0.29
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	4.00	0.07	10.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	0.07	350	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	0.07	160	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	0.07	84.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	0.07	225	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	8.00	0.52	100	0.42

Track and Signal Work	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	0.97	250	0.36
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	8.00	0.52	75.0	0.42

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	1.58	275	0.38
Site Work: Grading and Earthwork	Graders	Diesel	Tier 4 Final	1.00	0.32	190	0.41
Site Work: Grading and Earthwork	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	0.90	250	0.40
Site Work: Grading and Earthwork	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	0.90	86.0	0.37
Site Work: Grading and Earthwork	Welders	Diesel	Tier 4 Final	1.00	0.03	46.0	0.45
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	0.17	275	0.38
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.06	50.0	0.42
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.90	160	0.42
Structures	Other Construction Equipment	Diesel	Tier 4 Final	1.00	1.38	80.0	0.42
Structures	Welders	Diesel	Tier 4 Final	1.00	0.55	46.0	0.45
Structures	Rough Terrain Forklifts	Diesel	Tier 4 Final	1.00	1.38	75.0	0.40
Roadway Work	Graders	Diesel	Tier 4 Final	1.00	5.06	190	0.41
Roadway Work	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	5.06	250	0.40
Roadway Work	Excavators	Diesel	Tier 4 Final	1.00	5.06	275	0.38
Roadway Work	Paving Equipment	Diesel	Tier 4 Final	1.00	1.08	630	0.36
Roadway Work	Pavers	Diesel	Tier 4 Final	1.00	5.06	170	0.42

Roadway Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	5.06	150	0.43
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	1.28	250	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	1.28	350	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.55	160	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.73	300	0.42
Track and Signal Work	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	0.97	86.0	0.37
Track and Signal Work	Other Construction Equipment	Diesel	Average	1.00	0.18	4,400	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.18	4,400	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	5.00	0.07	75.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	75.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	3.00	0.07	200	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	200	0.42
Track and Signal Work	Cranes	Diesel	Tier 4 Final	4.00	0.07	130	0.29
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	3.00	0.07	10.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	10.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	350	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	350	0.42

Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	160	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	160	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	84.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	84.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	225	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.07	225	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	7.00	0.52	100	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.52	100	0.42
Track and Signal Work	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	0.97	250	0.36
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	7.00	0.52	75.0	0.42
Track and Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	0.52	75.0	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Work: Grading and Earthwork	—	—	—	—
Site Work: Grading and Earthwork	Worker	30.0	14.3	LDA,LDT1,LDT2
Site Work: Grading and Earthwork	Vendor	24.0	8.80	HHDT,MHDT
Site Work: Grading and Earthwork	Hauling	34.0	15.0	HHDT
Site Work: Grading and Earthwork	Onsite truck	10.0	2.00	HHDT

Structures	—	—	—	—
Structures	Worker	24.0	14.3	LDA,LDT1,LDT2
Structures	Vendor	12.0	8.80	HHDT,MHDT
Structures	Hauling	0.00	20.0	HHDT
Structures	Onsite truck	2.00	2.00	HHDT
Roadway Work	—	—	—	—
Roadway Work	Worker	36.0	14.3	LDA,LDT1,LDT2
Roadway Work	Vendor	36.0	8.80	HHDT,MHDT
Roadway Work	Hauling	0.00	20.0	HHDT
Roadway Work	Onsite truck	6.00	2.00	HHDT
Track and Signal Work	—	—	—	—
Track and Signal Work	Worker	60.0	14.3	LDA,LDT1,LDT2
Track and Signal Work	Vendor	24.0	8.80	HHDT,MHDT
Track and Signal Work	Hauling	9.00	27.0	HHDT
Track and Signal Work	Onsite truck	4.00	2.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Work: Grading and Earthwork	—	—	—	—
Site Work: Grading and Earthwork	Worker	30.0	14.3	LDA,LDT1,LDT2
Site Work: Grading and Earthwork	Vendor	24.0	8.80	HHDT,MHDT
Site Work: Grading and Earthwork	Hauling	34.0	15.0	HHDT
Site Work: Grading and Earthwork	Onsite truck	10.0	2.00	HHDT
Structures	—	—	—	—
Structures	Worker	24.0	14.3	LDA,LDT1,LDT2
Structures	Vendor	12.0	8.80	HHDT,MHDT
Structures	Hauling	0.00	20.0	HHDT

Structures	Onsite truck	2.00	2.00	HHDT
Roadway Work	—	—	—	—
Roadway Work	Worker	36.0	14.3	LDA,LDT1,LDT2
Roadway Work	Vendor	36.0	8.80	HHDT,MHDT
Roadway Work	Hauling	0.00	20.0	HHDT
Roadway Work	Onsite truck	6.00	2.00	HHDT
Track and Signal Work	—	—	—	—
Track and Signal Work	Worker	60.0	14.3	LDA,LDT1,LDT2
Track and Signal Work	Vendor	24.0	8.80	HHDT,MHDT
Track and Signal Work	Hauling	9.00	27.0	HHDT
Track and Signal Work	Onsite truck	4.00	2.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Structures	0.00	0.00	12,000	4,000	24,306

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Site Work: Grading and Earthwork	12,783	27,225	13.3	1,000	—

Roadway Work	0.00	0.00	0.00	0.00	2.50
Track and Signal Work	11,690	—	3.20	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	2.40	0%
General Office Building	0.00	0%
Parking Lot	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	300	528	0.03	< 0.005
2028	300	528	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	77.9	17.7	5.60	21,529	552	125	39.6	152,383
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	77.9	17.7	5.60	21,529	552	125	39.6	152,383
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	12,000	4,000	24,306

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value

Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	323	0.0330	0.0040	0.00
General Office Building	163,088	323	0.0330	0.0040	253,451
Parking Lot	3,816	323	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	323	0.0330	0.0040	0.00
General Office Building	163,088	323	0.0330	0.0040	253,451
Parking Lot	3,816	323	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
General Office Building	1,421,870	7,000
Parking Lot	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
General Office Building	1,421,870	7,000
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Office Building	25.0	—
Parking Lot	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Office Building	25.0	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00

General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	6.00	40.0	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.3	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	65.4
AQ-PM	16.4
AQ-DPM	62.4
Drinking Water	0.54
Lead Risk Housing	38.6
Pesticides	0.00
Toxic Releases	14.7
Traffic	80.2
Effect Indicators	—
CleanUp Sites	62.4
Groundwater	86.7
Haz Waste Facilities/Generators	52.6
Impaired Water Bodies	72.2
Solid Waste	94.1
Sensitive Population	—
Asthma	46.2
Cardio-vascular	83.6
Low Birth Weights	28.8
Socioeconomic Factor Indicators	—
Education	11.4
Housing	69.2
Linguistic	0.92
Poverty	42.6

Unemployment	64.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	55.89631721
Employed	49.83959964
Median HI	43.92403439
Education	—
Bachelor's or higher	58.65520339
High school enrollment	100
Preschool enrollment	16.54048505
Transportation	—
Auto Access	87.47593995
Active commuting	52.35467727
Social	—
2-parent households	62.5433081
Voting	80.61080457
Neighborhood	—
Alcohol availability	65.41768254
Park access	81.35506224
Retail density	75.01604004
Supermarket access	31.39997434
Tree canopy	83.53650712
Housing	—
Homeownership	54.45912999

Housing habitability	70.61465418
Low-inc homeowner severe housing cost burden	80.17451559
Low-inc renter severe housing cost burden	49.18516617
Uncrowded housing	78.31387142
Health Outcomes	—
Insured adults	54.83125882
Arthritis	38.0
Asthma ER Admissions	44.1
High Blood Pressure	70.1
Cancer (excluding skin)	27.6
Asthma	40.2
Coronary Heart Disease	57.7
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	82.1
Life Expectancy at Birth	45.6
Cognitively Disabled	62.4
Physically Disabled	24.6
Heart Attack ER Admissions	32.5
Mental Health Not Good	56.0
Chronic Kidney Disease	79.8
Obesity	54.0
Pedestrian Injuries	44.6
Physical Health Not Good	66.1
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	7.5
Current Smoker	49.4

No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	73.7
Elderly	47.3
English Speaking	70.8
Foreign-born	4.8
Outdoor Workers	85.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	78.6
Traffic Density	75.9
Traffic Access	49.4
Other Indices	—
Hardship	35.6
Other Decision Support	—
2016 Voting	75.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on applicant-provided data.
Construction: Construction Phases	Based on applicant-provided data.
Construction: Off-Road Equipment	Based on applicant-provided data.
Construction: Off-Road Equipment EF	Per EPA Line-Haul emission factors for Tier 4 locomotive.
Construction: Dust From Material Movement	Based on applicant-provided data.
Construction: Demolition	Based on applicant-provided data.
Construction: Trips and VMT	Based on applicant-provided data.
Construction: Architectural Coatings	Based on applicant-provided data.
Construction: Paving	Based on applicant-provided data.
Construction: Electricity	Based on applicant-provided data.
Operations: Water and Waste Water	Outdoor water use rate based on applicant-provided data.
Operations: Solid Waste	Solid waste generation rate based on applicant-provided data.

Roseville Layover - Max Daily Unmit Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Roseville Layover - Max Daily Unmit
Construction Start Date	8/1/2027
Operational Year	2029
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	0.60
Location	38.75695399967785, -121.27424308615056
County	Placer-Sacramento
City	Roseville
Air District	Placer County APCD
Air Basin	Sacramento Valley
TAZ	443
EDFZ	15
Electric Utility	Roseville Electric
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Other Non-Asphalt Surfaces	9.20	Acre	9.20	0.00	0.00	—	—	—
General Office Building	8.00	1000sqft	0.20	8,000	0.00	—	—	—
Parking Lot	4.00	1000sqft	0.10	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	10.9	21.7	227	163	0.39	6.09	37.3	43.3	5.75	5.35	9.77	—	42,609	42,609	2.27	1.05	8.79	42,988
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.42	5.65	19.7	18.8	0.05	0.79	41.1	41.9	0.73	6.01	6.74	—	6,953	6,953	0.19	0.49	0.17	7,103
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.01	3.74	41.7	29.1	0.07	1.14	10.5	11.4	1.07	1.60	2.47	—	7,855	7,855	0.41	0.24	0.90	7,937
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	0.68	7.60	5.30	0.01	0.21	1.91	2.09	0.20	0.29	0.45	—	1,301	1,301	0.07	0.04	0.15	1,314

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	2.07	1.72	17.2	15.4	0.05	0.68	34.9	35.6	0.63	5.35	5.98	—	6,086	6,086	0.17	0.43	5.96	6,223
2028	10.9	21.7	227	163	0.39	6.09	37.3	43.3	5.75	4.02	9.77	—	42,609	42,609	2.27	1.05	8.79	42,988
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	2.05	1.71	17.5	15.1	0.05	0.68	34.9	35.6	0.63	5.35	5.98	—	6,050	6,050	0.17	0.44	0.15	6,185
2028	2.42	5.65	19.7	18.8	0.05	0.79	41.1	41.9	0.73	6.01	6.74	—	6,953	6,953	0.19	0.49	0.17	7,103
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.62	0.51	5.21	4.52	0.01	0.20	10.5	10.7	0.19	1.60	1.79	—	1,813	1,813	0.05	0.13	0.77	1,855
2028	2.01	3.74	41.7	29.1	0.07	1.14	10.3	11.4	1.07	1.40	2.47	—	7,855	7,855	0.41	0.24	0.90	7,937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.11	0.09	0.95	0.82	< 0.005	0.04	1.91	1.95	0.03	0.29	0.33	—	300	300	0.01	0.02	0.13	307
2028	0.37	0.68	7.60	5.30	0.01	0.21	1.88	2.09	0.20	0.25	0.45	—	1,301	1,301	0.07	0.04	0.15	1,314

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.42	0.63	0.44	2.62	0.01	0.02	0.42	0.44	0.02	0.11	0.13	16.2	744	760	1.67	0.03	1.21	812
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	0.54	0.47	2.00	< 0.005	0.02	0.42	0.44	0.02	0.11	0.13	16.2	700	716	1.67	0.03	0.05	768

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.48	0.24	1.57	< 0.005	0.01	0.32	0.33	0.01	0.08	0.09	16.2	582	598	1.67	0.03	0.41	648
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.09	0.04	0.29	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	2.69	96.3	99.0	0.28	< 0.005	0.07	107

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Area	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.42	0.63	0.44	2.62	0.01	0.02	0.42	0.44	0.02	0.11	0.13	16.2	744	760	1.67	0.03	1.21	812
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Area	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7

Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.32	0.54	0.47	2.00	< 0.005	0.02	0.42	0.44	0.02	0.11	0.13	16.2	700	716	1.67	0.03	0.05	768
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.20	0.16	1.34	< 0.005	< 0.005	0.32	0.32	< 0.005	0.08	0.08	—	347	347	0.01	0.02	0.39	353
Area	0.03	0.27	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.71
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.55	0.55	< 0.005	< 0.005	0.00	0.55
Total	0.25	0.48	0.24	1.57	< 0.005	0.01	0.32	0.33	0.01	0.08	0.09	16.2	582	598	1.67	0.03	0.41	648
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5
Area	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.9	37.9	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Waste	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	0.05	0.09	0.04	0.29	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	2.69	96.3	99.0	0.28	< 0.005	0.07	107

3. Construction Emissions Details

3.1. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.85	1.55	13.7	13.2	0.03	0.64	—	0.64	0.59	—	0.59	—	3,197	3,197	0.13	0.03	—	3,208
Dust From Material Movement	—	—	—	—	—	—	4.45	4.45	—	2.14	2.14	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.23	0.10	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.3	85.3	< 0.005	0.01	0.13	89.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.85	1.55	13.7	13.2	0.03	0.64	—	0.64	0.59	—	0.59	—	3,197	3,197	0.13	0.03	—	3,208
Dust From Material Movement	—	—	—	—	—	—	4.45	4.45	—	2.14	2.14	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.6	85.6	< 0.005	0.01	< 0.005	89.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.47	4.10	3.95	0.01	0.19	—	0.19	0.18	—	0.18	—	957	957	0.04	0.01	—	960

Dust From Material Movement	—	—	—	—	—	—	1.33	1.33	—	0.64	0.64	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	8.80	8.80	< 0.005	0.88	0.88	—	25.6	25.6	< 0.005	< 0.005	0.02	26.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.75	0.72	< 0.005	0.03	—	0.03	0.03	—	0.03	—	158	158	0.01	< 0.005	—	159
Dust From Material Movement	—	—	—	—	—	—	0.24	0.24	—	0.12	0.12	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.61	1.61	< 0.005	0.16	0.16	—	4.24	4.24	< 0.005	< 0.005	< 0.005	4.44
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.39	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	322	322	< 0.005	< 0.005	0.97	324
Vendor	0.03	0.02	0.82	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	656	656	0.01	0.10	1.44	687
Hauling	0.08	0.05	2.42	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,824	1,824	0.03	0.29	3.42	1,914
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.00	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	285	285	0.01	0.01	0.03	288
Vendor	0.03	0.02	0.88	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	657	657	0.01	0.10	0.04	686
Hauling	0.07	0.04	2.61	0.54	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,825	1,825	0.03	0.29	0.09	1,912

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.6	87.6	< 0.005	< 0.005	0.12	88.7
Vendor	0.01	0.01	0.26	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	197	197	< 0.005	0.03	0.19	205
Hauling	0.02	0.01	0.76	0.16	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	546	546	0.01	0.09	0.44	573
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.03	34.0
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	0.07	94.8

3.3. Grading (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.93	1.62	13.7	13.3	0.03	0.67	—	0.67	0.62	—	0.62	—	3,196	3,196	0.13	0.03	—	3,207
Dust From Material Movement	—	—	—	—	—	—	4.45	4.45	—	2.14	2.14	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	83.5	83.5	< 0.005	0.01	< 0.005	87.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.34	0.29	2.41	2.35	0.01	0.12	—	0.12	0.11	—	0.11	—	563	563	0.02	< 0.005	—	565
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.18	5.18	< 0.005	0.52	0.52	—	14.7	14.7	< 0.005	< 0.005	0.01	15.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.43	< 0.005	0.02	—	0.02	0.02	—	0.02	—	93.2	93.2	< 0.005	< 0.005	—	93.5
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.94	0.94	< 0.005	0.09	0.09	—	2.43	2.43	< 0.005	< 0.005	< 0.005	2.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.95	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	279	279	0.01	0.01	0.02	282
Vendor	0.03	0.02	0.84	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	640	640	0.01	0.10	0.03	669
Hauling	0.07	0.04	2.51	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,777	1,777	0.03	0.28	0.08	1,860
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.5	50.5	< 0.005	< 0.005	0.07	50.6

Vendor	< 0.005	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.09	118
Hauling	0.01	0.01	0.43	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	313	313	< 0.005	0.05	0.24	328
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.35	8.35	< 0.005	< 0.005	0.01	8.39
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.5
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.8	51.8	< 0.005	0.01	0.04	54.3

3.5. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.86	2.79	< 0.005	0.07	—	0.07	0.06	—	0.06	—	417	417	0.02	< 0.005	—	418
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.86	2.79	< 0.005	0.07	—	0.07	0.06	—	0.06	—	417	417	0.02	< 0.005	—	418
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.7	16.7	< 0.005	< 0.005	< 0.005	17.5

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.34	< 0.005	0.01	—	0.01	0.01	—	0.01	—	50.3	50.3	< 0.005	< 0.005	—	50.4
Architectural Coatings	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.71	0.71	< 0.005	0.07	0.07	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.32	8.32	< 0.005	< 0.005	—	8.35
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	< 0.005	0.68	254
Vendor	0.01	0.01	0.39	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.62	335
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.76	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	223	223	< 0.005	0.01	0.02	226
Vendor	0.01	0.01	0.42	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.02	334
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	27.7

Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.5	38.5	< 0.005	0.01	0.03	40.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.38	6.38	< 0.005	< 0.005	0.01	6.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.44	2.05	17.2	20.2	0.05	0.69	—	0.69	0.64	—	0.64	—	5,475	5,475	0.22	0.04	—	5,494
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	17.6	17.6	< 0.005	1.76	1.76	—	49.9	49.9	< 0.005	0.01	0.07	52.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.04	1.21	< 0.005	0.04	—	0.04	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	1.06	1.06	< 0.005	0.11	0.11	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.02	0.19	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	54.6	54.6	< 0.005	< 0.005	—	54.8
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.52
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.07	1.58	0.00	0.00	0.36	0.36	0.00	0.09	0.09	—	379	379	< 0.005	< 0.005	1.03	381
Vendor	0.04	0.03	1.17	0.32	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	959	959	0.01	0.15	1.87	1,004
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.7	20.7	< 0.005	< 0.005	0.03	20.8
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.8	57.8	< 0.005	0.01	0.05	60.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.43	3.43	< 0.005	< 0.005	< 0.005	3.44
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.57	9.57	< 0.005	< 0.005	0.01	10.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Trenching (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	7.74	15.4	204	134	0.32	5.28	—	5.28	5.00	—	5.00	—	32,601	32,601	1.98	0.56	—	32,817
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	11.8	11.8	< 0.005	1.17	1.17	—	33.3	33.3	< 0.005	0.01	0.05	34.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.40	2.79	36.8	24.2	0.06	0.96	—	0.96	0.90	—	0.90	—	5,895	5,895	0.36	0.10	—	5,934
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	2.13	2.13	< 0.005	0.21	0.21	—	6.03	6.03	< 0.005	< 0.005	< 0.005	6.32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.51	6.72	4.42	0.01	0.17	—	0.17	0.17	—	0.17	—	976	976	0.06	0.02	—	982
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.64	0.00	0.00	0.61	0.61	0.00	0.14	0.14	—	631	631	0.01	< 0.005	1.71	634
Vendor	0.03	0.02	0.78	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	639	639	0.01	0.10	1.25	670
Hauling	0.03	0.02	1.00	0.18	0.01	0.02	0.23	0.24	0.02	0.06	0.08	—	835	835	0.01	0.13	1.49	876
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.35	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.13	104
Vendor	< 0.005	< 0.005	0.15	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	116	116	< 0.005	0.02	0.10	121
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	< 0.005	0.02	0.12	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.02	17.2
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.1	19.1	< 0.005	< 0.005	0.02	20.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.0	25.0	< 0.005	< 0.005	0.02	26.2

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	23.9	23.9	< 0.005	< 0.005	—	24.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.56	0.56	< 0.005	< 0.005	—	0.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	24.5	24.5	< 0.005	< 0.005	—	24.6

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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

Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Parking Lot	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
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.06	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8

Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Work: Grading and Earthwork	Grading	8/1/2027	3/30/2028	5.00	174	—
Structures Work	Building Construction	3/1/2028	5/1/2028	5.00	44.0	—
Roadway Work	Paving	5/1/2028	5/30/2028	5.00	22.0	—
Track & Signal Work	Trenching	5/1/2028	7/31/2028	5.00	66.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Work: Grading and Earthwork	Excavators	Diesel	Average	1.00	5.00	275	0.38
Site Work: Grading and Earthwork	Graders	Diesel	Average	1.00	5.00	190	0.41
Site Work: Grading and Earthwork	Rubber Tired Dozers	Diesel	Average	1.00	5.00	250	0.40
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Average	1.00	5.00	50.0	0.42

Site Work: Grading and Earthwork	Tractors/Loaders/Backh	Diesel	Average	1.00	6.00	86.0	0.37
Site Work: Grading and Earthwork	Excavators	Diesel	Average	1.00	6.00	275	0.38
Site Work: Grading and Earthwork	Welders	Diesel	Average	1.00	3.00	46.0	0.45
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Average	1.00	5.00	160	0.43
Structures Work	Other Construction Equipment	Diesel	Average	1.00	6.00	80.0	0.42
Structures Work	Welders	Diesel	Average	1.00	3.00	46.0	0.45
Structures Work	Rough Terrain Forklifts	Diesel	Average	1.00	3.00	75.0	0.40
Roadway Work	Graders	Diesel	Average	1.00	8.00	190	0.41
Roadway Work	Rubber Tired Dozers	Diesel	Average	1.00	8.00	250	0.40
Roadway Work	Excavators	Diesel	Average	1.00	8.00	275	0.38
Roadway Work	Paving Equipment	Diesel	Average	1.00	6.00	630	0.36
Roadway Work	Pavers	Diesel	Average	1.00	8.00	170	0.42
Roadway Work	Other Construction Equipment	Diesel	Average	1.00	8.00	150	0.43
Track & Signal Work	Other Construction Equipment	Diesel	Average	1.00	4.00	250	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	1.00	4.00	350	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	1.00	4.00	160	0.42
Track & Signal Work	Rubber Tired Loaders	Diesel	Average	1.00	4.00	250	0.36
Track & Signal Work	Tractors/Loaders/Backhoes	Diesel	Average	2.00	4.00	86.0	0.37
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	4.00	4,400	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	6.00	6.00	75.0	0.42

Track & Signal Work	Other Construction Equipment	Diesel	Average	4.00	6.00	200	0.42
Track & Signal Work	Cranes	Diesel	Average	4.00	6.00	130	0.29
Track & Signal Work	Other Construction Equipment	Diesel	Average	4.00	6.00	10.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	6.00	350	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	6.00	160	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	6.00	84.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	6.00	225	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	8.00	6.00	100	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	8.00	6.00	75.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Average	1.00	4.00	300	0.45

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Work: Grading and Earthwork	—	—	—	—
Site Work: Grading and Earthwork	Worker	30.0	14.3	LDA,LDT1,LDT2
Site Work: Grading and Earthwork	Vendor	24.0	8.80	HHDT,MHDT
Site Work: Grading and Earthwork	Hauling	34.0	15.0	HHDT
Site Work: Grading and Earthwork	Onsite truck	10.0	2.00	HHDT
Structures Work	—	—	—	—
Structures Work	Worker	24.0	14.3	LDA,LDT1,LDT2

Structures Work	Vendor	12.0	8.80	HHDT,MHDT
Structures Work	Hauling	0.00	20.0	HHDT
Structures Work	Onsite truck	2.00	2.00	HHDT
Roadway Work	—	—	—	—
Roadway Work	Worker	36.0	14.3	LDA,LDT1,LDT2
Roadway Work	Vendor	36.0	8.80	HHDT,MHDT
Roadway Work	Hauling	0.00	20.0	HHDT
Roadway Work	Onsite truck	6.00	2.00	HHDT
Track & Signal Work	—	—	—	—
Track & Signal Work	Worker	60.0	14.3	LDA,LDT1,LDT2
Track & Signal Work	Vendor	24.0	8.80	HHDT,MHDT
Track & Signal Work	Hauling	9.00	27.0	HHDT
Track & Signal Work	Onsite truck	4.00	2.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Structures Work	0.00	0.00	12,000	4,000	24,306

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)

Site Work: Grading and Earthwork	12,783	27,225	109	1,000	—
Roadway Work	0.00	0.00	0.00	0.00	2.50
Track & Signal Work	11,690	—	3.20	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	2.40	0%
General Office Building	0.00	0%
Parking Lot	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	300	528	0.03	< 0.005
2028	300	528	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	77.9	17.7	5.60	21,529	590	134	42.4	163,084

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	12,000	4,000	24,306

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	323	0.0330	0.0040	0.00
General Office Building	163,088	323	0.0330	0.0040	253,451
Parking Lot	3,816	323	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
General Office Building	1,421,870	7,000
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Office Building	25.0	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	6.00	40.0	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.3	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A

Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	65.4
AQ-PM	16.4
AQ-DPM	62.4
Drinking Water	0.54
Lead Risk Housing	38.6
Pesticides	0.00
Toxic Releases	14.7
Traffic	80.2
Effect Indicators	—
CleanUp Sites	62.4
Groundwater	86.7
Haz Waste Facilities/Generators	52.6
Impaired Water Bodies	72.2
Solid Waste	94.1
Sensitive Population	—
Asthma	46.2
Cardio-vascular	83.6
Low Birth Weights	28.8
Socioeconomic Factor Indicators	—
Education	11.4
Housing	69.2
Linguistic	0.92
Poverty	42.6

Unemployment	64.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	55.89631721
Employed	49.83959964
Median HI	43.92403439
Education	—
Bachelor's or higher	58.65520339
High school enrollment	100
Preschool enrollment	16.54048505
Transportation	—
Auto Access	87.47593995
Active commuting	52.35467727
Social	—
2-parent households	62.5433081
Voting	80.61080457
Neighborhood	—
Alcohol availability	65.41768254
Park access	81.35506224
Retail density	75.01604004
Supermarket access	31.39997434
Tree canopy	83.53650712
Housing	—
Homeownership	54.45912999

Housing habitability	70.61465418
Low-inc homeowner severe housing cost burden	80.17451559
Low-inc renter severe housing cost burden	49.18516617
Uncrowded housing	78.31387142
Health Outcomes	—
Insured adults	54.83125882
Arthritis	38.0
Asthma ER Admissions	44.1
High Blood Pressure	70.1
Cancer (excluding skin)	27.6
Asthma	40.2
Coronary Heart Disease	57.7
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	82.1
Life Expectancy at Birth	45.6
Cognitively Disabled	62.4
Physically Disabled	24.6
Heart Attack ER Admissions	32.5
Mental Health Not Good	56.0
Chronic Kidney Disease	79.8
Obesity	54.0
Pedestrian Injuries	44.6
Physical Health Not Good	66.1
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	7.5
Current Smoker	49.4

No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	73.7
Elderly	47.3
English Speaking	70.8
Foreign-born	4.8
Outdoor Workers	85.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	78.6
Traffic Density	75.9
Traffic Access	49.4
Other Indices	—
Hardship	35.6
Other Decision Support	—
2016 Voting	75.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on applicant-provided data.
Construction: Construction Phases	Based on applicant-provided data.
Construction: Off-Road Equipment	Based on applicant-provided data.
Construction: Off-Road Equipment EF	Based on data from EPA and Port of Long Beach.
Construction: Dust From Material Movement	Based on applicant-provided data.
Construction: Demolition	Based on applicant-provided data.
Construction: Trips and VMT	Based on applicant-provided data.
Construction: Architectural Coatings	Based on applicant-provided data.
Construction: Paving	Based on applicant-provided data.
Construction: Electricity	Based on applicant-provided data.
Operations: Water and Waste Water	Outdoor water use rate based on applicant-provided data.
Operations: Solid Waste	Solid waste generation rate based on applicant-provided data.

Mitigated Max Daily

Roseville Layover - Max Daily Mit Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Roseville Layover - Max Daily Mit
Construction Start Date	8/1/2027
Operational Year	2029
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	0.60
Location	38.75695399967785, -121.27424308615056
County	Placer-Sacramento
City	Roseville
Air District	Placer County APCD
Air Basin	Sacramento Valley
TAZ	443
EDFZ	15
Electric Utility	Roseville Electric
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Other Non-Asphalt Surfaces	9.20	Acre	9.20	0.00	0.00	—	—	—
General Office Building	8.00	1000sqft	0.20	8,000	0.00	—	—	—
Parking Lot	4.00	1000sqft	0.10	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.65	8.93	47.8	197	0.39	0.96	37.3	38.2	0.96	5.35	5.45	—	42,609	42,609	2.27	1.05	8.79	42,988
Mit.	2.65	8.93	47.8	197	0.39	0.96	21.7	22.7	0.96	2.75	3.42	—	42,609	42,609	2.27	1.05	8.79	42,988
% Reduced	—	—	—	—	—	—	42%	41%	—	49%	37%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.63	4.20	7.20	23.1	0.05	0.12	41.1	41.2	0.12	6.01	6.13	—	6,953	6,953	0.19	0.49	0.17	7,103
Mit.	0.63	4.20	7.20	23.1	0.05	0.12	22.9	23.0	0.12	3.16	3.28	—	6,953	6,953	0.19	0.49	0.17	7,103

% Reduced	—	—	—	—	—	—	44%	44%	—	47%	47%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.47	1.39	9.19	34.8	0.07	0.18	10.5	10.5	0.18	1.60	1.63	—	7,855	7,855	0.41	0.24	0.90	7,937
Mit.	0.47	1.39	9.19	34.8	0.07	0.18	5.84	6.02	0.18	0.82	0.94	—	7,855	7,855	0.41	0.24	0.90	7,937
% Reduced	—	—	—	—	—	—	44%	43%	—	49%	42%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.09	0.25	1.68	6.36	0.01	0.03	1.91	1.91	0.03	0.29	0.30	—	1,301	1,301	0.07	0.04	0.15	1,314
Mit.	0.09	0.25	1.68	6.36	0.01	0.03	1.07	1.10	0.03	0.15	0.17	—	1,301	1,301	0.07	0.04	0.15	1,314
% Reduced	—	—	—	—	—	—	44%	43%	—	49%	42%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.53	0.48	6.01	19.7	0.05	0.10	34.9	35.0	0.10	5.35	5.45	—	6,086	6,086	0.17	0.43	5.96	6,223
2028	2.65	8.93	47.8	197	0.39	0.96	37.3	38.2	0.96	4.02	4.97	—	42,609	42,609	2.27	1.05	8.79	42,988
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.52	0.47	6.30	19.4	0.05	0.10	34.9	35.0	0.10	5.35	5.45	—	6,050	6,050	0.17	0.44	0.15	6,185
2028	0.63	4.20	7.20	23.1	0.05	0.12	41.1	41.2	0.12	6.01	6.13	—	6,953	6,953	0.19	0.49	0.17	7,103
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2027	0.16	0.14	1.86	5.80	0.01	0.03	10.5	10.5	0.03	1.60	1.63	—	1,813	1,813	0.05	0.13	0.77	1,855
2028	0.47	1.39	9.19	34.8	0.07	0.18	10.3	10.5	0.18	1.40	1.57	—	7,855	7,855	0.41	0.24	0.90	7,937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.03	0.03	0.34	1.06	< 0.005	0.01	1.91	1.91	0.01	0.29	0.30	—	300	300	0.01	0.02	0.13	307
2028	0.09	0.25	1.68	6.36	0.01	0.03	1.88	1.91	0.03	0.25	0.29	—	1,301	1,301	0.07	0.04	0.15	1,314

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.53	0.48	6.01	19.7	0.05	0.10	19.3	19.4	0.10	2.75	2.85	—	6,086	6,086	0.17	0.43	5.96	6,223
2028	2.65	8.93	47.8	197	0.39	0.96	21.7	22.7	0.96	2.47	3.42	—	42,609	42,609	2.27	1.05	8.79	42,988
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.52	0.47	6.30	19.4	0.05	0.10	19.3	19.4	0.10	2.75	2.85	—	6,050	6,050	0.17	0.44	0.15	6,185
2028	0.63	4.20	7.20	23.1	0.05	0.12	22.9	23.0	0.12	3.16	3.28	—	6,953	6,953	0.19	0.49	0.17	7,103
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.16	0.14	1.86	5.80	0.01	0.03	5.77	5.80	0.03	0.82	0.85	—	1,813	1,813	0.05	0.13	0.77	1,855
2028	0.47	1.39	9.19	34.8	0.07	0.18	5.84	6.02	0.18	0.77	0.94	—	7,855	7,855	0.41	0.24	0.90	7,937
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2027	0.03	0.03	0.34	1.06	< 0.005	0.01	1.05	1.06	0.01	0.15	0.16	—	300	300	0.01	0.02	0.13	307
2028	0.09	0.25	1.68	6.36	0.01	0.03	1.07	1.10	0.03	0.14	0.17	—	1,301	1,301	0.07	0.04	0.15	1,314

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.42	0.63	0.44	2.62	0.01	0.02	0.42	0.44	0.02	0.11	0.13	16.2	744	760	1.67	0.03	1.21	812
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.32	0.54	0.47	2.00	< 0.005	0.02	0.42	0.44	0.02	0.11	0.13	16.2	700	716	1.67	0.03	0.05	768
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.25	0.48	0.24	1.57	< 0.005	0.01	0.32	0.33	0.01	0.08	0.09	16.2	582	598	1.67	0.03	0.41	648
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.05	0.09	0.04	0.29	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	2.69	96.3	99.0	0.28	< 0.005	0.07	107

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Area	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8

Total	0.42	0.63	0.44	2.62	0.01	0.02	0.42	0.44	0.02	0.11	0.13	16.2	744	760	1.67	0.03	1.21	812
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Area	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.32	0.54	0.47	2.00	< 0.005	0.02	0.42	0.44	0.02	0.11	0.13	16.2	700	716	1.67	0.03	0.05	768
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.20	0.16	1.34	< 0.005	< 0.005	0.32	0.32	< 0.005	0.08	0.08	—	347	347	0.01	0.02	0.39	353
Area	0.03	0.27	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.71
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.55	0.55	< 0.005	< 0.005	0.00	0.55
Total	0.25	0.48	0.24	1.57	< 0.005	0.01	0.32	0.33	0.01	0.08	0.09	16.2	582	598	1.67	0.03	0.41	648
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5
Area	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.9	37.9	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59

Waste	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	0.05	0.09	0.04	0.29	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	2.69	96.3	99.0	0.28	< 0.005	0.07	107

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Area	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.42	0.63	0.44	2.62	0.01	0.02	0.42	0.44	0.02	0.11	0.13	16.2	744	760	1.67	0.03	1.21	812
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Area	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2

Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.32	0.54	0.47	2.00	< 0.005	0.02	0.42	0.44	0.02	0.11	0.13	16.2	700	716	1.67	0.03	0.05	768
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.21	0.20	0.16	1.34	< 0.005	< 0.005	0.32	0.32	< 0.005	0.08	0.08	—	347	347	0.01	0.02	0.39	353
Area	0.03	0.27	< 0.005	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.71	0.71	< 0.005	< 0.005	—	0.71
Energy	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	229	229	0.02	< 0.005	—	230
Water	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Waste	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Stationary	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.55	0.55	< 0.005	< 0.005	0.00	0.55
Total	0.25	0.48	0.24	1.57	< 0.005	0.01	0.32	0.33	0.01	0.08	0.09	16.2	582	598	1.67	0.03	0.41	648
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5
Area	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.9	37.9	< 0.005	< 0.005	—	38.1
Water	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Waste	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Stationary	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	0.05	0.09	0.04	0.29	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	2.69	96.3	99.0	0.28	< 0.005	0.07	107

3. Construction Emissions Details

3.1. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	2.49	17.5	0.03	0.06	—	0.06	0.06	—	0.06	—	3,197	3,197	0.13	0.03	—	3,208
Dust From Material Movement	—	—	—	—	—	—	4.45	4.45	—	2.14	2.14	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.23	0.10	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.3	85.3	< 0.005	0.01	0.13	89.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	2.49	17.5	0.03	0.06	—	0.06	0.06	—	0.06	—	3,197	3,197	0.13	0.03	—	3,208
Dust From Material Movement	—	—	—	—	—	—	4.45	4.45	—	2.14	2.14	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	85.6	85.6	< 0.005	0.01	< 0.005	89.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	0.74	5.23	0.01	0.02	—	0.02	0.02	—	0.02	—	957	957	0.04	0.01	—	960

Dust From Material Movement	—	—	—	—	—	—	1.33	1.33	—	0.64	0.64	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	8.80	8.80	< 0.005	0.88	0.88	—	25.6	25.6	< 0.005	< 0.005	0.02	26.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	158	158	0.01	< 0.005	—	159
Dust From Material Movement	—	—	—	—	—	—	0.24	0.24	—	0.12	0.12	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	1.61	1.61	< 0.005	0.16	0.16	—	4.24	4.24	< 0.005	< 0.005	< 0.005	4.44
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.06	1.39	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	322	322	< 0.005	< 0.005	0.97	324
Vendor	0.03	0.02	0.82	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	656	656	0.01	0.10	1.44	687
Hauling	0.08	0.05	2.42	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,824	1,824	0.03	0.29	3.42	1,914
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.00	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	285	285	0.01	0.01	0.03	288
Vendor	0.03	0.02	0.88	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	657	657	0.01	0.10	0.04	686
Hauling	0.07	0.04	2.61	0.54	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,825	1,825	0.03	0.29	0.09	1,912

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.6	87.6	< 0.005	< 0.005	0.12	88.7
Vendor	0.01	0.01	0.26	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	197	197	< 0.005	0.03	0.19	205
Hauling	0.02	0.01	0.76	0.16	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	546	546	0.01	0.09	0.44	573
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.03	34.0
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	0.07	94.8

3.2. Grading (2027) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	2.49	17.5	0.03	0.06	—	0.06	0.06	—	0.06	—	3,197	3,197	0.13	0.03	—	3,208
Dust From Material Movement	—	—	—	—	—	—	1.73	1.73	—	0.84	0.84	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.23	0.10	< 0.005	< 0.005	16.5	16.5	< 0.005	1.64	1.65	—	85.3	85.3	< 0.005	0.01	0.13	89.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	2.49	17.5	0.03	0.06	—	0.06	0.06	—	0.06	—	3,197	3,197	0.13	0.03	—	3,208

Dust From Material Movement	—	—	—	—	—	—	1.73	1.73	—	0.84	0.84	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	16.5	16.5	< 0.005	1.64	1.65	—	85.6	85.6	< 0.005	0.01	< 0.005	89.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.09	0.74	5.23	0.01	0.02	—	0.02	0.02	—	0.02	—	957	957	0.04	0.01	—	960
Dust From Material Movement	—	—	—	—	—	—	0.52	0.52	—	0.25	0.25	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	4.93	4.93	< 0.005	0.49	0.49	—	25.6	25.6	< 0.005	< 0.005	0.02	26.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	158	158	0.01	< 0.005	—	159
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.05	0.05	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.90	0.90	< 0.005	0.09	0.09	—	4.24	4.24	< 0.005	< 0.005	< 0.005	4.44
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.10	0.09	0.06	1.39	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	322	322	< 0.005	< 0.005	0.97	324
Vendor	0.03	0.02	0.82	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	656	656	0.01	0.10	1.44	687
Hauling	0.08	0.05	2.42	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,824	1,824	0.03	0.29	3.42	1,914
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.08	1.00	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	285	285	0.01	0.01	0.03	288
Vendor	0.03	0.02	0.88	0.23	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	657	657	0.01	0.10	0.04	686
Hauling	0.07	0.04	2.61	0.54	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,825	1,825	0.03	0.29	0.09	1,912
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.31	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	87.6	87.6	< 0.005	< 0.005	0.12	88.7
Vendor	0.01	0.01	0.26	0.07	< 0.005	< 0.005	0.05	0.06	< 0.005	0.01	0.02	—	197	197	< 0.005	0.03	0.19	205
Hauling	0.02	0.01	0.76	0.16	< 0.005	0.01	0.14	0.15	0.01	0.04	0.05	—	546	546	0.01	0.09	0.44	573
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	0.02	14.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.5	32.5	< 0.005	< 0.005	0.03	34.0
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	90.4	90.4	< 0.005	0.01	0.07	94.8

3.3. Grading (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.32	0.32	2.49	17.5	0.03	0.06	—	0.06	0.06	—	0.06	—	3,196	3,196	0.13	0.03	—	3,207
Dust From Material Movement	—	—	—	—	—	—	4.45	4.45	—	2.14	2.14	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	29.4	29.4	< 0.005	2.93	2.94	—	83.5	83.5	< 0.005	0.01	< 0.005	87.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	0.44	3.08	0.01	0.01	—	0.01	0.01	—	0.01	—	563	563	0.02	< 0.005	—	565
Dust From Material Movement	—	—	—	—	—	—	0.78	0.78	—	0.38	0.38	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.18	5.18	< 0.005	0.52	0.52	—	14.7	14.7	< 0.005	< 0.005	0.01	15.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.56	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	93.2	93.2	< 0.005	< 0.005	—	93.5
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.07	0.07	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.94	0.94	< 0.005	0.09	0.09	—	2.43	2.43	< 0.005	< 0.005	< 0.005	2.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.95	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	279	279	0.01	0.01	0.02	282
Vendor	0.03	0.02	0.84	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	640	640	0.01	0.10	0.03	669
Hauling	0.07	0.04	2.51	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,777	1,777	0.03	0.28	0.08	1,860
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.5	50.5	< 0.005	< 0.005	0.07	50.6
Vendor	< 0.005	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.09	118
Hauling	0.01	0.01	0.43	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	313	313	< 0.005	0.05	0.24	328
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.35	8.35	< 0.005	< 0.005	0.01	8.39
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.5
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.8	51.8	< 0.005	0.01	0.04	54.3

3.4. Grading (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.32	2.49	17.5	0.03	0.06	—	0.06	0.06	—	0.06	—	3,196	3,196	0.13	0.03	—	3,207

Dust From Material Movement	—	—	—	—	—	—	1.73	1.73	—	0.84	0.84	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.13	0.13	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.24	0.11	< 0.005	< 0.005	16.5	16.5	< 0.005	1.64	1.65	—	83.5	83.5	< 0.005	0.01	< 0.005	87.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	0.44	3.08	0.01	0.01	—	0.01	0.01	—	0.01	—	563	563	0.02	< 0.005	—	565
Dust From Material Movement	—	—	—	—	—	—	0.31	0.31	—	0.15	0.15	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	2.90	2.90	< 0.005	0.29	0.29	—	14.7	14.7	< 0.005	< 0.005	0.01	15.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.56	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	93.2	93.2	< 0.005	< 0.005	—	93.5
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—	—
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.53	0.53	< 0.005	0.05	0.05	—	2.43	2.43	< 0.005	< 0.005	< 0.005	2.55
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.95	0.00	0.00	0.30	0.30	0.00	0.07	0.07	—	279	279	0.01	0.01	0.02	282
Vendor	0.03	0.02	0.84	0.22	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	640	640	0.01	0.10	0.03	669
Hauling	0.07	0.04	2.51	0.53	0.01	0.03	0.47	0.51	0.03	0.13	0.16	—	1,777	1,777	0.03	0.28	0.08	1,860
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	50.5	50.5	< 0.005	< 0.005	0.07	50.6
Vendor	< 0.005	< 0.005	0.14	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	113	113	< 0.005	0.02	0.09	118
Hauling	0.01	0.01	0.43	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	313	313	< 0.005	0.05	0.24	328
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.35	8.35	< 0.005	< 0.005	0.01	8.39
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.02	19.5
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.8	51.8	< 0.005	0.01	0.04	54.3

3.5. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.54	2.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	417	417	0.02	< 0.005	—	418
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.54	2.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	417	417	0.02	< 0.005	—	418
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	5.88	5.88	< 0.005	0.59	0.59	—	16.7	16.7	< 0.005	< 0.005	< 0.005	17.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	50.3	50.3	< 0.005	< 0.005	—	50.4
Architectural Coatings	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.71	0.71	< 0.005	0.07	0.07	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.32	8.32	< 0.005	< 0.005	—	8.35
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.13	0.13	< 0.005	0.01	0.01	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	< 0.005	0.68	254
Vendor	0.01	0.01	0.39	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.62	335
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.76	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	223	223	< 0.005	0.01	0.02	226
Vendor	0.01	0.01	0.42	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.02	334
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	27.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.5	38.5	< 0.005	0.01	0.03	40.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.38	6.38	< 0.005	< 0.005	0.01	6.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Building Construction (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.54	2.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	417	417	0.02	< 0.005	—	418
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	3.29	3.29	< 0.005	0.33	0.33	—	16.6	16.6	< 0.005	< 0.005	0.02	17.5

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.54	2.94	< 0.005	0.01	—	0.01	0.01	—	0.01	—	417	417	0.02	< 0.005	—	418
Architectural Coatings	—	3.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	3.29	3.29	< 0.005	0.33	0.33	—	16.7	16.7	< 0.005	< 0.005	< 0.005	17.5
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	50.3	50.3	< 0.005	< 0.005	—	50.4
Architectural Coatings	—	0.44	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.40	0.40	< 0.005	0.04	0.04	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.32	8.32	< 0.005	< 0.005	—	8.35
Architectural Coatings	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	0.33	0.33	< 0.005	< 0.005	< 0.005	0.35
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.04	1.05	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	252	252	< 0.005	< 0.005	0.68	254
Vendor	0.01	0.01	0.39	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.62	335
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.76	0.00	0.00	0.24	0.24	0.00	0.06	0.06	—	223	223	< 0.005	0.01	0.02	226
Vendor	0.01	0.01	0.42	0.11	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	320	320	< 0.005	0.05	0.02	334
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.04	27.7
Vendor	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.5	38.5	< 0.005	0.01	0.03	40.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.57	4.57	< 0.005	< 0.005	0.01	4.59
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.38	6.38	< 0.005	< 0.005	0.01	6.68
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.52	2.70	29.6	0.05	0.10	—	0.10	0.10	—	0.10	—	5,475	5,475	0.22	0.04	—	5,494
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	17.6	17.6	< 0.005	1.76	1.76	—	49.9	49.9	< 0.005	0.01	0.07	52.4

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.16	1.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	330	330	0.01	< 0.005	—	331
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	1.06	1.06	< 0.005	0.11	0.11	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.03	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	54.6	54.6	< 0.005	< 0.005	—	54.8
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.19	0.19	< 0.005	0.02	0.02	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.52
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.07	1.58	0.00	0.00	0.36	0.36	0.00	0.09	0.09	—	379	379	< 0.005	< 0.005	1.03	381
Vendor	0.04	0.03	1.17	0.32	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	959	959	0.01	0.15	1.87	1,004
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.7	20.7	< 0.005	< 0.005	0.03	20.8
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.8	57.8	< 0.005	0.01	0.05	60.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.43	3.43	< 0.005	< 0.005	< 0.005	3.44
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.57	9.57	< 0.005	< 0.005	0.01	10.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Paving (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.52	2.70	29.6	0.05	0.10	—	0.10	0.10	—	0.10	—	5,475	5,475	0.22	0.04	—	5,494
Paving	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.13	0.06	< 0.005	< 0.005	9.88	9.88	< 0.005	0.99	0.99	—	49.9	49.9	< 0.005	0.01	0.07	52.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.16	1.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	330	330	0.01	< 0.005	—	331
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.60	0.60	< 0.005	0.06	0.06	—	3.01	3.01	< 0.005	< 0.005	< 0.005	3.16
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.03	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	54.6	54.6	< 0.005	< 0.005	—	54.8
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	0.50	0.50	< 0.005	< 0.005	< 0.005	0.52
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.07	1.58	0.00	0.00	0.36	0.36	0.00	0.09	0.09	—	379	379	< 0.005	< 0.005	1.03	381
Vendor	0.04	0.03	1.17	0.32	0.01	0.01	0.27	0.28	0.01	0.07	0.09	—	959	959	0.01	0.15	1.87	1,004
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	20.7	20.7	< 0.005	< 0.005	0.03	20.8
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.8	57.8	< 0.005	0.01	0.05	60.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.43	3.43	< 0.005	< 0.005	< 0.005	3.44
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.57	9.57	< 0.005	< 0.005	0.01	10.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Trenching (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.56	4.30	40.7	158	0.32	0.80	—	0.80	0.80	—	0.80	—	32,601	32,601	1.98	0.56	—	32,817
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	11.8	11.8	< 0.005	1.17	1.17	—	33.3	33.3	< 0.005	0.01	0.05	34.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.78	7.36	28.7	0.06	0.14	—	0.14	0.14	—	0.14	—	5,895	5,895	0.36	0.10	—	5,934
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	2.13	2.13	< 0.005	0.21	0.21	—	6.03	6.03	< 0.005	< 0.005	< 0.005	6.32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.14	1.34	5.23	0.01	0.03	—	0.03	0.03	—	0.03	—	976	976	0.06	0.02	—	982
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.64	0.00	0.00	0.61	0.61	0.00	0.14	0.14	—	631	631	0.01	< 0.005	1.71	634

Vendor	0.03	0.02	0.78	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	639	639	0.01	0.10	1.25	670
Hauling	0.03	0.02	1.00	0.18	0.01	0.02	0.23	0.24	0.02	0.06	0.08	—	835	835	0.01	0.13	1.49	876
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.35	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.13	104
Vendor	< 0.005	< 0.005	0.15	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	116	116	< 0.005	0.02	0.10	121
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	< 0.005	0.02	0.12	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.02	17.2
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.1	19.1	< 0.005	< 0.005	0.02	20.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.0	25.0	< 0.005	< 0.005	0.02	26.2

3.10. Trenching (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	4.30	40.7	158	0.32	0.80	—	0.80	0.80	—	0.80	—	32,601	32,601	1.98	0.56	—	32,817
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.09	0.04	< 0.005	< 0.005	6.58	6.59	< 0.005	0.66	0.66	—	33.3	33.3	< 0.005	0.01	0.05	34.9

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.78	7.36	28.7	0.06	0.14	—	0.14	0.14	—	0.14	—	5,895	5,895	0.36	0.10	—	5,934
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	1.19	1.19	< 0.005	0.12	0.12	—	6.03	6.03	< 0.005	< 0.005	< 0.005	6.32
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.14	1.34	5.23	0.01	0.03	—	0.03	0.03	—	0.03	—	976	976	0.06	0.02	—	982
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.22	0.22	< 0.005	0.02	0.02	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.05
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.11	2.64	0.00	0.00	0.61	0.61	0.00	0.14	0.14	—	631	631	0.01	< 0.005	1.71	634
Vendor	0.03	0.02	0.78	0.21	< 0.005	0.01	0.18	0.19	0.01	0.05	0.06	—	639	639	0.01	0.10	1.25	670
Hauling	0.03	0.02	1.00	0.18	0.01	0.02	0.23	0.24	0.02	0.06	0.08	—	835	835	0.01	0.13	1.49	876
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.03	0.02	0.35	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	104	104	< 0.005	< 0.005	0.13	104
Vendor	< 0.005	< 0.005	0.15	0.04	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	116	116	< 0.005	0.02	0.10	121
Hauling	0.01	< 0.005	0.19	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	151	151	< 0.005	0.02	0.12	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.02	17.2
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	19.1	19.1	< 0.005	< 0.005	0.02	20.0
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.0	25.0	< 0.005	< 0.005	0.02	26.2

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500

Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.31	0.29	0.20	2.09	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	492	492	0.02	0.02	1.19	500
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.28	0.26	0.23	1.81	< 0.005	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	450	450	0.02	0.02	0.03	458
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.04	0.04	0.03	0.24	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.02	—	57.5	57.5	< 0.005	< 0.005	0.06	58.5

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	23.9	23.9	< 0.005	< 0.005	—	24.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.56	0.56	< 0.005	< 0.005	—	0.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	24.5	24.5	< 0.005	< 0.005	—	24.6

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	144	144	0.01	< 0.005	—	145
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	3.38	3.38	< 0.005	< 0.005	—	3.40
Total	—	—	—	—	—	—	—	—	—	—	—	—	148	148	0.02	< 0.005	—	149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	23.9	23.9	< 0.005	< 0.005	—	24.1
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	0.56	0.56	< 0.005	< 0.005	—	0.56
Total	—	—	—	—	—	—	—	—	—	—	—	—	24.5	24.5	< 0.005	< 0.005	—	24.6

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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

Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Parking Lot	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
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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

General Office Building	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Parking Lot	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
Total	0.01	< 0.005	0.07	0.06	< 0.005	0.01	—	0.01	0.01	—	0.01	—	81.2	81.2	0.01	< 0.005	—	81.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
General Office Building	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5
Parking Lot	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
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.4	13.4	< 0.005	< 0.005	—	13.5

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.06	0.06	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12

4.3.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.06	0.06	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Total	0.06	0.30	< 0.005	0.35	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.43	1.43	< 0.005	< 0.005	—	1.44
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.01	0.01	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12
Total	0.01	0.05	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.12	0.12	< 0.005	< 0.005	—	0.12

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59

4.4.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	2.72	3.95	6.68	0.28	0.01	—	15.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.45	0.65	1.11	0.05	< 0.005	—	2.59

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82

4.5.1. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2

Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	13.5	0.00	13.5	1.35	0.00	—	47.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
General Office Building	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	2.23	0.00	2.23	0.22	0.00	—	7.82

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.02	0.02
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency Generato	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Total	0.04	0.03	0.17	0.13	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	16.8	16.8	< 0.005	< 0.005	0.00	16.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	0.09	0.09	< 0.005	< 0.005	0.00	0.09

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Work: Grading and Earthwork	Grading	8/1/2027	3/30/2028	5.00	174	—

Structures Work	Building Construction	3/1/2028	5/1/2028	5.00	44.0	—
Roadway Work	Paving	5/1/2028	5/30/2028	5.00	22.0	—
Track & Signal Work	Trenching	5/1/2028	7/31/2028	5.00	66.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	5.00	275	0.38
Site Work: Grading and Earthwork	Graders	Diesel	Tier 4 Final	1.00	5.00	190	0.41
Site Work: Grading and Earthwork	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	5.00	250	0.40
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	5.00	160	0.43
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	5.00	50.0	0.42
Site Work: Grading and Earthwork	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	6.00	86.0	0.37
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	6.00	275	0.38
Site Work: Grading and Earthwork	Welders	Diesel	Tier 4 Final	1.00	3.00	46.0	0.45
Structures Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	6.00	80.0	0.42
Structures Work	Welders	Diesel	Tier 4 Final	1.00	3.00	46.0	0.45
Structures Work	Rough Terrain Forklifts	Diesel	Tier 4 Final	1.00	3.00	75.0	0.40
Roadway Work	Graders	Diesel	Tier 4 Final	1.00	8.00	190	0.41
Roadway Work	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	250	0.40
Roadway Work	Excavators	Diesel	Tier 4 Final	1.00	8.00	275	0.38

Roadway Work	Paving Equipment	Diesel	Tier 4 Final	1.00	6.00	630	0.36
Roadway Work	Pavers	Diesel	Tier 4 Final	1.00	8.00	170	0.42
Roadway Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	150	0.43
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	250	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	350	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	160	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	300	0.45
Track & Signal Work	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	4.00	250	0.36
Track & Signal Work	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	4.00	86.0	0.37
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	4.00	4,400	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	6.00	6.00	75.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	4.00	6.00	200	0.42
Track & Signal Work	Cranes	Diesel	Tier 4 Final	4.00	6.00	130	0.29
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	4.00	6.00	10.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	350	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	160	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	84.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	225	0.42

Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	8.00	6.00	100	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	8.00	6.00	75.0	0.42

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	5.00	275	0.38
Site Work: Grading and Earthwork	Graders	Diesel	Tier 4 Final	1.00	5.00	190	0.41
Site Work: Grading and Earthwork	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	5.00	250	0.40
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	5.00	160	0.43
Site Work: Grading and Earthwork	Other Construction Equipment	Diesel	Tier 4 Final	1.00	5.00	50.0	0.42
Site Work: Grading and Earthwork	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	6.00	86.0	0.37
Site Work: Grading and Earthwork	Excavators	Diesel	Tier 4 Final	1.00	6.00	275	0.38
Site Work: Grading and Earthwork	Welders	Diesel	Tier 4 Final	1.00	3.00	46.0	0.45
Structures Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	6.00	80.0	0.42
Structures Work	Welders	Diesel	Tier 4 Final	1.00	3.00	46.0	0.45
Structures Work	Rough Terrain Forklifts	Diesel	Tier 4 Final	1.00	3.00	75.0	0.40
Roadway Work	Graders	Diesel	Tier 4 Final	1.00	8.00	190	0.41
Roadway Work	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	250	0.40
Roadway Work	Excavators	Diesel	Tier 4 Final	1.00	8.00	275	0.38
Roadway Work	Paving Equipment	Diesel	Tier 4 Final	1.00	6.00	630	0.36

Roadway Work	Pavers	Diesel	Tier 4 Final	1.00	8.00	170	0.42
Roadway Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	150	0.43
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	250	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	350	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	160	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	1.00	4.00	300	0.45
Track & Signal Work	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	4.00	250	0.36
Track & Signal Work	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	4.00	86.0	0.37
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	4.00	4,400	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	6.00	6.00	75.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	4.00	6.00	200	0.42
Track & Signal Work	Cranes	Diesel	Tier 4 Final	4.00	6.00	130	0.29
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	4.00	6.00	10.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	350	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	160	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	84.0	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	2.00	6.00	225	0.42
Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	8.00	6.00	100	0.42

Track & Signal Work	Other Construction Equipment	Diesel	Tier 4 Final	8.00	6.00	75.0	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Work: Grading and Earthwork	—	—	—	—
Site Work: Grading and Earthwork	Worker	30.0	14.3	LDA,LDT1,LDT2
Site Work: Grading and Earthwork	Vendor	24.0	8.80	HHDT,MHDT
Site Work: Grading and Earthwork	Hauling	34.0	15.0	HHDT
Site Work: Grading and Earthwork	Onsite truck	10.0	2.00	HHDT
Structures Work	—	—	—	—
Structures Work	Worker	24.0	14.3	LDA,LDT1,LDT2
Structures Work	Vendor	12.0	8.80	HHDT,MHDT
Structures Work	Hauling	0.00	20.0	HHDT
Structures Work	Onsite truck	2.00	2.00	HHDT
Roadway Work	—	—	—	—
Roadway Work	Worker	36.0	14.3	LDA,LDT1,LDT2
Roadway Work	Vendor	36.0	8.80	HHDT,MHDT
Roadway Work	Hauling	0.00	20.0	HHDT
Roadway Work	Onsite truck	6.00	2.00	HHDT
Track & Signal Work	—	—	—	—
Track & Signal Work	Worker	60.0	14.3	LDA,LDT1,LDT2
Track & Signal Work	Vendor	24.0	8.80	HHDT,MHDT
Track & Signal Work	Hauling	9.00	27.0	HHDT
Track & Signal Work	Onsite truck	4.00	2.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Work: Grading and Earthwork	—	—	—	—
Site Work: Grading and Earthwork	Worker	30.0	14.3	LDA,LDT1,LDT2
Site Work: Grading and Earthwork	Vendor	24.0	8.80	HHDT,MHDT
Site Work: Grading and Earthwork	Hauling	34.0	15.0	HHDT
Site Work: Grading and Earthwork	Onsite truck	10.0	2.00	HHDT
Structures Work	—	—	—	—
Structures Work	Worker	24.0	14.3	LDA,LDT1,LDT2
Structures Work	Vendor	12.0	8.80	HHDT,MHDT
Structures Work	Hauling	0.00	20.0	HHDT
Structures Work	Onsite truck	2.00	2.00	HHDT
Roadway Work	—	—	—	—
Roadway Work	Worker	36.0	14.3	LDA,LDT1,LDT2
Roadway Work	Vendor	36.0	8.80	HHDT,MHDT
Roadway Work	Hauling	0.00	20.0	HHDT
Roadway Work	Onsite truck	6.00	2.00	HHDT
Track & Signal Work	—	—	—	—
Track & Signal Work	Worker	60.0	14.3	LDA,LDT1,LDT2
Track & Signal Work	Vendor	24.0	8.80	HHDT,MHDT
Track & Signal Work	Hauling	9.00	27.0	HHDT
Track & Signal Work	Onsite truck	4.00	2.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Structures Work	0.00	0.00	12,000	4,000	24,306

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Site Work: Grading and Earthwork	12,783	27,225	109	1,000	—
Roadway Work	0.00	0.00	0.00	0.00	2.50
Track & Signal Work	11,690	—	3.20	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	2.40	0%
General Office Building	0.00	0%
Parking Lot	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O

2027	300	528	0.03	< 0.005
2028	300	528	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	77.9	17.7	5.60	21,529	590	134	42.4	163,084
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	77.9	17.7	5.60	21,529	590	134	42.4	163,084
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	12,000	4,000	24,306

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	323	0.0330	0.0040	0.00
General Office Building	163,088	323	0.0330	0.0040	253,451
Parking Lot	3,816	323	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	323	0.0330	0.0040	0.00

General Office Building	163,088	323	0.0330	0.0040	253,451
Parking Lot	3,816	323	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
General Office Building	1,421,870	7,000
Parking Lot	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
General Office Building	1,421,870	7,000
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Office Building	25.0	—
Parking Lot	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
General Office Building	25.0	—
Parking Lot	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.50	6.00	40.0	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.3	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2

Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	65.4
AQ-PM	16.4
AQ-DPM	62.4
Drinking Water	0.54
Lead Risk Housing	38.6
Pesticides	0.00
Toxic Releases	14.7
Traffic	80.2
Effect Indicators	—
CleanUp Sites	62.4
Groundwater	86.7
Haz Waste Facilities/Generators	52.6

Impaired Water Bodies	72.2
Solid Waste	94.1
Sensitive Population	—
Asthma	46.2
Cardio-vascular	83.6
Low Birth Weights	28.8
Socioeconomic Factor Indicators	—
Education	11.4
Housing	69.2
Linguistic	0.92
Poverty	42.6
Unemployment	64.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	55.89631721
Employed	49.83959964
Median HI	43.92403439
Education	—
Bachelor's or higher	58.65520339
High school enrollment	100
Preschool enrollment	16.54048505
Transportation	—
Auto Access	87.47593995
Active commuting	52.35467727

Social	—
2-parent households	62.5433081
Voting	80.61080457
Neighborhood	—
Alcohol availability	65.41768254
Park access	81.35506224
Retail density	75.01604004
Supermarket access	31.39997434
Tree canopy	83.53650712
Housing	—
Homeownership	54.45912999
Housing habitability	70.61465418
Low-inc homeowner severe housing cost burden	80.17451559
Low-inc renter severe housing cost burden	49.18516617
Uncrowded housing	78.31387142
Health Outcomes	—
Insured adults	54.83125882
Arthritis	38.0
Asthma ER Admissions	44.1
High Blood Pressure	70.1
Cancer (excluding skin)	27.6
Asthma	40.2
Coronary Heart Disease	57.7
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	82.1
Life Expectancy at Birth	45.6
Cognitively Disabled	62.4

Physically Disabled	24.6
Heart Attack ER Admissions	32.5
Mental Health Not Good	56.0
Chronic Kidney Disease	79.8
Obesity	54.0
Pedestrian Injuries	44.6
Physical Health Not Good	66.1
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	7.5
Current Smoker	49.4
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	73.7
Elderly	47.3
English Speaking	70.8
Foreign-born	4.8
Outdoor Workers	85.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	78.6
Traffic Density	75.9
Traffic Access	49.4
Other Indices	—
Hardship	35.6
Other Decision Support	—

2016 Voting	75.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Based on applicant-provided data.
Construction: Construction Phases	Based on applicant-provided data.
Construction: Off-Road Equipment	Based on applicant-provided data.
Construction: Off-Road Equipment EF	Based on data from EPA and Port of Long Beach.
Construction: Dust From Material Movement	Based on applicant-provided data.
Construction: Demolition	Based on applicant-provided data.

Construction: Trips and VMT	Based on applicant-provided data.
Construction: Architectural Coatings	Based on applicant-provided data.
Construction: Paving	Based on applicant-provided data.
Construction: Electricity	Based on applicant-provided data.
Operations: Water and Waste Water	Outdoor water use rate based on applicant-provided data.
Operations: Solid Waste	Solid waste generation rate based on applicant-provided data.

Roseville Layover Off-Site Locomotive - Construction Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Roseville Layover Off-Site Locomotive - Construction
Construction Start Date	8/1/2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	0.60
Location	38.75690813656374, -121.27417374770475
County	Placer-Sacramento
City	Roseville
Air District	Placer County APCD
Air Basin	Sacramento Valley
TAZ	443
EDFZ	15
Electric Utility	Roseville Electric
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Office Building	8.00	1000sqft	0.20	8,000	0.00	—	—	—

Other Non-Asphalt Surfaces	9.20	Acre	9.20	9.50	0.00	—	—	—
Parking Lot	4.00	1000sqft	0.10	0.10	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	22.3	367	149	0.41	6.52	0.00	6.52	6.36	0.00	6.36	—	39,845	39,845	3.26	1.06	0.00	40,242
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.24	4.02	1.63	< 0.005	0.07	0.00	0.07	0.07	0.00	0.07	—	437	437	0.04	0.01	0.00	441
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.04	0.73	0.30	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	72.3	72.3	0.01	< 0.005	0.00	73.0

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2028	0.00	22.3	367	149	0.41	6.52	0.00	6.52	6.36	0.00	6.36	—	39,845	39,845	3.26	1.06	0.00	40,242
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	0.24	4.02	1.63	< 0.005	0.07	0.00	0.07	0.07	0.00	0.07	—	437	437	0.04	0.01	0.00	441
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	0.04	0.73	0.30	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	72.3	72.3	0.01	< 0.005	0.00	73.0

3. Construction Emissions Details

3.1. Trenching (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	22.3	367	149	0.41	6.52	—	6.52	6.36	—	6.36	—	39,845	39,845	3.26	1.06	—	40,242
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.24	4.02	1.63	< 0.005	0.07	—	0.07	0.07	—	0.07	—	437	437	0.04	0.01	—	441
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.04	0.73	0.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	72.3	72.3	0.01	< 0.005	—	73.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Track & Signal Work	Trenching	5/1/2028	5/4/2028	5.00	4.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	10.0	4,400	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Track & Signal Work	—	—	—	—
Track & Signal Work	Worker	0.00	14.3	LDA,LDT1,LDT2
Track & Signal Work	Vendor	0.00	8.80	HHDT,MHDT
Track & Signal Work	Hauling	0.00	20.0	HHDT
Track & Signal Work	Onsite truck	0.00	2.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Office Building	0.00	0%
Other Non-Asphalt Surfaces	2.00	0%
Parking Lot	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	0.00	0.00	0.00

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.3	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	2	1	1	3

Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	65.4
AQ-PM	16.4
AQ-DPM	62.4
Drinking Water	0.54
Lead Risk Housing	38.6
Pesticides	0.00
Toxic Releases	14.7
Traffic	80.2
Effect Indicators	—

CleanUp Sites	62.4
Groundwater	86.7
Haz Waste Facilities/Generators	52.6
Impaired Water Bodies	72.2
Solid Waste	94.1
Sensitive Population	—
Asthma	46.2
Cardio-vascular	83.6
Low Birth Weights	28.8
Socioeconomic Factor Indicators	—
Education	11.4
Housing	69.2
Linguistic	0.92
Poverty	42.6
Unemployment	64.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	55.89631721
Employed	49.83959964
Median HI	43.92403439
Education	—
Bachelor's or higher	58.65520339
High school enrollment	100
Preschool enrollment	16.54048505

Transportation	—
Auto Access	87.47593995
Active commuting	52.35467727
Social	—
2-parent households	62.5433081
Voting	80.61080457
Neighborhood	—
Alcohol availability	65.41768254
Park access	81.35506224
Retail density	75.01604004
Supermarket access	31.39997434
Tree canopy	83.53650712
Housing	—
Homeownership	54.45912999
Housing habitability	70.61465418
Low-inc homeowner severe housing cost burden	80.17451559
Low-inc renter severe housing cost burden	49.18516617
Uncrowded housing	78.31387142
Health Outcomes	—
Insured adults	54.83125882
Arthritis	38.0
Asthma ER Admissions	44.1
High Blood Pressure	70.1
Cancer (excluding skin)	27.6
Asthma	40.2
Coronary Heart Disease	57.7
Chronic Obstructive Pulmonary Disease	47.8

Diagnosed Diabetes	82.1
Life Expectancy at Birth	45.6
Cognitively Disabled	62.4
Physically Disabled	24.6
Heart Attack ER Admissions	32.5
Mental Health Not Good	56.0
Chronic Kidney Disease	79.8
Obesity	54.0
Pedestrian Injuries	44.6
Physical Health Not Good	66.1
Stroke	70.4
Health Risk Behaviors	—
Binge Drinking	7.5
Current Smoker	49.4
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	73.7
Elderly	47.3
English Speaking	70.8
Foreign-born	4.8
Outdoor Workers	85.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	78.6
Traffic Density	75.9
Traffic Access	49.4

Other Indices	—
Hardship	35.6
Other Decision Support	—
2016 Voting	75.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction schedule provided by project applicant. Run only includes off-site locomotive operation.
Construction: Off-Road Equipment	Construction equipment list provided by project applicant.
Land Use	Based on applicant-provided data.

Operations: Water and Waste Water	Based on applicant-provided data.
Operations: Solid Waste	Based on applicant-provided data.
Operations: Energy Use	Based on applicant-provided data.
Construction: Demolition	Based on applicant-provided data.
Construction: Trips and VMT	Run only includes off-site locomotive operation.
Construction: Electricity	Run only includes off-site locomotive operation.
Construction: Dust From Material Movement	Run only includes off-site locomotive operation.
Construction: Architectural Coatings	Based on applicant-provided data.
Construction: Paving	Based on applicant-provided data.
Construction: Off-Road Equipment EF	Per EPA Line-Haul emission factors for Tier 3 locomotive.
Construction: On-Road Fugitive Dust	Run only includes off-site locomotive operation.

Roseville Layover Off-Site Locomotive - Construction Mitigated Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Roseville Layover Off-Site Locomotive - Construction Mitigated
Construction Start Date	8/1/2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	0.60
Location	38.75690813656374, -121.27417374770475
County	Placer-Sacramento
City	Roseville
Air District	Placer County APCD
Air Basin	Sacramento Valley
TAZ	443
EDFZ	15
Electric Utility	Roseville Electric
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.14

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Office Building	8.00	1000sqft	0.20	8,000	0.00	—	—	—

Other Non-Asphalt Surfaces	9.20	Acre	9.20	9.50	0.00	—	—	—
Parking Lot	4.00	1000sqft	0.10	0.10	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	6.84	81.5	149	0.41	1.22	0.00	1.22	1.22	0.00	1.22	—	39,845	39,845	3.26	1.06	0.00	40,242
Mit.	0.00	6.84	81.5	149	0.41	1.22	0.00	1.22	1.22	0.00	1.22	—	39,845	39,845	3.26	1.06	0.00	40,242
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.08	0.89	1.63	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	437	437	0.04	0.01	0.00	441
Mit.	0.00	0.08	0.89	1.63	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	437	437	0.04	0.01	0.00	441
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.01	0.16	0.30	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	—	72.3	72.3	0.01	< 0.005	0.00	73.0
Mit.	0.00	0.01	0.16	0.30	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	—	72.3	72.3	0.01	< 0.005	0.00	73.0
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	6.84	81.5	149	0.41	1.22	0.00	1.22	1.22	0.00	1.22	—	39,845	39,845	3.26	1.06	0.00	40,242
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	0.08	0.89	1.63	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	437	437	0.04	0.01	0.00	441
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	0.01	0.16	0.30	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	—	72.3	72.3	0.01	< 0.005	0.00	73.0

2.3. Construction Emissions by Year, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	6.84	81.5	149	0.41	1.22	0.00	1.22	1.22	0.00	1.22	—	39,845	39,845	3.26	1.06	0.00	40,242

Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	0.08	0.89	1.63	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	—	437	437	0.04	0.01	0.00	441
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2028	0.00	0.01	0.16	0.30	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	—	72.3	72.3	0.01	< 0.005	0.00	73.0

3. Construction Emissions Details

3.1. Trenching (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	6.84	81.5	149	0.41	1.22	—	1.22	1.22	—	1.22	—	39,845	39,845	3.26	1.06	—	40,242
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.08	0.89	1.63	< 0.005	0.01	—	0.01	0.01	—	0.01	—	437	437	0.04	0.01	—	441
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.00	0.01	0.16	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	72.3	72.3	0.01	< 0.005	—	73.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Trenching (2028) - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	6.84	81.5	149	0.41	1.22	—	1.22	1.22	—	1.22	—	39,845	39,845	3.26	1.06	—	40,242
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.08	0.89	1.63	< 0.005	0.01	—	0.01	0.01	—	0.01	—	437	437	0.04	0.01	—	441
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.00	0.01	0.16	0.30	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	72.3	72.3	0.01	< 0.005	—	73.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Track & Signal Work	Trenching	5/1/2028	5/4/2028	5.00	4.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	10.0	4,400	0.42

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Track & Signal Work	Other Construction Equipment	Diesel	Average	2.00	10.0	4,400	0.42

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Track & Signal Work	—	—	—	—
Track & Signal Work	Worker	0.00	14.3	LDA,LDT1,LDT2
Track & Signal Work	Vendor	0.00	8.80	HHDT,MHDT
Track & Signal Work	Hauling	0.00	20.0	HHDT
Track & Signal Work	Onsite truck	0.00	2.00	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix

Track & Signal Work	—	—	—	—
Track & Signal Work	Worker	0.00	14.3	LDA,LDT1,LDT2
Track & Signal Work	Vendor	0.00	8.80	HHDT,MHDT
Track & Signal Work	Hauling	0.00	20.0	HHDT
Track & Signal Work	Onsite truck	0.00	2.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Office Building	0.00	0%
Other Non-Asphalt Surfaces	2.00	0%
Parking Lot	0.10	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2028	0.00	0.00	0.00	0.00

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	27.3	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A

Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	65.4
AQ-PM	16.4
AQ-DPM	62.4
Drinking Water	0.54
Lead Risk Housing	38.6
Pesticides	0.00
Toxic Releases	14.7
Traffic	80.2
Effect Indicators	—
CleanUp Sites	62.4
Groundwater	86.7
Haz Waste Facilities/Generators	52.6
Impaired Water Bodies	72.2
Solid Waste	94.1
Sensitive Population	—
Asthma	46.2
Cardio-vascular	83.6
Low Birth Weights	28.8
Socioeconomic Factor Indicators	—
Education	11.4
Housing	69.2

Linguistic	0.92
Poverty	42.6
Unemployment	64.5

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	55.89631721
Employed	49.83959964
Median HI	43.92403439
Education	—
Bachelor's or higher	58.65520339
High school enrollment	100
Preschool enrollment	16.54048505
Transportation	—
Auto Access	87.47593995
Active commuting	52.35467727
Social	—
2-parent households	62.5433081
Voting	80.61080457
Neighborhood	—
Alcohol availability	65.41768254
Park access	81.35506224
Retail density	75.01604004
Supermarket access	31.39997434
Tree canopy	83.53650712

Housing	—
Homeownership	54.45912999
Housing habitability	70.61465418
Low-inc homeowner severe housing cost burden	80.17451559
Low-inc renter severe housing cost burden	49.18516617
Uncrowded housing	78.31387142
Health Outcomes	—
Insured adults	54.83125882
Arthritis	38.0
Asthma ER Admissions	44.1
High Blood Pressure	70.1
Cancer (excluding skin)	27.6
Asthma	40.2
Coronary Heart Disease	57.7
Chronic Obstructive Pulmonary Disease	47.8
Diagnosed Diabetes	82.1
Life Expectancy at Birth	45.6
Cognitively Disabled	62.4
Physically Disabled	24.6
Heart Attack ER Admissions	32.5
Mental Health Not Good	56.0
Chronic Kidney Disease	79.8
Obesity	54.0
Pedestrian Injuries	44.6
Physical Health Not Good	66.1
Stroke	70.4
Health Risk Behaviors	—

Binge Drinking	7.5
Current Smoker	49.4
No Leisure Time for Physical Activity	72.6
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	73.7
Elderly	47.3
English Speaking	70.8
Foreign-born	4.8
Outdoor Workers	85.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	78.6
Traffic Density	75.9
Traffic Access	49.4
Other Indices	—
Hardship	35.6
Other Decision Support	—
2016 Voting	75.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	54.0
Healthy Places Index Score for Project Location (b)	59.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Construction schedule provided by project applicant. Run only includes off-site locomotive operation.
Construction: Off-Road Equipment	Construction equipment list provided by project applicant.
Land Use	Based on applicant-provided data.
Operations: Water and Waste Water	Based on applicant-provided data.
Operations: Solid Waste	Based on applicant-provided data.
Operations: Energy Use	Based on applicant-provided data.
Construction: Demolition	Based on applicant-provided data.
Construction: Trips and VMT	Run only includes off-site locomotive operation.
Construction: Electricity	Run only includes off-site locomotive operation.
Construction: Dust From Material Movement	Run only includes off-site locomotive operation.
Construction: Architectural Coatings	Based on applicant-provided data.
Construction: Paving	Based on applicant-provided data.
Construction: Off-Road Equipment EF	Per EPA Line-Haul emission factors for Tier 4 locomotive.
Construction: On-Road Fugitive Dust	Run only includes off-site locomotive operation.

Operational Locomotive Emissions Modeling

HP	BSFC (lbs/hp-hr)	BSFC (gal/hp-hr)
300 < hp < 750	0.367	0.05

Source: Appendix C

Emission Standards				Grams/hp-hr		
HP	Tier	HC	NMHC + NOX	CO	NOX	PM
<600 to <750	Tier 1	1		8.5	6.9	0.4
	Tier 2		4.8	2.6		0.15
	Tier 3		3	2.6		
	Tier 4 I	0.14			0.3	0.01
	Tier 4	0.14			0.3	0.01

Source: Table 1 Nonroad CI Engine Emission Standardsa

Calculated Emission Standards				Grams/hp-hr		
HP	Tier	ROG	NOX	CO	PM10	PM2.5
<600 to <750	Tier 1	1.1	6.9	8.5	0.40	0.39
	Tier 2	0.3	4.6	2.6	0.15	0.15
	Tier 3	0.2	2.9	2.6	0.15	0.15
	Tier 4 I	0.1	0.3	2.6	0.01	0.01
	Tier 4	0.1	0.3	2.6	0.01	0.01

Converted Emission Standards				Grams/gallon		
HP	Tier	ROG	NOX	CO	PM10	PM2.5
<600 to <750	Tier 1	0.05	0.35	0.44	0.02	0.02
	Tier 2	0.01	0.23	0.13	0.01	0.01
	Tier 3	0.01	0.15	0.13	0.01	0.01
	Tier 4 I	0.01	0.02	0.13	0.00	0.00
	Tier 4	0.01	0.02	0.13	0.00	0.00

CO2 CO2 = (BSFC * 453.6 - HC) * 0.87 * (44/12)

Tier	g/hp-hr	grams/gallon
Tier 1	163	8
Tier 2	166	9
Tier 3	166	9
Tier 4 I	166	9
Tier 4	166	9

SO2 SO2 = (BSFC * 453.6* (1 - soxcnv) - HC) * 0.01 * soxdsl * 2

Tier	g/hp-hr	grams/gallon
Tier 1	0.81	0.04
Tier 2	0.81	0.04
Tier 3	0.81	0.04
Tier 4 I	0.58	0.03
Tier 4	0.58	0.03

soxcnv	0.02247	All other Tiers
	0.3	Tier 4 only
soxdsl	0.25	

NOX_NMHC + NOX %	95%	http://www.baaqmd.gov/~/media/Files/Engineering/Public%20Notices/2009/20382/B9597_nsr_20382_eval_071009.ashx?la=en
NOX_NMHC + NMHC %	5%	http://www.baaqmd.gov/~/media/Files/Engineering/Public%20Notices/2009/20382/B9597_nsr_20382_eval_071009.ashx?la=en
NMHC/THC	0.984	http://www.epa.gov/oms/models/nonrdmdl/nonrdmdl2010/420r10015.pdf
ROG_HC (or THC)	1.053	http://www.epa.gov/oms/models/nonrdmdl/nonrdmdl2010/420r10015.pdf
PM2.5%	0.97	
	7.15	pounds diesel/gallon

Summary

Locomotive	Engine Tier	HEP (gal/hr)	Traction (gal/hr)	Notes
F59 Series C15	3	21	63	HEP is separate engine (500 KW)
F59 Series C15	4-I	21	63	HEP is separate engine (500 KW)
F59 Series C15	4	21	63	HEP is separate engine (500 KW)
F59 Series 3412C	0	21	63	HEP is separate engine (500 KW)
F59 Series 3412C	4-I	21	63	HEP is separate engine (500 KW)
Dash 8 Series (P32)	0+	28	61	HEP is part of main engine
P42 Series	0	28	85	HEP is part of main engine
ACR-44	4	29	90	HEP is part of main engine

Notes

1. Traction fuel consumption for F59, P32, and P42 based on calculations and sources shown below
2. HEP fuel consumption based on SMAQMD calculations provided by J. Allison
3. HEP and Traction fuel consumption for ACR-44 scaled from P42 based on horsepower ratio

P42 Horsepower 4000 Source: 12/9/2014 call
ACR-44 Horsepower 4200 Source: 12/9/2014 call

Calculations - Traction Engine

Throttle Position	**P32 (lbs/hour)***	**P42 (lbs/hour)****	**F59 (gals/hr)*****	**P32 (gals/hr)**	**P42 (gals/hr)**	**% Time in Notch********	**F59 Weighted (gal/hr)**	**P32 Weighted (gal/hr)**	**P42 Weighted (gal/hr)**
8	1060.0	1496.7	156.0	149.3	210.8	25%			
7	833.0	1223.7	128.0	117.3	172.4	2%			
6	572.0	977.1	88.0	80.6	137.6	5%			
5	480.0	756.8	74.6	67.6	106.6	6%			
4	368.0	514.2	57.1	51.8	72.4	8%			
3	254.0	367.3	38.2	35.8	51.7	9%			
2	142.0	171.1	19.6	20.0	24.1	8%			
1	91.0	90.5	11.9	12.8	12.7	11%			
Idle	32.0	25.9	2.6	4.5	3.6	15%			
DB	79.0	59.2	4.7	11.1	8.3	10%			
							63	**61**	**85**

Sources

* Fritz 1994 (Table 4, Standard Injection Timing)
** NPI Engineering 2005 (Slide 2)
*** Electro-Motive Diesel 2008
**** EPA 1998 (Table 4-5) Adjusted to reduce time at idle to 15%

Diesel Fuel Conversion 7.1 lbs/gal

100

Original		
15.6%	15.6	25.2%
1.4%	1.4	2.3%
2.9%	2.9	4.7%
4.0%	4	6.5%
4.7%	4.7	7.6%
5.7%	5.7	9.2%
5.1%	5.1	8.2%
7.0%	7	11.3%
47.4%	9.3	15.0%
6.2%	6.2	10.0%
	61.9	100.0%

Locomotive Details

Locomotive	Traction									Traction - Existing			Traction - Opening			Traction - Design		
	Tier		Fuel	Existing		Opening		Design		Weekday	Weekend	Annual	Weekday	Weekend	Annual	Weekday	Weekend	Annual
			(gal/hr)	#	%	#	%	#	%	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)
F59 Series C15	2		63	12	52%	4	17%	0	0%	0	0	102	0	0	34	0	0	0
F59 Series 3412C	2		63	3	13%	1	4%	0	0%	0	0	26	0	0	9	0	0	0
Dash 8 Series	0+		61	2	9%	1	4%	0	0%	0	0	17	0	0	9	0	0	0
P42 Series	0		85	0	0%	0	0%	0	0%	0	0	0	0	0	0	0	0	0
ACR-44	4		90	6	26%	17	74%	24	100%	0	0	51	0	0	145	1	0	196
Total	-		-	23	100%	23	100%	24	100%	**0.6**	**0.4**	**196**	**0.6**	**0.4**	**196**	**0.6**	**0.4**	**196**

Locomotive	HEP									HEP - Existing			HEP - Opening			HEP - Design		
	Tier		Fuel	Existing		Opening		Design		Weekday	Weekend	Annual	Weekday	Weekend	Annual	Weekday	Weekend	Annual
			(gal/hr)	#	%	#	%	#	%	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)
F59 Series C15	3		21	3	13%	1	4%	0	0%	1	1	397	0	0	132	0	0	0
F59 Series C15	4-I		21	4	17%	1	4%	0	0%	2	1	529	0	0	132	0	0	0
F59 Series C15	4		21	5	22%	2	9%	0	0%	2	1	661	1	1	264	0	0	0
F59 Series 3412C	0		21	3	13%	1	4%	0	0%	1	1	397	0	0	132	0	0	0
F59 Series 3412C	4-I		21	0	0%	0	0%	0	0%	0	0	0	0	0	0	0	0	0
Dash 8 Series	0+		28	2	9%	1	4%	0	0%	1	1	264	0	0	132	0	0	0
P42 Series	0		28	0	0%	0	0%	0	0%	0	0	0	0	0	0	0	0	0
ACR-44	4		29	6	26%	17	74%	24	100%	2	2	793	7	4	2247	9	6	3040
Total	-		-	23	100%	23	100%	24	100%	**9.4**	**6.0**	**3,040**	**9.4**	**6.0**	**3,040**	**9.4**	**6.0**	**3,040**

NET Pounds per day - WeekDAY (max)

Locomotive	Traction - Existing									Traction - Opening									Traction - Design								Note
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	
F59 Series C15	0.2	4.5	1.2	0.2	0.2	0.0	443	0.0	0.0	0.1	1.5	0.4	0.1	0.1	0.0	147.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
F59 Series 3412C	0.1	1.1	0.3	0.0	0.0	0.0	111	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.0	36.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
Dash 8 Series	0.0	1.0	0.2	0.0	0.0	0.0	71	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	35.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
P42 Series	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
ACR-44	0.0	0.6	0.8	0.0	0.0	0.0	316	0.0	0.0	0.1	1.8	2.3	0.0	0.0	0.0	895.3	0.1	0.0	0.1	2.5	3.2	0.0	0.0	0.0	1,211	0.1	0.0	Loco EF
Total	0.4	7.3	2.5	0.2	0.2	0.0	940	0.1	0.0	0.2	4.2	2.9	0.1	0.1	0.0	1,115	0.1	0.0	0.1	2.5	3.2	0.0	0.0	0.0	1,211	0.1	0.0	Loco EF

Locomotive	HEP - Existing									HEP - Opening									HEP - Design									
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
Dash 8 Series	0.3	7.6	1.3	0.2	0.2	0.0	515.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
P42 Series	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
ACR-44	0.1	3.3	4.2	0.0	0.0	0.0	1622.5	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	3.8	0.0	0.2	0.5	12.7	16.2	0.2	0.2	0.1	6219.4	0.5	0.2	Loco EF
Total	0.5	10.9	5.6	0.3	0.3	0.0	2139.9	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	4.9	0.0	0.2	0.5	12.7	16.2	0.2	0.2	0.1	6219.4	0.5	0.2	Loco EF

Condition	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
Existing - Entire project	1	18	8	1	0	0	3,080	0	0
Design - Entire project	1	15	19	0	0	0	7,431	1	0

NET Tons and metric tons per year

Locomotive	Traction - Existing									Traction - Opening									Traction - Design								
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
F59 Series C15	0.0	0.7	0.2	0.0	0.0	0.0	66	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	24.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
F59 Series 3412C	0.0	0.2	0.0	0.0	0.0	0.0	16	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
Dash 8 Series	0.0	0.2	0.0	0.0	0.0	0.0	11	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
P42 Series	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
ACR-44	0.0	0.1	0.1	0.0	0.0	0.0	47	0.0	0.0	0.0	0.3	0.4	0.0	0.0	0.0	146.2	0.0	0.0	0.0	0.4	0.5	0.0	0.0	0.0	179	0.0	0.0
Total	0.1	1.2	0.4	0.0	0.0	0.0	139	0.0	0.0	0.0	0.7	0.5	0.0	0.0	0.0	182	0.0	0.0	0.0	0.4	0.5	0.0	0.0	0.0	179	0.0	0.0

Locomotive	HEP - Existing									HEP - Opening									HEP - Design									
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
Dash 8 Series	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
P42 Series	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
ACR-44	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	Loco EF
Total	0.0014	0.0083	0.0159	0.0005	0.0004	0.0027	0.6772	0.0000	0.0000	0.0010	0.0042	0.0145	0.0002	0.0002	0.0029	0.7847	0.0000	0.0000	0.0007	0.0015	0.0131	0.0001	0.0000	0.0029	0.8396	0.0000	0.0000	Loco EF

Condition	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
Existing	0	1	0	0	0	0	140	0	0
Opening	0	1	0	0	0	0	183	0	0
Design	0	0	1	0	0	0	180	0	0

pounds per gram	0.00220462
tons per gram	1.10E-06
mt per gram	1.00E-06

Locomotive Details

Locomotive	Traction									Traction - Existing			Traction - Opening			Traction - Design		
	Tier		Fuel (gal/hr)	Existing		Opening		Design		Weekday	Weekend	Annual	Weekday	Weekend	Annual	Weekday	Weekend	Annual
				#	%	#	%	#	%	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)
F59 Series C15	2		63	12	52%	4	17%	0	0%	0	0	102	0	0	34	0	0	0
F59 Series 3412C	2		63	3	13%	1	4%	0	0%	0	0	26	0	0	9	0	0	0
Dash 8 Series	0+		61	2	9%	1	4%	0	0%	0	0	17	0	0	9	0	0	0
P42 Series	0		85	0	0%	0	0%	0	0%	0	0	0	0	0	0	0	0	0
ACR-44	4		90	6	26%	17	74%	24	100%	0	0	51	0	0	145	1	0	196
Total	-		-	23	100%	23	100%	24	100%	**0.6**	**0.4**	**196**	**0.6**	**0.4**	**196**	**0.6**	**0.4**	**196**

Locomotive	HEP									HEP - Existing			HEP - Opening			HEP - Design		
	Tier		Fuel (gal/hr)	Existing		Opening		Design		Weekday	Weekend	Annual	Weekday	Weekend	Annual	Weekday	Weekend	Annual
				#	%	#	%	#	%	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)
F59 Series C15	3		21	3	13%	1	4%	0	0%	1	1	397	0	0	132	0	0	0
F59 Series C15	4-I		21	4	17%	1	4%	0	0%	2	1	529	0	0	132	0	0	0
F59 Series C15	4		21	5	22%	2	9%	0	0%	2	1	661	1	1	264	0	0	0
F59 Series 3412C	0		21	3	13%	1	4%	0	0%	1	1	397	0	0	132	0	0	0
F59 Series 3412C	4-I		21	0	0%	0	0%	0	0%	0	0	0	0	0	0	0	0	0
Dash 8 Series	0+		28	2	9%	1	4%	0	0%	1	1	264	0	0	132	0	0	0
P42 Series	0		28	0	0%	0	0%	0	0%	0	0	0	0	0	0	0	0	0
ACR-44	4		29	6	26%	17	74%	24	100%	2	2	793	7	4	2247	9	6	3040
Total	-		-	23	100%	23	100%	24	100%	**9.4**	**6.0**	**3,040**	**9.4**	**6.0**	**3,040**	**9.4**	**6.0**	**3,040**

NET gallons and BTU - WeekDAY (max) and Annual

Locomotive	Gallons-Diesel						Combustion BTU (million)						Total BTU (million)					
	Traction - Existing		Traction - Opening		Traction - Design		Traction - Existing		Traction - Opening		Traction - Design		Traction - Existing		Traction - Opening		Traction - Design	
	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual
F59 Series C15	20	6,425	7	2,142	0	0	3	832	1	277	1	277	3	1,007	1	336	0	0
F59 Series 3412C	5	1,606	2	535	0	0	1	208	0	69	0	69	1	252	0	84	0	0
Dash 8 Series	3	1,032	2	516	0	0	0	134	0	67	0	67	0	162	0	81	0	0
P42 Series	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACR-44	14	4,587	40	12,995	54	17,582	2	594	5	1,683	5	1,683	2	719	6	2,037	8	2,756
Total	42	13,650	50	16,188	54	17,582	5	1,767	6	2,096	6	2,096	7	2,140	8	2,538	8	2,756

Locomotive	Gallons-Diesel						Combustion BTU (million)						Total BTU (million)					
	HEP - Existing		HEP - Opening		HEP - Design		HEP - Existing		HEP - Opening		HEP - Design		HEP - Existing		HEP - Opening		HEP - Design	
	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual
F59 Series C15	26	8,327	9	2,776	0	0	3	1,078	1	359	0	0	4	1,305	1	435	0	0
F59 Series C15	34	11,103	9	2,776	0	0	4	1,438	1	359	0	0	5	1,741	1	435	0	0
F59 Series C15	43	13,878	17	5,551	0	0	6	1,797	2	719	0	0	7	2,176	3	870	0	0
F59 Series 3412C	26	8,327	9	2,776	0	0	3	1,078	1	359	0	0	4	1,305	1	435	0	0
F59 Series 3412C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dash 8 Series	23	7,402	11	3,701	0	0	3	958	1	479	0	0	4	1,160	2	580	0	0
P42 Series	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACR-44	72	23,315	204	66,061	276	89,376	9	3,019	26	8,554	36	11,573	11	3,655	32	10,356	43	14,011
Total	224	72,352	259	83,640	276	89,376	29	9,369	33	10,830	36	11,573	35	11,342	41	13,112	43	14,011

	Gallons-Diesel		Combustion BTU		Total BTU	
Condition	Daily	Annual	Daily	Annual	Daily	Annual
Existing	266	86,002	34	11,136	42	13,482
Opening	308	99,828	40	12,927	48	15,650
Design	330	106,958	42	13,669	52	16,767

Fuel	Combustion	Total	Unit
Gasoline	113,927	138,766	BTU/Gal
Diesel	129,488	156,765	BTU/Gal

Million	1,000,000

Future Locomotives in Use for Capitol Corridor Service for Air Quality Analysis purposes

Loco #	Name	Traction Power Engine	2018 (base)		2029 (opening)		2035 (design)		HEP Power Engine	2018 (base)		2029 (opening)		2035 (design)	
			Tier #	#	Tier #	#	Tier #	#		Tier #	#	Tier #	#	Tier #	#
2001	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT C-15	3	1	3	0	4-I	0
2002	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT C-15	3	1	3	0	4-I	0
2003	F59 Series 3412C	EMD710 ECO	2	1	2	0	2	0	CAT 3412	0	1	0	0	4-I	0
2004	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT C-15	4	1	4	0	4	0
2005	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT C-15	4	1	4	0	4	0
2006	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT C-15	4	1	4	0	4	0
2007	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT - C-15i	4-I	1	4-I	0	4-I	0
2008	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT C-15	4	1	4	0	4	0
2009	F59 Series C15	EMD710 ECO	2	1	2	0	2	0	CAT - C-15i	4-I	1	4-I	0	4-I	0
2010	F59 Series C15	EMD710 ECO	2	1	2	1	2	0	CAT - C-15i	4-I	1	4-I	0	4-I	0
2011	F59 Series C15	EMD710 ECO	2	1	2	1	2	0	CAT C-15	4	1	4	2	4	0
2012	F59 Series 3412C	EMD710 ECO	2	1	2	0	2	0	CAT 3412	0	1	0	0	4-I	0
2013	F59 Series 3412C	EMD710 ECO	2	1	2	1	2	0	CAT 3412	0	1	0	1	4-I	0
2014	F59 Series C15	EMD710 ECO	2	1	2	1	2	0	CAT - C-15i	4-I	1	4-I	1	4-I	0
2015	F59 Series C15	EMD710 ECO	2	1	2	1	2	0	CAT C-15	3	1	3	1	4-I	0
2051	Dash 8 Series	Gen. Elect 7FLDN	0+	1	0+	0	0+	0	Part of main engine	0+	1	0+	0	0+	0
2052	Dash 8 Series	Gen. Elect 7FLDN	0+	1	0+	1	0+	0	Part of main engine	0+	1	0+	1	0+	0
Qty. 4-7 #1-207	P42 Series	Gen. Elect. P-42	0	0	0	0	0	0	main engine	0	0	0	0	0	0
New Loco CDTXxxx	ACR-44	Cummings QSK95		6		17	4	24	AC traction part of eng. Sys	4	6	4	17	4	24
New Loco CDTXxxx	ACR-44	Cummings QSK95					4	0	AC traction part of eng. Sys					4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95					4	0	AC traction part of eng. Sys					4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95					4	0	AC traction part of eng. Sys					4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95					4	0	AC traction part of eng. Sys					4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95					4	0	AC traction part of eng. Sys					4	0

Locomotive	Tier	Traction					
		2018 (base)		2029 (opening)		2035 (design)	
		#	%	#	%	#	%
F59 Series C15	2	12	52%	4	17%	0	0%
F59 Series 3412C	2	3	13%	1	4%	0	0%
Dash 8 Series	0+	2	9%	1	4%	0	0%
P42 Series	0	0	0%	0	0%	0	0%
ACR-44	4	6	26%	17	74%	24	100%
Total	-	23	100%	23	100%	24	100%
		0				*0*	

Locomotive	Tier	HEP					
		2018 (base)		2029 (opening)		2035 (design)	
		#	%	#	%	#	%
F59 Series C15	3	3	13%	1	4%	0	0%
F59 Series C15	4-I	4	17%	1	4%	0	0%
F59 Series C15	4	5	22%	2	9%	0	0%
F59 Series 3412C	0	3	13%	1	4%	0	0%
F59 Series 3412C	4-I	0	0%	0	0%	0	0%
Dash 8 Series	0+	2	9%	1	4%	0	0%
P42 Series	0	0	0%	0	0%	0	0%
ACR-44	4	6	26%	17	74%	24	100%
Total		23	100%	23	100%	24	100%

HEP upgrade to Tier 4-I is expected to complete in March 2015, replacing the existing Tier III and the 3412 series engines.
Two GE P32-8 locomotives are being currently reviewed for their potential future possible rebuild to latest EPA emissions technology available on these types of engines
2008 fleet mix is equal to 2015 mix; thereafter, new locomotives will be phased

Capitol Corridor Service Increment - Sacramento to Roseville 3rd Track Project

	Daily minutes shown for each additional train between Sacramento and Roseville inclue travel time in rolling operation and idle time								*Assumed level of Weekday service and Weekend/Holiday Schedule service per year*			
	Typical Weekday Day		Typical Weekend Day		Weekday Conversion to Daily Hours of service		Weekend/Holiday Conversion to Daily Hours of service		Weekday Ops/year	Weekend-Holiday Ops/Year	Running Time Hours/year	Idle Time Hours/Year Rose
Added Trips	Running Time (min)	Idle (HEP) Time Rose (min)	Running Time (min)	Idle (HEP) Time Rose (min)	Running Time (hr)	Idle (HEP) Time Rose (hr)	Running Time (hr)	Idle (HEP) Time Rose (hr)	250	115	196	3040
Trip #1	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #2	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #3	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #4	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #5	2	46	2	30	0.033	0.767	0.03	0.50				
Trip #6	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #7	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #8	2	34	2	30	0.033	0.567	0.03	0.50				
Trip #9	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #10	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #11	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #12	2	30	2	30	0.033	0.500	0.03	0.50				
Trip #13	2	30			0.033	0.500						
Trip #14	2	30			0.033	0.500						
Trip #15	2	30			0.033	0.500						
Trip #16	2	34			0.033	0.567						
Trip #17	2	30			0.033	0.500						
Trip #18	2	30			0.033	0.500						
TOTALS	36	564	24	360	0.6	9.4	0.4	6				

Sources and Assumptions:

CCJPA is the source for running times and idle (HEP) times. These values are based on travel schedules and estimated layover hours required for each trip which vary based on the schedule.

Layover facility would add 2 minutes of running time to each train evaluated in the previous EIR for the additional distance from the station to the layover, which is about 1 mile (2 minute travel time, assuming it's made at 30 MPH).

The traction, or main engine, is subject to EPA locomotive emission standards.
The HEP is subject to the ARB offroad standards. ONLY the P59 has a separate HEP engine. All other locomotives utilize the traction engine for hoteling

Engine Tier	Power Engine (g/gal)								
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
0	10.51	178.88	26.62	6.66	6.46	0.09	10,208	0.80	0.26
0+	6.57	149.76	26.62	4.16	4.04	0.09	10,208	0.80	0.26
1	10.29	139.36	26.62	6.66	6.46	0.09	10,208	0.80	0.26
1+	6.35	139.36	26.62	4.16	4.04	0.09	10,208	0.80	0.26
2	5.69	102.96	26.62	3.74	3.63	0.09	10,208	0.80	0.26
2+	2.85	102.96	26.62	1.66	1.61	0.09	10,208	0.80	0.26
3	2.85	102.96	26.62	1.66	1.61	0.09	10208	0.80	0.26
4-I	-	-	-	-	-	-	-	-	-
4	0.88	20.80	26.62	0.31	0.30	0.09	10,208	0.80	0.26

Engine Tier	500 kW HEP Engine (g/gal) [ONLY FOR SEPARATE HEP ENGINE ON F59]								
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
0	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
0+	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
1	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
1+	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
2	0.01	0.23	0.13	0.01	0.01	0.04	9	0.00	0.00
2+	0.01	0.23	0.13	0.01	0.01	0.04	9	0.00	0.00
3	0.01	0.15	0.13	0.01	0.01	0.04	9	0.00	0.00
4-I	0.01	0.02	0.13	0.00	0.00	0.03	9	0.00	0.00
4	0.01	0.02	0.13	0.00	0.00	0.03	9	0.00	0.00

EPA 2009, Table 1 https://nepis.epa.gov/Exe/ZyNET.exe/P100500B.txt?ZyActionD=ZyDocument&Client=EPA&Index=2006%20Thru%20
Climate Registry http://www.theclimateregistry.org/downloads/2014/02/2014-Climate-Registry-Default-Emissions-Factors.pdf

EPA 2009 http://www.epa.gov/otaq/models/nonrdmdl/nonrdmdl2010/420r10018.pdf
See: C-I Emission Rates.xls

VOC_HC	1.053	
PM2.5_PM10	0.97	
N2O_CO2	0.000026	Climate Registry 2014
CH4_CO2	0.000057	Climate Registry 2014
bhp-hr/gal	20.8	EPA 2011

N2O_CO2 Die	2.5465E-05	Climate Registry 2014
CH4_CO2 Die	5.6807E-05	Climate Registry 2014

SO2 (g/gal) = 0.09

based on:

(fuel density) x (conversion factor) x (64 g SO2 / 32 g S) x (S content of fuel)

fuel density	3200	g/gal
conversion factor	0.978	(fraction of fuel sulfur convered to so2)
64 / 32	2	
S content of fuel	1.50E-05	15 ppm

http://www.arb.ca.gov/regact/carblohc/ruid.pdf

CO2 (g/gal) = 10208

based on:

(fuel density) x (44 g CO2 / 12 g C) x (C content of fuel)

fuel density	3200	g/gal
44 / 12	3.66666667	
C content of fuel	8.70E-01	87% by mass

1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10

Locomotive	Engine Tier	Idle-HEP Mode Fuel (gal/hr)	Traction Fuel (gal/hr)	Notes
F59 Series C15	3	21	63	HEP is separate engine (500 KW)
F59 Series C15	4-I	21	63	HEP is separate engine (500 KW)
F59 Series C15	4	21	63	HEP is separate engine (500 KW)
F59 Series 3412C	0	21	63	HEP is separate engine (500 KW)
F59 Series 3412C	4-I	21	63	HEP is separate engine (500 KW)
Dash 8 Series	0+	28	61	HEP is part of main engine
P42 Series	0	28	85	HEP is part of main engine
ACR-44	4	29	90	HEP is part of main engine

See: Locomotive Weighted Fuel Consumption Rate.xls

Table 1. Net Project Impact under Existing Conditions (2013) in PCAPCD (pounds per day)

PCAPCD/SMAQMD Scale
50%

Parameter	ROG	NOX	CO	PM10	PM2.5	SO2
Train Operation (movement and idle)[a]	2.7	51.4	11.1	1.8	1.7	0.1
Public vehiclesb	-6.6	-21.5	-80.8	-6.4	-2.1	-0.2
Public Buses - Thruway Service c	0.0	-0.2	-0.4	0.0	0.0	0.0
Public Buses - Roseville Transit	0.0	0.1	0.2	0.0	0.0	0.0
O&M at Roseville Station	0.1	0.1	0.3	0.0	0.0	0.0
Total Net Change	-3.8	29.9	-69.6	-4.6	-0.4	-0.1

a. Based on maxiumn weekday operating schedule
b. Changes in public vehicle usage would occur in both SMAQMDand PCAPCD. Total emissions reductions scaled 50% to PCAPCD
c. Changes in Thurway service would occur in SMAQMDand PCAPCD. Total emissions reductions scaled 50% to PCAPCD

Table 2. Net Project Impact under Existing Conditions (2013) in SMAQMD (pounds per day)

Parameter	ROG	NOX	CO	PM10	PM2.5	SO2
Train Operation (movement and idle)[a]	6.3	115.4	28.0	4.1	4.0	0.1
Public vehicles[b]	-6.6	-21.5	-80.8	-6.4	-2.1	-0.2
Public Buses - Thruway Service [c]	0.0	-0.2	-0.4	0.0	0.0	0.0
Public Buses - Roseville Transit	0.0	0.0	0.0	0.0	0.0	0.0
O&M at Roseville Station	0.0	0.0	0.0	0.0	0.0	0.0
Total Net Change	-0.3	93.7	-53.2	-2.3	1.9	-0.1

a. Based on maximum weekday operating schedule
b. Changes in public vehicle usage would occur in both SMAQMDand PCAPCD. Total emissions reductions scaled 50% to PCAPCD
c. Changes in Thruway service would occur in SMAQMDand PCAPCD. Total emissions reductions scaled 50% to PCAPCD

Table 3. Net Project Impact under Existing Conditions (2013) in the Entire Project Area (tons/metric tons per year)

Parameter	ROG	NOX	CO	PM10	PM2.5	SO2	CO2[a]	CH4	N2O	Other	CO2e
Train Operation (movement and idle)	1.5	27.3	6.4	1.0	0.9	0.0	2,223.4	0.2	0.1	-	2,243
Public vehicles	-2.3	-7.5	-28.0	-2.2	-0.7	-0.1	-4,508	-	-	-54	-4,562
Public Buses - Thruway Service	0.0	0.0	-0.1	0.0	0.0	0.0	-20	0.0	0.0	-	-20
Public Buses - Roseville Transit	0.0	0.0	0.0	0.0	0.0	0.0	8	0.0	0.0	-	8
O&M at Roseville Station	0.0	0.0	0.1	0.0	0.0	0.0	29	0.1	0.0	0.1	32
Standby Electricity Usage	-	-	-	-	-	-	-80	0.0	0.0	0.0	-81
Total Net Change	-0.8	19.8	-21.6	-1.2	0.22	-0.04	-2,349	0.3	0.1	-54	-2,380

a. Assumes Pavley/LCFS/RPS, as applicable

Table 4. Net Project Impact under Design Conditions (2035) in PCAPCD (pounds per day)

Parameter	ROG	NOX	CO	PM10	PM2.5	SO2
Train Operation (movement and idle)[a]	0.9	21.9	28.1	0.3	0.3	0.1
Public vehicles	-2.7	-5.9	-29.1	-6.2	-1.9	-0.2
Public Buses - Thruway Service	0.0	0.0	0.0	0.0	0.0	0.0
Public Buses - Roseville Transit	0.0	0.0	0.0	0.0	0.0	0.0
O&M at Roseville Station	0.1	0.0	0.1	0.0	0.0	0.0
O&M at Roseville Layover Facility	0.1	0.0	0.3	0.1	0.0	0.0
Total Net Change	-1.6	16.1	-0.6	-5.8	-1.6	-0.1

a. Based on maxiumn weekday operating schedule

Table 5. Net Project Impact under Design Conditions (2035) in SMAQMD (pounds per day)

Parameter	ROG	NOX	CO	PM10	PM2.5	SO2
Train Operation (movement and idle)[a]	0.9	21.4	27.4	0.3	0.3	0.1
Public vehicles	-2.7	-5.9	-29.1	-6.2	-1.9	-0.2
Public Buses - Thruway Service	0.0	0.0	0.0	0.0	0.0	0.0
Public Buses - Roseville Transit	0.0	0.0	0.0	0.0	0.0	0.0
O&M at Roseville Station	0.0	0.0	0.0	0.0	0.0	0.0
Total Net Change	-1.8	15.5	-1.7	-5.9	-1.6	-0.1

a. Based on maxiumn weekday operating schedule

Table 6. Net Project Impact under Design Conditions (2035) in the Entire Project Area (tons per year)

Parameter	ROG	NOX	CO	PM10	PM2.5	SO2	CO2[a]	CH4	N2O	Other	CO2e
Train Operation (movement and idle)	0.3	7.1	9.1	0.1	0.1	0.0	3,147.9	0.2	0.1	-	3,176
Public vehicles	-1.0	-2.0	-10.1	-2.2	-0.7	-0.1	-3,388	-	-	-41	-3,428
Public Buses - Thruway	0.0	0.0	0.0	0.0	0.0	0.0	-18.4	0.0	0.0	-	-18
Public Buses - Roseville	0.0	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	-	7
O&M at Roseville Station	0.0	0.0	0.0	0.0	0.0	0.0	18.0	0.1	0.0	0.1	21
Standby Electricity Usage	-	-	-	-	-	-	-36	0.0	0.0	0.0	-37
O&M at Roseville Layover Facility	0.1	0.0	0.3	0.1	0.0	0.0	95.3	0.3	0.0	-	104
Total Net Change	-0.5	5.1	-0.7	-2.0	-0.5	0.0	-174.1	0.6	0.1	-40.6	-175.1

a. Assumes Pavley/LCFS/RPS, as applicable

Table 1. Net Project Enegy Impact (million BTUs per year) (combustion)

Source	Existing	Design		
Direct Energy				
Train Operation (movement and idle)	26,810	37,655		
Public vehicles	-73,787	-54,603		
Public Buses	-693	-693	-47,670	-17,641
Indirect Energy				
O&M at Roseville Station	430	379		
Standby Electricity Usage	-943	-943	-513	-564
Total Net Change	-48,183	-18,204		

Construction Energy	45,387	Million BTU

Locomotive Details

Locomotive	Traction							Traction - Existing			Traction - Design		
	Tier		Fuel (gal/hr)	Existing		Design		Weekday (hr/day)	Weekend (hr/day)	Annual (hr/yr)	Weekday (hr/day)	Weekend (hr/day)	Annual (hr/yr)
				#	%	#	%						
F59 Series C15	2		63	12	67%	0	0%	7	5	2270	0	0	0
F59 Series 3412C	2		63	3	17%	0	0%	2	1	568	0	0	0
Dash 8 Series	0+		61	2	11%	0	0%	1	1	378	0	0	0
P42 Series	0		85	1	6%	0	0%	1	0	189	0	0	0
ACR-44	4		90	0	0%	24	100%	0	0	0	10	7	3405
Total	-		-	18	100%	24	100%	**10.4**	**7.0**	**3,405**	**10.4**	**7.0**	**3,405**

Locomotive	HEP							HEP - Existing Sacramento			HEP - Existing Roseville			HEP - Design Sacramento			HEP - Design Roseville		
	Tier		Fuel (gal/hr)	Existing		Design		Weekday (hr/day)	Weekend (hr/day)	Annual (hr/yr)	Weekday (hr/day)	Weekend (hr/day)	Annual (hr/yr)	Weekday (hr/day)	Weekend (hr/day)	Annual (hr/yr)	Weekday (hr/day)	Weekend (hr/day)	Annual (hr/yr)
				#	%	#	%												
F59 Series C15	3		21	3	17%	0	0%	-2	-1	-490	2	1	507	0	0	0	0	0	0
F59 Series C15	4-I		21	4	22%	0	0%	-2	-1	-653	2	1	676	0	0	0	0	0	0
F59 Series C15	4		21	5	28%	0	0%	-3	-2	-817	3	2	844	0	0	0	0	0	0
F59 Series 3412C	0		21	3	17%	0	0%	-2	-1	-490	2	1	507	0	0	0	0	0	0
F59 Series 3412C	4-I		21	0	0%	0	0%	0	0	0	0	0	0	0	0	0	0	0	0
Dash 8 Series	0+		28	2	11%	0	0%	-1	-1	-327	1	1	338	0	0	0	0	0	0
P42 Series	0		28	1	6%	0	0%	-1	0	-163	1	0	169	0	0	0	0	0	0
ACR-44	4		29	0	0%	24	100%	0	0	0	0	0	0	-9	-6	-2940	9	6	3040
Total	-		-	18	100%	24	100%	**-9.0**	**-6.0**	**-2,940**	**9.4**	**6.0**	**3,040**	**-9.0**	**-6.0**	**-2,940**	**9.4**	**6.0**	**3,040**

NET Pounds per day - WeekDAY (max)

Locomotive	Traction - Existing									Traction - Design									Note
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	
F59 Series C15	5.5	98.9	25.6	3.6	3.5	0.1	9,803	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
F59 Series 3412C	1.4	24.7	6.4	0.9	0.9	0.0	2,451	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
Dash 8 Series	1.0	23.1	4.1	0.6	0.6	0.0	1,574	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
P42 Series	1.1	19.5	2.9	0.7	0.7	0.0	1,111	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	Loco EF
ACR-44	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	1.8	42.8	54.8	0.6	0.6	0.2	20,995	1.6	0.5	Loco EF
Total	9.0	166.2	39.0	5.9	5.7	0.1	14,939	1.2	0.4	1.8	42.8	54.8	0.6	0.6	0.2	20,995	1.6	0.5	Loco EF

Locomotive	HEP - Existing (SACRAMENTO)									HEP - Design (SACRAMENTO)									
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
Dash 8 Series	-0.4	-9.2	-1.6	-0.3	-0.2	0.0	-630.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
P42 Series	-0.3	-5.5	-0.8	-0.2	-0.2	0.0	-315.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
ACR-44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.5	-12.1	-15.5	-0.2	-0.2	-0.1	-5954.8	-0.5	-0.2	Loco EF
Total	-0.7	-14.8	-2.5	-0.5	-0.5	0.0	-948.1	-0.1	0.0	-0.5	-12.1	-15.5	-0.2	-0.2	-0.1	-5954.8	-0.5	-0.2	Loco EF

Locomotive	HEP - Existing (ROSEVILLE)									HEP - Design (ROSEVILLE)									
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
Dash 8 Series	0.4	9.7	1.7	0.3	0.3	0.0	658.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
P42 Series	0.3	5.8	0.9	0.2	0.2	0.0	329.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
ACR-44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	12.7	16.2	0.2	0.2	0.1	6219.4	0.5	0.2	Loco EF
Total	0.8	15.5	2.6	0.5	0.5	0.0	990.3	0.1	0.0	0.5	12.7	16.2	0.2	0.2	0.1	6219.4	0.5	0.2	Loco EF

Condition	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
Existing - SACRAMENTO	6	115	28	4	4	0	10,757	1	0
Design - SACRAMENTO	1	21	27	0	0	0	10,495	1	0
Existing - ROSEVILLE	3	51	11	2	2	0	4,225	0	0
Design - ROSEVILLE	1	22	28	0	0	0	10,765	1	0
Existing - Entire project	9	167	39	6	6	0	14,982	1	0
Design - Entire project	2	43	55	1	1	0	21,260	2	1

Track Miles	
SMAQMD	78%
PCAPCD	22%

NET Tons and metric tons per year

Locomotive	Traction - Existing									Traction - Design								
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
F59 Series C15	0.9	16.2	4.2	0.6	0.6	0.0	1,456	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
F59 Series 3412C	0.2	4.0	1.0	0.1	0.1	0.0	364	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
Dash 8 Series	0.2	3.8	0.7	0.1	0.1	0.0	234	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
P42 Series	0.2	3.2	0.5	0.1	0.1	0.0	165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0
ACR-44	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.3	7.0	9.0	0.1	0.1	0.0	3,118	0.2	0.1
Total	1.5	27.2	6.4	1.0	0.9	0.0	2,219	0.2	0.1	0.3	7.0	9.0	0.1	0.1	0.0	3,118	0.2	0.1

Locomotive	HEP - Existing									HEP - Design									
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O	
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series C15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
F59 Series 3412C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Offroad EF
Dash 8 Series	0.0	0.1	0.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
P42 Series	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Loco EF
ACR-44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	30.0	0.0	0.0	Loco EF
Total	0.0	0.1	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	30.0	0.0	0.0	Loco EF

Condition	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
Existing	1	27	6	1	1	0	2,223	0	0
Design	0	7	9	0	0	0	3,148	0	0

pounds per gram	0.002205
tons per gram	1.10E-06
mt per gram	1.00E-06

Locomotive Details

Locomotive	Traction							Traction - Existing			Traction - Design		
	Tier		Fuel (gal/hr)	Existing		Design		Weekday	Weekend	Annual	Weekday	Weekend	Annual
				#	%	#	%	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)
F59 Series C15	2		63	12	67%	0	0%	7	5	2270	0	0	0
F59 Series 3412C	2		63	3	17%	0	0%	2	1	568	0	0	0
Dash 8 Series	0+		61	2	11%	0	0%	1	1	378	0	0	0
P42 Series	0		85	1	6%	0	0%	1	0	189	0	0	0
ACR-44	4		90	0	0%	24	100%	0	0	0	10	7	3405
Total	-		-	18	100%	24	100%	**10.4**	**7.0**	**3,405**	**10.4**	**7.0**	**3,405**

Locomotive	HEP							HEP - Existing Sacramento			HEP - Existing Roseville			HEP - Design Sacramento			HEP - Design Roseville		
	Tier		Fuel (gal/hr)	Existing		Design		Weekday	Weekend	Annual	Weekday	Weekend	Annual	Weekday	Weekend	Annual	Weekday	Weekend	Annual
				#	%	#	%	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)	(hr/day)	(hr/day)	(hr/yr)
F59 Series C15	3		21	3	17%	0	0%	-2	-1	-490	2	1	507	0	0	0	0	0	0
F59 Series C15	4-I		21	4	22%	0	0%	-2	-1	-653	2	1	676	0	0	0	0	0	0
F59 Series C15	4		21	5	28%	0	0%	-3	-2	-817	3	2	844	0	0	0	0	0	0
F59 Series 3412C	0		21	3	17%	0	0%	-2	-1	-490	2	1	507	0	0	0	0	0	0
F59 Series 3412C	4-I		21	0	0%	0	0%	0	0	0	0	0	0	0	0	0	0	0	0
Dash 8 Series	0+		28	2	11%	0	0%	-1	-1	-327	1	1	338	0	0	0	0	0	0
P42 Series	0		28	1	6%	0	0%	-1	0	-163	1	0	169	0	0	0	0	0	0
ACR-44	4		29	0	0%	24	100%	0	0	0	0	0	0	-9	-6	-2940	9	6	3040
Total	-		-	18	100%	24	100%	**-9.0**	**-6.0**	**-2,940**	**9.4**	**6.0**	**3,040**	**-9.0**	**-6.0**	**-2,940**	**9.4**	**6.0**	**3,040**

NET gallons and BTU - WeekDAY (max) and Annual

Locomotive	Gallons-Diesel				Combustion BTU (million)				Total BTU (million)			
	Traction - Existing		Traction - Design		Traction - Existing		Traction - Design		Traction - Existing		Traction - Design	
	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual
F59 Series C15	436	142,621	0	0	56	18,468	0	0	68	22,358	0	0
F59 Series 3412C	109	35,655	0	0	14	4,617	0	0	17	5,589	0	0
Dash 8 Series	70	22,905	0	0	9	2,966	0	0	11	3,591	0	0
P42 Series	49	16,161	0	0	6	2,093	0	0	8	2,533	0	0
ACR-44	0	0	933	305,439	0	0	121	39,551	0	0	146	47,882
Total	664	217,341	933	305,439	86	28,143	121	39,551	104	34,072	146	47,882

Locomotive	Gallons-Diesel				Combustion BTU (million)				Total BTU (million)			
	HEP - Existing		HEP - Design		HEP - Existing		HEP - Design		HEP - Existing		HEP - Design	
	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual
F59 Series C15	1	350	0	0	0	45	0	0	0	55	0	0
F59 Series C15	2	467	0	0	0	60	0	0	0	73	0	0
F59 Series C15	2	583	0	0	0	76	0	0	0	91	0	0
F59 Series 3412C	1	350	0	0	0	45	0	0	0	55	0	0
F59 Series 3412C	0	0	0	0	0	0	0	0	0	0	0	0
Dash 8 Series	1	311	0	0	0	40	0	0	0	49	0	0
P42 Series	1	156	0	0	0	20	0	0	0	24	0	0
ACR-44	0	0	12	2,940	0	0	2	381	0	0	2	461
Total	9	2,217	12	2,940	1	287	2	381	1	347	2	461

	Gallons-Diesel		Combustion BTU		Total BTU	
Condition	Daily	Annual	Daily	Annual	Daily	Annual
Existing	673	219,558	87	28,430	105	34,419
Design	945	308,379	122	39,931	148	48,343

Fuel	Combustion	Total	Unit
Gasoline	113,927	138,766	BTU/Gal
Diesel	129,488	156,765	BTU/Gal

Million	1,000,000

Future Locomotives in Use for Capitol Corridor Service for Air Quality Analysis purposes

Loco #	Name	Traction Power Engine	2015 (base)		2035 (design)		HEP Power Engine	2015 (base)		2035 (design)	
			Tier #	#	Tier #	#		Tier #	#	Tier #	#
2001	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	3	1	4-I	0
2002	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	3	1	4-I	0
2003	F59 Series 3412C	EMD710 ECO	2	1	2	0	CAT 3412	0	1	4-I	0
2004	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	4	1	4	0
2005	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	4	1	4	0
2006	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	4	1	4	0
2007	F59 Series C15	EMD710 ECO	2	1	2	0	CAT - C-15i	4-I	1	4-I	0
2008	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	4	1	4	0
2009	F59 Series C15	EMD710 ECO	2	1	2	0	CAT - C-15i	4-I	1	4-I	0
2010	F59 Series C15	EMD710 ECO	2	1	2	0	CAT - C-15i	4-I	1	4-I	0
2011	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	4	1	4	0
2012	F59 Series 3412C	EMD710 ECO	2	1	2	0	CAT 3412	0	1	4-I	0
2013	F59 Series 3412C	EMD710 ECO	2	1	2	0	CAT 3412	0	1	4-I	0
2014	F59 Series C15	EMD710 ECO	2	1	2	0	CAT - C-15i	4-I	1	4-I	0
2015	F59 Series C15	EMD710 ECO	2	1	2	0	CAT C-15	3	1	4-I	0
2051	Dash 8 Series	Gen. Elect 7FLDN	0+	1	0+	0	Part of main engine	0+	1	0+	0
2052	Dash 8 Series	Gen. Elect 7FLDN	0+	1	0+	0	Part of main engine	0+	1	0+	0
Qty. 4-7 #1-207	P42 Series	Gen. Elect. P-42	0	1	0	0	main engine	0	1	0	0
New Loco CDTXxxx	ACR-44	Cummings QSK95			4	24	AC traction part of eng. Sys			4	24
New Loco CDTXxxx	ACR-44	Cummings QSK95			4	0	AC traction part of eng. Sys			4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95			4	0	AC traction part of eng. Sys			4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95			4	0	AC traction part of eng. Sys			4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95			4	0	AC traction part of eng. Sys			4	0
New Loco CDTXxxx	ACR-44	Cummings QSK95			4	0	AC traction part of eng. Sys			4	0

Locomotive	Traction				
	Tier	2015 (base)		2035 (design)	
		#	%	#	%
F59 Series C15	2	12	67%	0	0%
F59 Series 3412C	2	3	17%	0	0%
Dash 8 Series	0+	2	11%	0	0%
P42 Series	0	1	6%	0	0%
ACR-44	4	0	0%	24	100%
Total	-	18	100%	24	100%
		0		*0*	

Locomotive	HEP				
	Tier	2015 (base)		2035 (design)	
		#	%	#	%
F59 Series C15	3	3	17%	0	0%
F59 Series C15	4-I	4	22%	0	0%
F59 Series C15	4	5	28%	0	0%
F59 Series 3412C	0	3	17%	0	0%
F59 Series 3412C	4-I	0	0%	0	0%
Dash 8 Series	0+	2	11%	0	0%
P42 Series	0	1	6%	0	0%
ACR-44	4	0	0%	24	100%
Total		18	100%	24	100%

HEP upgrade to Tier 4-I is expected to complete in March 2015, replacing the existing Tier III and the 3412 series engines
Two GE P32-8 locomotives are being currently reviewed for their potential future possible rebuild to latest EPA emissions technology available on these types of engines

2008 fleet mix is equal to 2015 mix; thereafter, new locomotives will be phased

Capitol Corridor Service Increment - Sacramento to Roseville 3rd Track Project

	Daily minutes shown for each additional train between Sacramento and Roseville inclue travel time in rolling operation and idle time												*Assumed level of Weekday service and Weekend/Holiday Schedule service per year*				
	Typical Weekday Day			Typical Weekend Day			Weekday Conversion to Daily Hours of service			Weekend/Holiday Conversion to Daily Hours of service			Weekday Ops/year	Weekend-Holiday Ops/Year	Running Time Hours/year	Idle Time Hours/Year Sac	Idle Time Hours/Year Rose
Added Trips	Running Time (min)	Idle (HEP) Time Sac (min)	Idle (HEP) Time Rose (min)	Running Time (min)	Idle (HEP) Time Sac (min)	Idle (HEP) Time Rose (min)	Running Time (hr)	Idle (HEP) Time Sac (hr)	Idle (HEP) Time Rose (hr)	Running Time (hr)	Idle (HEP) Time Sac (hr)	Idle (HEP) Time Rose (hr)	250	115	3405	-2940	3040
Trip #1	33	-30	30	33	-30	30	0.550	-0.500	0.500	0.55	-0.50	0.50					
Trip #2	33	-30	30	33	-30	30	0.550	-0.500	0.500	0.55	-0.50	0.50					
Trip #3	33	-30	30	33	-30	30	0.550	-0.500	0.500	0.55	-0.50	0.50					
Trip #4	33	-30	30	33	-30	30	0.550	-0.500	0.500	0.55	-0.50	0.50					
Trip #5	33	-30	46	33	-30	30	0.550	-0.500	0.767	0.55	-0.50	0.50					
Trip #6	33	-30	30	33	-30	30	0.550	-0.500	0.500	0.55	-0.50	0.50					
Trip #7	33	-30	30	37	-30	30	0.550	-0.500	0.500	0.62	-0.50	0.50					
Trip #8	33	-30	34	37	-30	30	0.550	-0.500	0.567	0.62	-0.50	0.50					
Trip #9	33	-30	30	37	-30	30	0.550	-0.500	0.500	0.62	-0.50	0.50					
Trip #10	34	-30	30	37	-30	30	0.567	-0.500	0.500	0.62	-0.50	0.50					
Trip #11	34	-30	30	37	-30	30	0.567	-0.500	0.500	0.62	-0.50	0.50					
Trip #12	37	-30	30	37	-30	30	0.617	-0.500	0.500	0.62	-0.50	0.50					
Trip #13	37	-30	30				0.617	-0.500	0.500								
Trip #14	37	-30	30				0.617	-0.500	0.500								
Trip #15	37	-30	30				0.617	-0.500	0.500								
Trip #16	37	-30	34				0.617	-0.500	0.567								
Trip #17	37	-30	30				0.617	-0.500	0.500								
Trip #18	37	-30	30				0.617	-0.500	0.500								
TOTALS	624	-540	564	420	-360	360	10.4	-9	9.4	7	-6	6					

Sources and Assumptions:

CCJPA is the source for running times and idle (HEP) times. These values are based on travel schedules and estimated layover hours required for each trip which vary based on the schedule.

Weekday service adds an additional 9 round trips or 18 daily trains; weekend/holiday schedules add an additional 6 round trips or 12 daily trains.

The traction, or main engine, is subject to EPA locomotive emission standards.
The HEP is subject to the ARB offroad standards. ONLY the P59 has a separate HEP engine. All other locomotives utilize the traction engine for hoteling.

Engine Tier	Power Engine (g/gal)								
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
0	10.51	178.88	26.62	6.66	6.46	0.09	10,208	0.80	0.26
0+	6.57	149.76	26.62	4.16	4.04	0.09	10,208	0.80	0.26
1	10.29	139.36	26.62	6.66	6.46	0.09	10,208	0.80	0.26
1+	6.35	139.36	26.62	4.16	4.04	0.09	10,208	0.80	0.26
2	5.69	102.96	26.62	3.74	3.63	0.09	10,208	0.80	0.26
2+	2.85	102.96	26.62	1.66	1.61	0.09	10,208	0.80	0.26
3	2.85	102.96	26.62	1.66	1.61	0.09	10208	0.80	0.26
4-I	-	-	-	-	-	-	-	-	-
4	0.88	20.80	26.62	0.31	0.30	0.09	10,208	0.80	0.26

Engine Tier	500 kW HEP Engine (g/gal) [ONLY FOR SEPARATE HEP ENGINE ON F59]								
	ROG	NOX	CO	PM10	PM2.5	SO2	CO2	CH4	N2O
0	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
0+	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
1	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
1+	0.05	0.35	0.44	0.02	0.02	0.04	8	0.00	0.00
2	0.01	0.23	0.13	0.01	0.01	0.04	9	0.00	0.00
2+	0.01	0.23	0.13	0.01	0.01	0.04	9	0.00	0.00
3	0.01	0.15	0.13	0.01	0.01	0.04	9	0.00	0.00
4-I	0.01	0.02	0.13	0.00	0.00	0.03	9	0.00	0.00
4	0.01	0.02	0.13	0.00	0.00	0.03	9	0.00	0.00

EPA 2009, Table 1 http://www.epa.gov/nonroad/locomotv/420f09025.pdf
Climate Registry http://www.theclimateregistry.org/downloads/2014/02/2014-Climate-Registry-Default-Emissions-Factors.pdf

EPA 2009 http://www.epa.gov/otaq/models/nonrdmdl/nonrdmdl2010/420r10018.pdf
See: C-I Emission Rates.xls

VOC_HC	1.053	
PM2.5_PM10	0.97	
N2O_CO2	0.000026	Climate Registry 2014
CH4_CO2	0.000057	Climate Registry 2014
bhp-hr/gal	20.8	EPA 2011

N2O_CO2 Di	2.5465E-05	Climate Registry 2014
CH4_CO2 Die	5.6807E-05	Climate Registry 2014

SO2 (g/gal) = 0.09
based on:
(fuel density) x (conversion factor) x (64 g SO2 / 32 g S) x (S content of fuel)

fuel density	3200	g/gal
conversion factor	0.978	(fraction of fuel sulfur convered to so2)
64 / 32	2	
S content of fuel	1.50E-05	15 ppm

http://www.arb.ca.gov/regact/carblohc/ruid.pdf

CO2 (g/gal) = 10208
based on:
(fuel density) x (44 g CO2 / 12 g C) x (C content of fuel)

fuel density	3200	g/gal
44 / 12	3.666666667	
C content of fuel	8.70E-01	87% by mass

1 2 3 4 5 6 7 8 9 10 1 2 3 4 5 6 7 8 9 10

Locomotive	Engine Tier	Idle-HEP Mode Fuel (gal/hr)	Traction Fuel (gal/hr)	Notes
F59 Series C15	3	21	63	HEP is separate engine (500 KW)
F59 Series C15	4-I	21	63	HEP is separate engine (500 KW)
F59 Series C15	4	21	63	HEP is separate engine (500 KW)
F59 Series 3412C	0	21	63	HEP is separate engine (500 KW)
F59 Series 3412C	4-I	21	63	HEP is separate engine (500 KW)
Dash 8 Series	0+	28	61	HEP is part of main engine
P42 Series	0	28	85	HEP is part of main engine
ACR-44	4	29	90	HEP is part of main engine

See: Locomotive Weighted Fuel Consumption Rate.xls

```
** Lakes Environmental AERMOD MPI
**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 11.2.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 7/18/2023
** FILE: D:\DOCUMENTS\ROSEVILLE TO SACRAMENTO THIRD RAIL\2023 UPDATE\AERMOD LAYOVER
CONSTUCT\AERMOD LAYOVER CONSTRUCT.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS - MITIGATED
   MODELOPT DFAULT CONC
   AVERTIME PERIOD
   URBANOPT 2500000 SACREMENTO_-ROSEVILLE-ARDEN-ARCADE_MSA
   POLLUTID DPM
   FLAGPOLE 1.80
   RUNORNOT RUN
   ERRORFIL "AERMOD LAYOVER CONSTRUCT.ERR"
CO FINISHED
**
**************************************
** AERMOD SOURCE PATHWAY
**************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
** ------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY SEPARATED VOLUME SOURCES (2W)
** LINE VOLUME SOURCE ID = SLINE21
** DESCRSRC HAUL TRUCK ROUTE
** PREFIX
** LENGTH OF SIDE = 13.32
** CONFIGURATION = SEPARATED 2W
** EMISSION RATE = 0.0000116
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 9
```

```
** 649987.745, 4291180.599, 52.57, 3.40, 12.39
** 650122.346, 4291253.260, 53.13, 3.40, 12.39
** 650180.713, 4291277.083, 53.34, 3.40, 12.39
** 650202.154, 4291285.421, 53.39, 3.40, 12.39
** 650285.535, 4291310.436, 53.65, 3.40, 12.39
** 650386.784, 4291334.259, 52.10, 3.40, 12.39
** 650471.356, 4291343.788, 49.96, 3.40, 12.39
** 650496.370, 4291355.700, 49.90, 3.40, 12.39
** 650745.323, 4291364.038, 52.75, 3.40, 12.39
** --------------------------------------------------------------------
   LOCATION L0000001     VOLUME   649993.606 4291183.763 52.59
   LOCATION L0000002     VOLUME   650017.048 4291196.418 52.69
   LOCATION L0000003     VOLUME   650040.490 4291209.072 52.79
   LOCATION L0000004     VOLUME   650063.933 4291221.727 52.89
   LOCATION L0000005     VOLUME   650087.375 4291234.382 52.98
   LOCATION L0000006     VOLUME   650110.818 4291247.037 53.08
   LOCATION L0000007     VOLUME   650134.881 4291258.376 53.18
   LOCATION L0000008     VOLUME   650159.546 4291268.443 53.26
   LOCATION L0000009     VOLUME   650184.234 4291278.452 53.35
   LOCATION L0000010     VOLUME   650209.254 4291287.551 53.41
   LOCATION L0000011     VOLUME   650234.770 4291295.206 53.49
   LOCATION L0000012     VOLUME   650260.287 4291302.861 53.57
   LOCATION L0000013     VOLUME   650285.807 4291310.500 53.65
   LOCATION L0000014     VOLUME   650311.739 4291316.601 53.25
   LOCATION L0000015     VOLUME   650337.671 4291322.703 52.85
   LOCATION L0000016     VOLUME   650363.603 4291328.805 52.45
   LOCATION L0000017     VOLUME   650389.592 4291334.575 52.03
   LOCATION L0000018     VOLUME   650416.065 4291337.558 51.36
   LOCATION L0000019     VOLUME   650442.537 4291340.541 50.69
   LOCATION L0000020     VOLUME   650469.010 4291343.524 50.02
   LOCATION L0000021     VOLUME   650493.276 4291354.226 49.91
   LOCATION L0000022     VOLUME   650519.570 4291356.477 50.17
   LOCATION L0000023     VOLUME   650546.195 4291357.368 50.47
   LOCATION L0000024     VOLUME   650572.821 4291358.260 50.78
   LOCATION L0000025     VOLUME   650599.446 4291359.152 51.08
   LOCATION L0000026     VOLUME   650626.071 4291360.044 51.38
   LOCATION L0000027     VOLUME   650652.696 4291360.935 51.69
   LOCATION L0000028     VOLUME   650679.321 4291361.827 51.99
   LOCATION L0000029     VOLUME   650705.946 4291362.719 52.30
   LOCATION L0000030     VOLUME   650732.571 4291363.611 52.60
** END OF LINE VOLUME SOURCE ID = SLINE21
** --------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY SEPARATED VOLUME SOURCES (2W)
** LINE VOLUME SOURCE ID = SLINE31
** DESCRSRC HAUL TRUCK ROUTE
** PREFIX
** LENGTH OF SIDE = 13.32
** CONFIGURATION = SEPARATED 2W
** EMISSION RATE = 0.0000116
** ELEVATED
```

```
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 12
** 650749.382, 4291365.900, 52.80, 3.40, 12.39
** 650769.869, 4291354.193, 53.32, 3.40, 12.39
** 650791.088, 4291354.193, 54.12, 3.40, 12.39
** 650851.817, 4291356.389, 57.08, 3.40, 12.39
** 650904.497, 4291360.779, 59.63, 3.40, 12.39
** 650969.616, 4291360.047, 61.96, 3.40, 12.39
** 651015.712, 4291355.657, 55.86, 3.40, 12.39
** 651047.905, 4291351.267, 55.97, 3.40, 12.39
** 651094.001, 4291343.950, 62.58, 3.40, 12.39
** 651145.218, 4291327.122, 60.86, 3.40, 12.39
** 651181.801, 4291313.220, 59.05, 3.40, 12.39
** 651213.995, 4291296.391, 56.93, 3.40, 12.39
** ----------------------------------------------------------------------
   LOCATION L0004925     VOLUME   650755.165 4291362.596 52.95
   LOCATION L0004926     VOLUME   650779.573 4291354.193 53.69
   LOCATION L0004927     VOLUME   650806.203 4291354.740 54.86
   LOCATION L0004928     VOLUME   650832.826 4291355.702 56.15
   LOCATION L0004929     VOLUME   650859.427 4291357.023 57.45
   LOCATION L0004930     VOLUME   650885.975 4291359.235 58.73
   LOCATION L0004931     VOLUME   650912.551 4291360.688 59.92
   LOCATION L0004932     VOLUME   650939.189 4291360.389 60.87
   LOCATION L0004933     VOLUME   650965.827 4291360.089 61.82
   LOCATION L0004934     VOLUME   650992.364 4291357.880 58.95
   LOCATION L0004935     VOLUME   651018.869 4291355.226 55.87
   LOCATION L0004936     VOLUME   651045.265 4291351.627 55.96
   LOCATION L0004937     VOLUME   651071.584 4291347.508 59.37
   LOCATION L0004938     VOLUME   651097.746 4291342.719 62.45
   LOCATION L0004939     VOLUME   651123.055 4291334.404 61.60
   LOCATION L0004940     VOLUME   651148.314 4291325.945 60.71
   LOCATION L0004941     VOLUME   651173.216 4291316.482 59.47
   LOCATION L0004942     VOLUME   651197.271 4291305.133 58.03
** END OF LINE VOLUME SOURCE ID = SLINE31
   LOCATION VOL41        VOLUME     649972.110  4291194.820       53.080
** DESCRSRC HAUL TRUCK ROUTE
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY SEPARATED VOLUME SOURCES (2W)
** LINE VOLUME SOURCE ID = SLINE51
** DESCRSRC MOVING TRAIN BALLAST DELIVERY
** PREFIX
** LENGTH OF SIDE = 12.00
** CONFIGURATION = SEPARATED 2W
** EMISSION RATE = 3.28E-07
** ELEVATED
** VERTICAL DIMENSION = 11.30
** SZINIT = 2.63
** NODES = 12
** 648625.012, 4291380.197, 48.69, 5.65, 11.16
```

```
** 649080.310, 4290820.972, 49.74, 5.65, 11.16
** 649175.989, 4290754.987, 49.69, 5.65, 11.16
** 649235.376, 4290725.293, 49.89, 5.65, 11.16
** 649281.565, 4290718.695, 49.68, 5.65, 11.16
** 649336.003, 4290731.892, 49.81, 5.65, 11.16
** 649395.390, 4290774.782, 50.00, 5.65, 11.16
** 649664.280, 4290984.286, 51.65, 5.65, 11.16
** 649962.864, 4291218.533, 53.58, 5.65, 11.16
** 650101.433, 4291291.117, 53.69, 5.65, 11.16
** 650320.834, 4291368.650, 53.75, 5.65, 11.16
** 650498.994, 4291401.643, 53.85, 5.65, 11.16
** ------------------------------------------------------------------
   LOCATION L0004943     VOLUME   648628.800 4291375.544 48.70
   LOCATION L0004944     VOLUME   648643.953 4291356.933 48.73
   LOCATION L0004945     VOLUME   648659.106 4291338.321 48.77
   LOCATION L0004946     VOLUME   648674.258 4291319.710 48.80
   LOCATION L0004947     VOLUME   648689.411 4291301.098 48.84
   LOCATION L0004948     VOLUME   648704.564 4291282.486 48.87
   LOCATION L0004949     VOLUME   648719.717 4291263.875 48.91
   LOCATION L0004950     VOLUME   648734.870 4291245.263 48.94
   LOCATION L0004951     VOLUME   648750.022 4291226.652 48.98
   LOCATION L0004952     VOLUME   648765.175 4291208.040 49.01
   LOCATION L0004953     VOLUME   648780.328 4291189.428 49.05
   LOCATION L0004954     VOLUME   648795.481 4291170.817 49.08
   LOCATION L0004955     VOLUME   648810.634 4291152.205 49.12
   LOCATION L0004956     VOLUME   648825.787 4291133.593 49.15
   LOCATION L0004957     VOLUME   648840.939 4291114.982 49.19
   LOCATION L0004958     VOLUME   648856.092 4291096.370 49.22
   LOCATION L0004959     VOLUME   648871.245 4291077.759 49.26
   LOCATION L0004960     VOLUME   648886.398 4291059.147 49.29
   LOCATION L0004961     VOLUME   648901.551 4291040.535 49.33
   LOCATION L0004962     VOLUME   648916.703 4291021.924 49.36
   LOCATION L0004963     VOLUME   648931.856 4291003.312 49.40
   LOCATION L0004964     VOLUME   648947.009 4290984.701 49.43
   LOCATION L0004965     VOLUME   648962.162 4290966.089 49.47
   LOCATION L0004966     VOLUME   648977.315 4290947.477 49.50
   LOCATION L0004967     VOLUME   648992.468 4290928.866 49.54
   LOCATION L0004968     VOLUME   649007.620 4290910.254 49.57
   LOCATION L0004969     VOLUME   649022.773 4290891.643 49.61
   LOCATION L0004970     VOLUME   649037.926 4290873.031 49.64
   LOCATION L0004971     VOLUME   649053.079 4290854.419 49.68
   LOCATION L0004972     VOLUME   649068.232 4290835.808 49.71
   LOCATION L0004973     VOLUME   649084.319 4290818.208 49.74
   LOCATION L0004974     VOLUME   649104.076 4290804.582 49.73
   LOCATION L0004975     VOLUME   649123.833 4290790.956 49.72
   LOCATION L0004976     VOLUME   649143.590 4290777.331 49.71
   LOCATION L0004977     VOLUME   649163.347 4290763.705 49.70
   LOCATION L0004978     VOLUME   649183.720 4290751.121 49.72
   LOCATION L0004979     VOLUME   649205.186 4290740.388 49.79
   LOCATION L0004980     VOLUME   649226.652 4290729.655 49.86
```

LOCATION L0004981 VOLUME 649249.479 4290723.278 49.83
LOCATION L0004982 VOLUME 649273.238 4290719.884 49.72
LOCATION L0004983 VOLUME 649296.715 4290722.367 49.72
LOCATION L0004984 VOLUME 649320.039 4290728.022 49.77
LOCATION L0004985 VOLUME 649342.143 4290736.326 49.83
LOCATION L0004986 VOLUME 649361.599 4290750.378 49.89
LOCATION L0004987 VOLUME 649381.055 4290764.429 49.95
LOCATION L0004988 VOLUME 649400.374 4290778.665 50.03
LOCATION L0004989 VOLUME 649419.306 4290793.416 50.15
LOCATION L0004990 VOLUME 649438.238 4290808.166 50.26
LOCATION L0004991 VOLUME 649457.170 4290822.917 50.38
LOCATION L0004992 VOLUME 649476.101 4290837.668 50.50
LOCATION L0004993 VOLUME 649495.033 4290852.418 50.61
LOCATION L0004994 VOLUME 649513.965 4290867.169 50.73
LOCATION L0004995 VOLUME 649532.897 4290881.920 50.84
LOCATION L0004996 VOLUME 649551.829 4290896.670 50.96
LOCATION L0004997 VOLUME 649570.761 4290911.421 51.08
LOCATION L0004998 VOLUME 649589.693 4290926.172 51.19
LOCATION L0004999 VOLUME 649608.625 4290940.922 51.31
LOCATION L0005000 VOLUME 649627.557 4290955.673 51.42
LOCATION L0005001 VOLUME 649646.489 4290970.424 51.54
LOCATION L0005002 VOLUME 649665.418 4290985.178 51.66
LOCATION L0005003 VOLUME 649684.300 4290999.992 51.78
LOCATION L0005004 VOLUME 649703.183 4291014.806 51.90
LOCATION L0005005 VOLUME 649722.065 4291029.620 52.02
LOCATION L0005006 VOLUME 649740.948 4291044.434 52.15
LOCATION L0005007 VOLUME 649759.830 4291059.248 52.27
LOCATION L0005008 VOLUME 649778.713 4291074.061 52.39
LOCATION L0005009 VOLUME 649797.595 4291088.875 52.51
LOCATION L0005010 VOLUME 649816.478 4291103.689 52.63
LOCATION L0005011 VOLUME 649835.360 4291118.503 52.76
LOCATION L0005012 VOLUME 649854.243 4291133.317 52.88
LOCATION L0005013 VOLUME 649873.125 4291148.131 53.00
LOCATION L0005014 VOLUME 649892.008 4291162.945 53.12
LOCATION L0005015 VOLUME 649910.890 4291177.759 53.24
LOCATION L0005016 VOLUME 649929.773 4291192.573 53.37
LOCATION L0005017 VOLUME 649948.655 4291207.386 53.49
LOCATION L0005018 VOLUME 649968.126 4291221.290 53.58
LOCATION L0005019 VOLUME 649989.386 4291232.426 53.60
LOCATION L0005020 VOLUME 650010.646 4291243.562 53.62
LOCATION L0005021 VOLUME 650031.906 4291254.699 53.63
LOCATION L0005022 VOLUME 650053.166 4291265.835 53.65
LOCATION L0005023 VOLUME 650074.426 4291276.971 53.67
LOCATION L0005024 VOLUME 650095.686 4291288.107 53.69
LOCATION L0005025 VOLUME 650117.945 4291296.952 53.69
LOCATION L0005026 VOLUME 650140.573 4291304.949 53.70
LOCATION L0005027 VOLUME 650163.202 4291312.945 53.71
LOCATION L0005028 VOLUME 650185.831 4291320.942 53.71
LOCATION L0005029 VOLUME 650208.459 4291328.939 53.72
LOCATION L0005030 VOLUME 650231.088 4291336.935 53.73

```
   LOCATION L0005031     VOLUME   650253.716 4291344.932 53.73
   LOCATION L0005032     VOLUME   650276.345 4291352.928 53.74
   LOCATION L0005033     VOLUME   650298.974 4291360.925 53.74
   LOCATION L0005034     VOLUME   650321.635 4291368.798 53.75
   LOCATION L0005035     VOLUME   650345.234 4291373.168 53.76
   LOCATION L0005036     VOLUME   650368.833 4291377.539 53.78
   LOCATION L0005037     VOLUME   650392.432 4291381.909 53.79
   LOCATION L0005038     VOLUME   650416.030 4291386.279 53.80
   LOCATION L0005039     VOLUME   650439.629 4291390.649 53.82
   LOCATION L0005040     VOLUME   650463.228 4291395.019 53.83
   LOCATION L0005041     VOLUME   650486.827 4291399.389 53.84
** END OF LINE VOLUME SOURCE ID = SLINE51
   LOCATION VOL1         VOLUME     650665.251  4291406.930       53.240
** DESCRSRC WORK AREA 1 -CONSTRUCTION EQUIPMENT TRUCKS
   LOCATION VOL2         VOLUME     650563.968  4291398.425       53.160
** DESCRSRC CONSTRUCTION EQUIPMENT EXHAUST WORK AREA #2
   LOCATION VOL3         VOLUME     650456.370  4291399.520       53.930
** DESCRSRC WORK AREA #3 CONSTRUCTION EQUIPMENT EXHAUST
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE43
** DESCRSRC CONSTRUCTION EQUIPMENT WORK AREA #3
** PREFIX
** LENGTH OF SIDE = 87.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000159
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 8
** 650396.283, 4291415.230, 53.09, 3.40, 40.47
** 650339.492, 4291407.868, 54.51, 3.40, 40.47
** 650291.115, 4291397.351, 54.58, 3.40, 40.47
** 650226.962, 4291374.214, 54.26, 3.40, 40.47
** 650171.223, 4291357.387, 54.56, 3.40, 40.47
** 650088.140, 4291323.733, 54.83, 3.40, 40.47
** 649981.921, 4291266.943, 52.81, 3.40, 40.47
** 649931.440, 4291236.444, 52.99, 3.40, 40.47
** ----------------------------------------------------------------
   LOCATION L0005042     VOLUME   650353.144 4291409.638 54.17
   LOCATION L0005043     VOLUME   650268.796 4291389.301 54.47
   LOCATION L0005044     VOLUME   650186.248 4291361.923 54.48
   LOCATION L0005045     VOLUME   650105.134 4291330.617 54.77
   LOCATION L0005046     VOLUME   650027.586 4291291.358 53.68
   LOCATION L0005047     VOLUME   649951.778 4291248.731 52.92
** END OF LINE VOLUME SOURCE ID = SLINE43
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE44
** DESCRSRC CONSTRUCTION EQUIPMENT WORK AREA #3
```

```
** PREFIX
** LENGTH OF SIDE = 57.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000159
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 3
** 649898.118, 4291201.738, 52.60, 3.40, 26.51
** 649581.371, 4290941.907, 50.98, 3.40, 26.51
** 649582.608, 4290945.618, 50.95, 3.40, 26.51
** ----------------------------------------------------------------
   LOCATION L0005048     VOLUME   649876.084 4291183.663 52.49
   LOCATION L0005049     VOLUME   649832.014 4291147.512 52.26
   LOCATION L0005050     VOLUME   649787.945 4291111.362 52.04
   LOCATION L0005051     VOLUME   649743.875 4291075.211 51.81
   LOCATION L0005052     VOLUME   649699.806 4291039.060 51.59
   LOCATION L0005053     VOLUME   649655.736 4291002.909 51.36
   LOCATION L0005054     VOLUME   649611.667 4290966.758 51.13
** END OF LINE VOLUME SOURCE ID = SLINE44
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE45
** DESCRSRC CONSTRUCTION EQUIPMENT EXHAUST TO YOSEMITE AVE
** PREFIX
** LENGTH OF SIDE = 79.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000159
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 2
** 649582.567, 4290938.264, 50.99, 3.40, 36.74
** 649458.557, 4290838.151, 50.39, 3.40, 36.74
** ----------------------------------------------------------------
   LOCATION L0005055     VOLUME   649551.832 4290913.452 50.84
   LOCATION L0005056     VOLUME   649490.363 4290863.828 50.54
** END OF LINE VOLUME SOURCE ID = SLINE45
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE46
** DESCRSRC CONSTRUCITON EQUIPMENT EXHASUT TO Y
** PREFIX
** LENGTH OF SIDE = 50.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000159
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 2
```

```
** 649445.530, 4290815.617, 50.23, 3.40, 23.26
** 649303.390, 4290698.508, 49.82, 3.40, 23.26
** ----------------------------------------------------------------
   LOCATION L0005057     VOLUME   649426.235 4290799.720 50.17
   LOCATION L0005058     VOLUME   649387.646 4290767.926 50.06
   LOCATION L0005059     VOLUME   649349.056 4290736.133 49.95
   LOCATION L0005060     VOLUME   649310.467 4290704.339 49.84
** END OF LINE VOLUME SOURCE ID = SLINE46
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE47
** DESCRSRC CONSTRUCTION EQUIPMENT TO SOUTH END OF WORK AREA
** PREFIX
** LENGTH OF SIDE = 25.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000159
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 2
** 649138.007, 4290774.495, 49.32, 3.40, 11.63
** 649266.737, 4290695.826, 49.56, 3.40, 11.63
** ----------------------------------------------------------------
   LOCATION L0005061     VOLUME   649148.673 4290767.977 49.34
   LOCATION L0005062     VOLUME   649170.005 4290754.941 49.38
   LOCATION L0005063     VOLUME   649191.337 4290741.904 49.42
   LOCATION L0005064     VOLUME   649212.669 4290728.868 49.46
   LOCATION L0005065     VOLUME   649234.001 4290715.832 49.50
   LOCATION L0005066     VOLUME   649255.333 4290702.796 49.54
** END OF LINE VOLUME SOURCE ID = SLINE47
   LOCATION VOL12        VOLUME     650665.251  4291406.930       53.240
** DESCRSRC WORK AREA 1 -CONSTRUCTION PICKUP TRUCKS
   LOCATION VOL22        VOLUME     650563.968  4291398.425       53.160
** DESCRSRC CONSTRUCTION EQUIPMENT PICKUP EXHAUST WORK AREA #2
   LOCATION VOL32        VOLUME     650456.370  4291399.520       53.930
** DESCRSRC WORK AREA #3 CONSTRUCTION PICKUP TRUCK EXHAUST
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE432
** DESCRSRC CONSTRUCTION PICKUP TRUCK WORK AREA #3
** PREFIX
** LENGTH OF SIDE = 87.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 8
** 650396.283, 4291415.230, 53.09, 1.30, 40.47
** 650339.492, 4291407.868, 54.51, 1.30, 40.47
```

```
** 650291.115, 4291397.351, 54.58, 1.30, 40.47
** 650226.962, 4291374.214, 54.26, 1.30, 40.47
** 650171.223, 4291357.387, 54.56, 1.30, 40.47
** 650088.140, 4291323.733, 54.83, 1.30, 40.47
** 649981.921, 4291266.943, 52.81, 1.30, 40.47
** 649931.440, 4291236.444, 52.99, 1.30, 40.47
** ----------------------------------------------------------------------
   LOCATION L0005067     VOLUME   650353.144 4291409.638 54.17
   LOCATION L0005068     VOLUME   650268.796 4291389.301 54.47
   LOCATION L0005069     VOLUME   650186.248 4291361.923 54.48
   LOCATION L0005070     VOLUME   650105.134 4291330.617 54.77
   LOCATION L0005071     VOLUME   650027.586 4291291.358 53.68
   LOCATION L0005072     VOLUME   649951.778 4291248.731 52.92
** END OF LINE VOLUME SOURCE ID = SLINE432
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE444
** DESCRSRC CONSTRUCTION PICKUP TRUCK WORK AREA #3
** PREFIX
** LENGTH OF SIDE = 57.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 3
** 649898.118, 4291201.738, 52.60, 1.30, 26.51
** 649581.371, 4290941.907, 50.98, 1.30, 26.51
** 649582.608, 4290945.618, 50.95, 1.30, 26.51
** ----------------------------------------------------------------------
   LOCATION L0005073     VOLUME   649876.084 4291183.663 52.49
   LOCATION L0005074     VOLUME   649832.014 4291147.512 52.26
   LOCATION L0005075     VOLUME   649787.945 4291111.362 52.04
   LOCATION L0005076     VOLUME   649743.875 4291075.211 51.81
   LOCATION L0005077     VOLUME   649699.806 4291039.060 51.59
   LOCATION L0005078     VOLUME   649655.736 4291002.909 51.36
   LOCATION L0005079     VOLUME   649611.667 4290966.758 51.13
** END OF LINE VOLUME SOURCE ID = SLINE444
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE452
** DESCRSRC CONSTRUCTION PICKUP TRUCK EXHAUST TO YOSEMITE AVE
** PREFIX
** LENGTH OF SIDE = 79.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 2
```

```
** 649582.567, 4290938.264, 50.99, 1.30, 36.74
** 649458.557, 4290838.151, 50.39, 1.30, 36.74
** ----------------------------------------------------------------
   LOCATION L0005080     VOLUME   649551.832 4290913.452 50.84
   LOCATION L0005081     VOLUME   649490.363 4290863.828 50.54
** END OF LINE VOLUME SOURCE ID = SLINE452
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE462
** DESCRSRC CONSTRUCITON PICKUP TUCK EXHASUT TO Y
** PREFIX
** LENGTH OF SIDE = 50.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 2
** 649445.530, 4290815.617, 50.23, 1.30, 23.26
** 649303.390, 4290698.508, 49.82, 1.30, 23.26
** ----------------------------------------------------------------
   LOCATION L0005082     VOLUME   649426.235 4290799.720 50.17
   LOCATION L0005083     VOLUME   649387.646 4290767.926 50.06
   LOCATION L0005084     VOLUME   649349.056 4290736.133 49.95
   LOCATION L0005085     VOLUME   649310.467 4290704.339 49.84
** END OF LINE VOLUME SOURCE ID = SLINE462
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE472
** DESCRSRC CONSTRUCTION PICKUP TRUCK TO SOUTH END OF WORK AREA
** PREFIX
** LENGTH OF SIDE = 25.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 2
** 649138.007, 4290774.495, 49.32, 1.30, 11.63
** 649266.737, 4290695.826, 49.56, 1.30, 11.63
** ----------------------------------------------------------------
   LOCATION L0005086     VOLUME   649148.673 4290767.977 49.34
   LOCATION L0005087     VOLUME   649170.005 4290754.941 49.38
   LOCATION L0005088     VOLUME   649191.337 4290741.904 49.42
   LOCATION L0005089     VOLUME   649212.669 4290728.868 49.46
   LOCATION L0005090     VOLUME   649234.001 4290715.832 49.50
   LOCATION L0005091     VOLUME   649255.333 4290702.796 49.54
** END OF LINE VOLUME SOURCE ID = SLINE472
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE21
```

```
   SRCPARAM L0000001     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000002     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000003     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000004     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000005     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000006     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000007     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000008     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000009     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000010     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000011     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000012     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000013     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000014     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000015     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000016     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000017     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000018     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000019     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000020     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000021     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000022     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000023     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000024     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000025     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000026     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000027     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000028     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000029     0.0000003867      3.40     12.39      1.58
   SRCPARAM L0000030     0.0000003867      3.40     12.39      1.58
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE31
   SRCPARAM L0004925     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004926     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004927     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004928     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004929     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004930     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004931     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004932     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004933     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004934     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004935     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004936     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004937     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004938     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004939     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004940     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004941     0.0000006444      3.40     12.39      1.58
   SRCPARAM L0004942     0.0000006444      3.40     12.39      1.58
```

```
** ----------------------------------------------------------------------
   SRCPARAM VOL41        0.0000116     3.400     3.951     3.160
** LINE VOLUME SOURCE ID = SLINE51
   SRCPARAM L0004943     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004944     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004945     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004946     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004947     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004948     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004949     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004950     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004951     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004952     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004953     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004954     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004955     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004956     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004957     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004958     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004959     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004960     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004961     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004962     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004963     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004964     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004965     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004966     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004967     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004968     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004969     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004970     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004971     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004972     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004973     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004974     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004975     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004976     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004977     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004978     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004979     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004980     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004981     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004982     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004983     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004984     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004985     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004986     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004987     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004988     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004989     0.000000003313      5.65     11.16      2.63
```

```
SRCPARAM L0004990     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004991     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004992     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004993     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004994     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004995     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004996     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004997     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004998     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004999     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005000     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005001     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005002     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005003     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005004     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005005     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005006     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005007     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005008     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005009     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005010     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005011     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005012     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005013     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005014     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005015     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005016     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005017     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005018     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005019     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005020     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005021     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005022     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005023     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005024     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005025     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005026     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005027     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005028     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005029     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005030     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005031     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005032     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005033     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005034     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005035     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005036     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005037     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005038     0.000000003313      5.65     11.16      2.63
SRCPARAM L0005039     0.000000003313      5.65     11.16      2.63
```

```
   SRCPARAM L0005040     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0005041     0.000000003313      5.65     11.16      2.63
** --------------------------------------------------------------------
   SRCPARAM VOL1         0.0000159     3.400    11.628     3.160
   SRCPARAM VOL2         0.0000159     3.400    20.233     3.160
   SRCPARAM VOL3         0.0000159     3.400    15.116     3.160
** LINE VOLUME SOURCE ID = SLINE43
   SRCPARAM L0005042     0.00000265      3.40     40.47      1.58
   SRCPARAM L0005043     0.00000265      3.40     40.47      1.58
   SRCPARAM L0005044     0.00000265      3.40     40.47      1.58
   SRCPARAM L0005045     0.00000265      3.40     40.47      1.58
   SRCPARAM L0005046     0.00000265      3.40     40.47      1.58
   SRCPARAM L0005047     0.00000265      3.40     40.47      1.58
** --------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE44
   SRCPARAM L0005048     0.000002271      3.40     26.51      1.58
   SRCPARAM L0005049     0.000002271      3.40     26.51      1.58
   SRCPARAM L0005050     0.000002271      3.40     26.51      1.58
   SRCPARAM L0005051     0.000002271      3.40     26.51      1.58
   SRCPARAM L0005052     0.000002271      3.40     26.51      1.58
   SRCPARAM L0005053     0.000002271      3.40     26.51      1.58
   SRCPARAM L0005054     0.000002271      3.40     26.51      1.58
** --------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE45
   SRCPARAM L0005055     0.00000795      3.40     36.74      1.58
   SRCPARAM L0005056     0.00000795      3.40     36.74      1.58
** --------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE46
   SRCPARAM L0005057     0.000003975      3.40     23.26      1.58
   SRCPARAM L0005058     0.000003975      3.40     23.26      1.58
   SRCPARAM L0005059     0.000003975      3.40     23.26      1.58
   SRCPARAM L0005060     0.000003975      3.40     23.26      1.58
** --------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE47
   SRCPARAM L0005061     0.00000265      3.40     11.63      1.58
   SRCPARAM L0005062     0.00000265      3.40     11.63      1.58
   SRCPARAM L0005063     0.00000265      3.40     11.63      1.58
   SRCPARAM L0005064     0.00000265      3.40     11.63      1.58
   SRCPARAM L0005065     0.00000265      3.40     11.63      1.58
   SRCPARAM L0005066     0.00000265      3.40     11.63      1.58
** --------------------------------------------------------------------
   SRCPARAM VOL12              0.0     1.300    11.628     1.210
   SRCPARAM VOL22              0.0     1.300    20.233     1.210
   SRCPARAM VOL32              0.0     1.300    15.116     1.210
** LINE VOLUME SOURCE ID = SLINE432
   SRCPARAM L0005067           0.0      1.30     40.47      0.60
   SRCPARAM L0005068           0.0      1.30     40.47      0.60
   SRCPARAM L0005069           0.0      1.30     40.47      0.60
   SRCPARAM L0005070           0.0      1.30     40.47      0.60
   SRCPARAM L0005071           0.0      1.30     40.47      0.60
```

```
   SRCPARAM L0005072           0.0      1.30     40.47      0.60
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE444
   SRCPARAM L0005073           0.0      1.30     26.51      0.60
   SRCPARAM L0005074           0.0      1.30     26.51      0.60
   SRCPARAM L0005075           0.0      1.30     26.51      0.60
   SRCPARAM L0005076           0.0      1.30     26.51      0.60
   SRCPARAM L0005077           0.0      1.30     26.51      0.60
   SRCPARAM L0005078           0.0      1.30     26.51      0.60
   SRCPARAM L0005079           0.0      1.30     26.51      0.60
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE452
   SRCPARAM L0005080           0.0      1.30     36.74      0.60
   SRCPARAM L0005081           0.0      1.30     36.74      0.60
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE462
   SRCPARAM L0005082           0.0      1.30     23.26      0.60
   SRCPARAM L0005083           0.0      1.30     23.26      0.60
   SRCPARAM L0005084           0.0      1.30     23.26      0.60
   SRCPARAM L0005085           0.0      1.30     23.26      0.60
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE472
   SRCPARAM L0005086           0.0      1.30     11.63      0.60
   SRCPARAM L0005087           0.0      1.30     11.63      0.60
   SRCPARAM L0005088           0.0      1.30     11.63      0.60
   SRCPARAM L0005089           0.0      1.30     11.63      0.60
   SRCPARAM L0005090           0.0      1.30     11.63      0.60
   SRCPARAM L0005091           0.0      1.30     11.63      0.60
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "AERMOD LAYOVER CONSTRUCT.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\MET DATA\14-18.SFC"
   PROFFILE "..\..\MET DATA\14-18.PFL"
```

```
   SURFDATA 93225 2014
   UAIRDATA 23230 2014 OAKLAND/WSO_AP
   PROFBASE 8.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
** AUTO-GENERATED PLOTFILES
   PLOTFILE   PERIOD ALL "AERMOD LAYOVER CONSTRUCT UNMITIGATED\PE00GALL.PLT" 31
   FILEFORM EXP
   SUMMFILE "AERMOD LAYOVER CONSTRUCT.SUM"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of           30 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 SO W320     690        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     691        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     692        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     694        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     695        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     696        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     697        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     698        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     699        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
```

```
 SO W320     702        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     703        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     704        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     705        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     706        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     707        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     708        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     711        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     712        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     715        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     716        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     717        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     718        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     721        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     722        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     723        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     724        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     725        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     726        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 ME W186     752       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
 ME W187     752       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
```

```
                        ***       17:16:07

                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                            ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for   204 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2500000.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Accepts FLAGPOLE Receptor . Heights.
      * The User Specified a Pollutant Type of: DPM

 **Model Calculates PERIOD Averages Only

 **This Run Includes:    204 Source(s);       1 Source Group(s); and     329
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:    204 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
                 and:      0 SWPOINT source(s)


 **Model Set To Continue RUNning After the Setup Testing.
```

```
 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

          NOTE: Option for EXPonential format used in formatted output result files
(FILEFORM Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     8.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                 Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   AERMOD LAYOVER CONSTRUCT.ERR

 **File for Summary of Results:   AERMOD LAYOVER CONSTRUCT.SUM

 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***        17:16:07

                                    PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
```

ID	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	BY
L0000001	0	0.38670E-06	649993.6	4291183.8	52.6	3.40	12.39	1.58	YES
L0000002	0	0.38670E-06	650017.0	4291196.4	52.7	3.40	12.39	1.58	YES
L0000003	0	0.38670E-06	650040.5	4291209.1	52.8	3.40	12.39	1.58	YES
L0000004	0	0.38670E-06	650063.9	4291221.7	52.9	3.40	12.39	1.58	YES
L0000005	0	0.38670E-06	650087.4	4291234.4	53.0	3.40	12.39	1.58	YES
L0000006	0	0.38670E-06	650110.8	4291247.0	53.1	3.40	12.39	1.58	YES
L0000007	0	0.38670E-06	650134.9	4291258.4	53.2	3.40	12.39	1.58	YES
L0000008	0	0.38670E-06	650159.5	4291268.4	53.3	3.40	12.39	1.58	YES
L0000009	0	0.38670E-06	650184.2	4291278.5	53.3	3.40	12.39	1.58	YES
L0000010	0	0.38670E-06	650209.3	4291287.6	53.4	3.40	12.39	1.58	YES
L0000011	0	0.38670E-06	650234.8	4291295.2	53.5	3.40	12.39	1.58	YES
L0000012	0	0.38670E-06	650260.3	4291302.9	53.6	3.40	12.39	1.58	YES
L0000013	0	0.38670E-06	650285.8	4291310.5	53.6	3.40	12.39	1.58	YES
L0000014	0	0.38670E-06	650311.7	4291316.6	53.2	3.40	12.39	1.58	YES
L0000015	0	0.38670E-06	650337.7	4291322.7	52.8	3.40	12.39	1.58	YES
L0000016	0	0.38670E-06	650363.6	4291328.8	52.4	3.40	12.39	1.58	YES
L0000017	0	0.38670E-06	650389.6	4291334.6	52.0	3.40	12.39	1.58	YES
L0000018	0	0.38670E-06	650416.1	4291337.6	51.4	3.40	12.39	1.58	YES
L0000019	0	0.38670E-06	650442.5	4291340.5	50.7	3.40	12.39	1.58	YES
L0000020	0	0.38670E-06	650469.0	4291343.5	50.0	3.40	12.39	1.58	YES
L0000021	0	0.38670E-06	650493.3	4291354.2	49.9	3.40	12.39	1.58	YES
L0000022	0	0.38670E-06	650519.6	4291356.5	50.2	3.40	12.39	1.58	YES
L0000023	0	0.38670E-06	650546.2	4291357.4	50.5	3.40	12.39		

```
1.58     YES
 L0000024         0   0.38670E-06  650572.8 4291358.3    50.8     3.40    12.39
1.58     YES
 L0000025         0   0.38670E-06  650599.4 4291359.2    51.1     3.40    12.39
1.58     YES
 L0000026         0   0.38670E-06  650626.1 4291360.0    51.4     3.40    12.39
1.58     YES
 L0000027         0   0.38670E-06  650652.7 4291360.9    51.7     3.40    12.39
1.58     YES
 L0000028         0   0.38670E-06  650679.3 4291361.8    52.0     3.40    12.39
1.58     YES
 L0000029         0   0.38670E-06  650705.9 4291362.7    52.3     3.40    12.39
1.58     YES
 L0000030         0   0.38670E-06  650732.6 4291363.6    52.6     3.40    12.39
1.58     YES
 L0004925         0   0.64440E-06  650755.2 4291362.6    52.9     3.40    12.39
1.58     YES
 L0004926         0   0.64440E-06  650779.6 4291354.2    53.7     3.40    12.39
1.58     YES
 L0004927         0   0.64440E-06  650806.2 4291354.7    54.9     3.40    12.39
1.58     YES
 L0004928         0   0.64440E-06  650832.8 4291355.7    56.1     3.40    12.39
1.58     YES
 L0004929         0   0.64440E-06  650859.4 4291357.0    57.4     3.40    12.39
1.58     YES
 L0004930         0   0.64440E-06  650886.0 4291359.2    58.7     3.40    12.39
1.58     YES
 L0004931         0   0.64440E-06  650912.6 4291360.7    59.9     3.40    12.39
1.58     YES
 L0004932         0   0.64440E-06  650939.2 4291360.4    60.9     3.40    12.39
1.58     YES
 L0004933         0   0.64440E-06  650965.8 4291360.1    61.8     3.40    12.39
1.58     YES
 L0004934         0   0.64440E-06  650992.4 4291357.9    58.9     3.40    12.39
1.58     YES
↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***       07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***       17:16:07

                                   PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
```

ID	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	BY
L0004935	0	0.64440E-06	651018.9	4291355.2	55.9	3.40	12.39	1.58	YES
L0004936	0	0.64440E-06	651045.3	4291351.6	56.0	3.40	12.39	1.58	YES
L0004937	0	0.64440E-06	651071.6	4291347.5	59.4	3.40	12.39	1.58	YES
L0004938	0	0.64440E-06	651097.7	4291342.7	62.4	3.40	12.39	1.58	YES
L0004939	0	0.64440E-06	651123.1	4291334.4	61.6	3.40	12.39	1.58	YES
L0004940	0	0.64440E-06	651148.3	4291325.9	60.7	3.40	12.39	1.58	YES
L0004941	0	0.64440E-06	651173.2	4291316.5	59.5	3.40	12.39	1.58	YES
L0004942	0	0.64440E-06	651197.3	4291305.1	58.0	3.40	12.39	1.58	YES
VOL41	0	0.11600E-04	649972.1	4291194.8	53.1	3.40	3.95	3.16	YES
L0004943	0	0.33130E-08	648628.8	4291375.5	48.7	5.65	11.16	2.63	YES
L0004944	0	0.33130E-08	648644.0	4291356.9	48.7	5.65	11.16	2.63	YES
L0004945	0	0.33130E-08	648659.1	4291338.3	48.8	5.65	11.16	2.63	YES
L0004946	0	0.33130E-08	648674.3	4291319.7	48.8	5.65	11.16	2.63	YES
L0004947	0	0.33130E-08	648689.4	4291301.1	48.8	5.65	11.16	2.63	YES
L0004948	0	0.33130E-08	648704.6	4291282.5	48.9	5.65	11.16	2.63	YES
L0004949	0	0.33130E-08	648719.7	4291263.9	48.9	5.65	11.16	2.63	YES
L0004950	0	0.33130E-08	648734.9	4291245.3	48.9	5.65	11.16	2.63	YES
L0004951	0	0.33130E-08	648750.0	4291226.7	49.0	5.65	11.16	2.63	YES
L0004952	0	0.33130E-08	648765.2	4291208.0	49.0	5.65	11.16	2.63	YES
L0004953	0	0.33130E-08	648780.3	4291189.4	49.0	5.65	11.16	2.63	YES
L0004954	0	0.33130E-08	648795.5	4291170.8	49.1	5.65	11.16	2.63	YES
L0004955	0	0.33130E-08	648810.6	4291152.2	49.1	5.65	11.16	2.63	YES
L0004956	0	0.33130E-08	648825.8	4291133.6	49.1	5.65	11.16		

```
2.63     YES
 L0004957         0   0.33130E-08  648840.9 4291115.0    49.2     5.65    11.16
2.63     YES
 L0004958         0   0.33130E-08  648856.1 4291096.4    49.2     5.65    11.16
2.63     YES
 L0004959         0   0.33130E-08  648871.2 4291077.8    49.3     5.65    11.16
2.63     YES
 L0004960         0   0.33130E-08  648886.4 4291059.1    49.3     5.65    11.16
2.63     YES
 L0004961         0   0.33130E-08  648901.6 4291040.5    49.3     5.65    11.16
2.63     YES
 L0004962         0   0.33130E-08  648916.7 4291021.9    49.4     5.65    11.16
2.63     YES
 L0004963         0   0.33130E-08  648931.9 4291003.3    49.4     5.65    11.16
2.63     YES
 L0004964         0   0.33130E-08  648947.0 4290984.7    49.4     5.65    11.16
2.63     YES
 L0004965         0   0.33130E-08  648962.2 4290966.1    49.5     5.65    11.16
2.63     YES
 L0004966         0   0.33130E-08  648977.3 4290947.5    49.5     5.65    11.16
2.63     YES
 L0004967         0   0.33130E-08  648992.5 4290928.9    49.5     5.65    11.16
2.63     YES
 L0004968         0   0.33130E-08  649007.6 4290910.3    49.6     5.65    11.16
2.63     YES
 L0004969         0   0.33130E-08  649022.8 4290891.6    49.6     5.65    11.16
2.63     YES
 L0004970         0   0.33130E-08  649037.9 4290873.0    49.6     5.65    11.16
2.63     YES
 L0004971         0   0.33130E-08  649053.1 4290854.4    49.7     5.65    11.16
2.63     YES
 L0004972         0   0.33130E-08  649068.2 4290835.8    49.7     5.65    11.16
2.63     YES
 L0004973         0   0.33130E-08  649084.3 4290818.2    49.7     5.65    11.16
2.63     YES
↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***       07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***       17:16:07

                                   PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
```

ID	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	BY
L0004974	0	0.33130E-08	649104.1	4290804.6	49.7	5.65	11.16	2.63	YES
L0004975	0	0.33130E-08	649123.8	4290791.0	49.7	5.65	11.16	2.63	YES
L0004976	0	0.33130E-08	649143.6	4290777.3	49.7	5.65	11.16	2.63	YES
L0004977	0	0.33130E-08	649163.3	4290763.7	49.7	5.65	11.16	2.63	YES
L0004978	0	0.33130E-08	649183.7	4290751.1	49.7	5.65	11.16	2.63	YES
L0004979	0	0.33130E-08	649205.2	4290740.4	49.8	5.65	11.16	2.63	YES
L0004980	0	0.33130E-08	649226.7	4290729.7	49.9	5.65	11.16	2.63	YES
L0004981	0	0.33130E-08	649249.5	4290723.3	49.8	5.65	11.16	2.63	YES
L0004982	0	0.33130E-08	649273.2	4290719.9	49.7	5.65	11.16	2.63	YES
L0004983	0	0.33130E-08	649296.7	4290722.4	49.7	5.65	11.16	2.63	YES
L0004984	0	0.33130E-08	649320.0	4290728.0	49.8	5.65	11.16	2.63	YES
L0004985	0	0.33130E-08	649342.1	4290736.3	49.8	5.65	11.16	2.63	YES
L0004986	0	0.33130E-08	649361.6	4290750.4	49.9	5.65	11.16	2.63	YES
L0004987	0	0.33130E-08	649381.1	4290764.4	49.9	5.65	11.16	2.63	YES
L0004988	0	0.33130E-08	649400.4	4290778.7	50.0	5.65	11.16	2.63	YES
L0004989	0	0.33130E-08	649419.3	4290793.4	50.1	5.65	11.16	2.63	YES
L0004990	0	0.33130E-08	649438.2	4290808.2	50.3	5.65	11.16	2.63	YES
L0004991	0	0.33130E-08	649457.2	4290822.9	50.4	5.65	11.16	2.63	YES
L0004992	0	0.33130E-08	649476.1	4290837.7	50.5	5.65	11.16	2.63	YES
L0004993	0	0.33130E-08	649495.0	4290852.4	50.6	5.65	11.16	2.63	YES
L0004994	0	0.33130E-08	649514.0	4290867.2	50.7	5.65	11.16	2.63	YES
L0004995	0	0.33130E-08	649532.9	4290881.9	50.8	5.65	11.16	2.63	YES
L0004996	0	0.33130E-08	649551.8	4290896.7	51.0	5.65	11.16		

2.63 YES
L0004997 0 0.33130E-08 649570.8 4290911.4 51.1 5.65 11.16
2.63 YES
L0004998 0 0.33130E-08 649589.7 4290926.2 51.2 5.65 11.16
2.63 YES
L0004999 0 0.33130E-08 649608.6 4290940.9 51.3 5.65 11.16
2.63 YES
L0005000 0 0.33130E-08 649627.6 4290955.7 51.4 5.65 11.16
2.63 YES
L0005001 0 0.33130E-08 649646.5 4290970.4 51.5 5.65 11.16
2.63 YES
L0005002 0 0.33130E-08 649665.4 4290985.2 51.7 5.65 11.16
2.63 YES
L0005003 0 0.33130E-08 649684.3 4291000.0 51.8 5.65 11.16
2.63 YES
L0005004 0 0.33130E-08 649703.2 4291014.8 51.9 5.65 11.16
2.63 YES
L0005005 0 0.33130E-08 649722.1 4291029.6 52.0 5.65 11.16
2.63 YES
L0005006 0 0.33130E-08 649740.9 4291044.4 52.1 5.65 11.16
2.63 YES
L0005007 0 0.33130E-08 649759.8 4291059.2 52.3 5.65 11.16
2.63 YES
L0005008 0 0.33130E-08 649778.7 4291074.1 52.4 5.65 11.16
2.63 YES
L0005009 0 0.33130E-08 649797.6 4291088.9 52.5 5.65 11.16
2.63 YES
L0005010 0 0.33130E-08 649816.5 4291103.7 52.6 5.65 11.16
2.63 YES
L0005011 0 0.33130E-08 649835.4 4291118.5 52.8 5.65 11.16
2.63 YES
L0005012 0 0.33130E-08 649854.2 4291133.3 52.9 5.65 11.16
2.63 YES
L0005013 0 0.33130E-08 649873.1 4291148.1 53.0 5.65 11.16
2.63 YES

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE	NUMBER PART.	EMISSION RATE (GRAMS/SEC)	X	Y	BASE ELEV.	RELEASE HEIGHT	INIT. SY	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY

ID	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	BY
L0005014	0	0.33130E-08	649892.0	4291162.9	53.1	5.65	11.16	2.63	YES
L0005015	0	0.33130E-08	649910.9	4291177.8	53.2	5.65	11.16	2.63	YES
L0005016	0	0.33130E-08	649929.8	4291192.6	53.4	5.65	11.16	2.63	YES
L0005017	0	0.33130E-08	649948.7	4291207.4	53.5	5.65	11.16	2.63	YES
L0005018	0	0.33130E-08	649968.1	4291221.3	53.6	5.65	11.16	2.63	YES
L0005019	0	0.33130E-08	649989.4	4291232.4	53.6	5.65	11.16	2.63	YES
L0005020	0	0.33130E-08	650010.6	4291243.6	53.6	5.65	11.16	2.63	YES
L0005021	0	0.33130E-08	650031.9	4291254.7	53.6	5.65	11.16	2.63	YES
L0005022	0	0.33130E-08	650053.2	4291265.8	53.6	5.65	11.16	2.63	YES
L0005023	0	0.33130E-08	650074.4	4291277.0	53.7	5.65	11.16	2.63	YES
L0005024	0	0.33130E-08	650095.7	4291288.1	53.7	5.65	11.16	2.63	YES
L0005025	0	0.33130E-08	650117.9	4291297.0	53.7	5.65	11.16	2.63	YES
L0005026	0	0.33130E-08	650140.6	4291304.9	53.7	5.65	11.16	2.63	YES
L0005027	0	0.33130E-08	650163.2	4291312.9	53.7	5.65	11.16	2.63	YES
L0005028	0	0.33130E-08	650185.8	4291320.9	53.7	5.65	11.16	2.63	YES
L0005029	0	0.33130E-08	650208.5	4291328.9	53.7	5.65	11.16	2.63	YES
L0005030	0	0.33130E-08	650231.1	4291336.9	53.7	5.65	11.16	2.63	YES
L0005031	0	0.33130E-08	650253.7	4291344.9	53.7	5.65	11.16	2.63	YES
L0005032	0	0.33130E-08	650276.3	4291352.9	53.7	5.65	11.16	2.63	YES
L0005033	0	0.33130E-08	650299.0	4291360.9	53.7	5.65	11.16	2.63	YES
L0005034	0	0.33130E-08	650321.6	4291368.8	53.8	5.65	11.16	2.63	YES
L0005035	0	0.33130E-08	650345.2	4291373.2	53.8	5.65	11.16	2.63	YES
L0005036	0	0.33130E-08	650368.8	4291377.5	53.8	5.65	11.16		

```
2.63     YES
 L0005037         0   0.33130E-08  650392.4 4291381.9    53.8     5.65    11.16
2.63     YES
 L0005038         0   0.33130E-08  650416.0 4291386.3    53.8     5.65    11.16
2.63     YES
 L0005039         0   0.33130E-08  650439.6 4291390.6    53.8     5.65    11.16
2.63     YES
 L0005040         0   0.33130E-08  650463.2 4291395.0    53.8     5.65    11.16
2.63     YES
 L0005041         0   0.33130E-08  650486.8 4291399.4    53.8     5.65    11.16
2.63     YES
 VOL1             0   0.15900E-04  650665.3 4291406.9    53.2     3.40    11.63
3.16     YES
 VOL2             0   0.15900E-04  650564.0 4291398.4    53.2     3.40    20.23
3.16     YES
 VOL3             0   0.15900E-04  650456.4 4291399.5    53.9     3.40    15.12
3.16     YES
 L0005042         0   0.26500E-05  650353.1 4291409.6    54.2     3.40    40.47
1.58     YES
 L0005043         0   0.26500E-05  650268.8 4291389.3    54.5     3.40    40.47
1.58     YES
 L0005044         0   0.26500E-05  650186.2 4291361.9    54.5     3.40    40.47
1.58     YES
 L0005045         0   0.26500E-05  650105.1 4291330.6    54.8     3.40    40.47
1.58     YES
 L0005046         0   0.26500E-05  650027.6 4291291.4    53.7     3.40    40.47
1.58     YES
 L0005047         0   0.26500E-05  649951.8 4291248.7    52.9     3.40    40.47
1.58     YES
 L0005048         0   0.22710E-05  649876.1 4291183.7    52.5     3.40    26.51
1.58     YES
 L0005049         0   0.22710E-05  649832.0 4291147.5    52.3     3.40    26.51
1.58     YES
 L0005050         0   0.22710E-05  649787.9 4291111.4    52.0     3.40    26.51
1.58     YES
↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***       07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***       17:16:07

                                   PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
```

ID	CATS.		(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	(METERS)	BY
L0005051	0	0.22710E-05	649743.9	4291075.2	51.8	3.40	26.51	1.58	YES
L0005052	0	0.22710E-05	649699.8	4291039.1	51.6	3.40	26.51	1.58	YES
L0005053	0	0.22710E-05	649655.7	4291002.9	51.4	3.40	26.51	1.58	YES
L0005054	0	0.22710E-05	649611.7	4290966.8	51.1	3.40	26.51	1.58	YES
L0005055	0	0.79500E-05	649551.8	4290913.5	50.8	3.40	36.74	1.58	YES
L0005056	0	0.79500E-05	649490.4	4290863.8	50.5	3.40	36.74	1.58	YES
L0005057	0	0.39750E-05	649426.2	4290799.7	50.2	3.40	23.26	1.58	YES
L0005058	0	0.39750E-05	649387.6	4290767.9	50.1	3.40	23.26	1.58	YES
L0005059	0	0.39750E-05	649349.1	4290736.1	49.9	3.40	23.26	1.58	YES
L0005060	0	0.39750E-05	649310.5	4290704.3	49.8	3.40	23.26	1.58	YES
L0005061	0	0.26500E-05	649148.7	4290768.0	49.3	3.40	11.63	1.58	YES
L0005062	0	0.26500E-05	649170.0	4290754.9	49.4	3.40	11.63	1.58	YES
L0005063	0	0.26500E-05	649191.3	4290741.9	49.4	3.40	11.63	1.58	YES
L0005064	0	0.26500E-05	649212.7	4290728.9	49.5	3.40	11.63	1.58	YES
L0005065	0	0.26500E-05	649234.0	4290715.8	49.5	3.40	11.63	1.58	YES
L0005066	0	0.26500E-05	649255.3	4290702.8	49.5	3.40	11.63	1.58	YES
VOL12	0	0.00000E+00	650665.3	4291406.9	53.2	1.30	11.63	1.21	YES
VOL22	0	0.00000E+00	650564.0	4291398.4	53.2	1.30	20.23	1.21	YES
VOL32	0	0.00000E+00	650456.4	4291399.5	53.9	1.30	15.12	1.21	YES
L0005067	0	0.00000E+00	650353.1	4291409.6	54.2	1.30	40.47	0.60	YES
L0005068	0	0.00000E+00	650268.8	4291389.3	54.5	1.30	40.47	0.60	YES
L0005069	0	0.00000E+00	650186.2	4291361.9	54.5	1.30	40.47	0.60	YES
L0005070	0	0.00000E+00	650105.1	4291330.6	54.8	1.30	40.47		

0.60 YES
L0005071 0 0.00000E+00 650027.6 4291291.4 53.7 1.30 40.47
0.60 YES
L0005072 0 0.00000E+00 649951.8 4291248.7 52.9 1.30 40.47
0.60 YES
L0005073 0 0.00000E+00 649876.1 4291183.7 52.5 1.30 26.51
0.60 YES
L0005074 0 0.00000E+00 649832.0 4291147.5 52.3 1.30 26.51
0.60 YES
L0005075 0 0.00000E+00 649787.9 4291111.4 52.0 1.30 26.51
0.60 YES
L0005076 0 0.00000E+00 649743.9 4291075.2 51.8 1.30 26.51
0.60 YES
L0005077 0 0.00000E+00 649699.8 4291039.1 51.6 1.30 26.51
0.60 YES
L0005078 0 0.00000E+00 649655.7 4291002.9 51.4 1.30 26.51
0.60 YES
L0005079 0 0.00000E+00 649611.7 4290966.8 51.1 1.30 26.51
0.60 YES
L0005080 0 0.00000E+00 649551.8 4290913.5 50.8 1.30 36.74
0.60 YES
L0005081 0 0.00000E+00 649490.4 4290863.8 50.5 1.30 36.74
0.60 YES
L0005082 0 0.00000E+00 649426.2 4290799.7 50.2 1.30 23.26
0.60 YES
L0005083 0 0.00000E+00 649387.6 4290767.9 50.1 1.30 23.26
0.60 YES
L0005084 0 0.00000E+00 649349.1 4290736.1 49.9 1.30 23.26
0.60 YES
L0005085 0 0.00000E+00 649310.5 4290704.3 49.8 1.30 23.26
0.60 YES
L0005086 0 0.00000E+00 649148.7 4290768.0 49.3 1.30 11.63
0.60 YES
L0005087 0 0.00000E+00 649170.0 4290754.9 49.4 1.30 11.63
0.60 YES

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE	NUMBER PART.	EMISSION RATE (GRAMS/SEC)	X	Y	BASE ELEV.	RELEASE HEIGHT	INIT. SY	INIT. SZ	URBAN SOURCE	EMISSION RATE SCALAR VARY

```
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 L0005088         0   0.00000E+00  649191.3 4290741.9    49.4     1.30    11.63
0.60     YES
 L0005089         0   0.00000E+00  649212.7 4290728.9    49.5     1.30    11.63
0.60     YES
 L0005090         0   0.00000E+00  649234.0 4290715.8    49.5     1.30    11.63
0.60     YES
 L0005091         0   0.00000E+00  649255.3 4290702.8    49.5     1.30    11.63
0.60     YES
↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                   ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                        ***        17:16:07

                                   PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                          SOURCE IDs
 -----------                                          ----------


  ALL        L0000001    , L0000002    , L0000003    , L0000004    , L0000005    ,
L0000006    , L0000007    , L0000008    ,

             L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
L0000014    , L0000015    , L0000016    ,

             L0000017    , L0000018    , L0000019    , L0000020    , L0000021    ,
L0000022    , L0000023    , L0000024    ,

             L0000025    , L0000026    , L0000027    , L0000028    , L0000029    ,
L0000030    , L0004925    , L0004926    ,

             L0004927    , L0004928    , L0004929    , L0004930    , L0004931    ,
L0004932    , L0004933    , L0004934    ,

             L0004935    , L0004936    , L0004937    , L0004938    , L0004939    ,
L0004940    , L0004941    , L0004942    ,

             VOL41       , L0004943    , L0004944    , L0004945    , L0004946    ,
L0004947    , L0004948    , L0004949    ,
```

```
             L0004950    , L0004951    , L0004952    , L0004953    , L0004954    ,
L0004955    , L0004956    , L0004957    ,

             L0004958    , L0004959    , L0004960    , L0004961    , L0004962    ,
L0004963    , L0004964    , L0004965    ,

             L0004966    , L0004967    , L0004968    , L0004969    , L0004970    ,
L0004971    , L0004972    , L0004973    ,

             L0004974    , L0004975    , L0004976    , L0004977    , L0004978    ,
L0004979    , L0004980    , L0004981    ,

             L0004982    , L0004983    , L0004984    , L0004985    , L0004986    ,
L0004987    , L0004988    , L0004989    ,

             L0004990    , L0004991    , L0004992    , L0004993    , L0004994    ,
L0004995    , L0004996    , L0004997    ,

             L0004998    , L0004999    , L0005000    , L0005001    , L0005002    ,
L0005003    , L0005004    , L0005005    ,

             L0005006    , L0005007    , L0005008    , L0005009    , L0005010    ,
L0005011    , L0005012    , L0005013    ,

             L0005014    , L0005015    , L0005016    , L0005017    , L0005018    ,
L0005019    , L0005020    , L0005021    ,

             L0005022    , L0005023    , L0005024    , L0005025    , L0005026    ,
L0005027    , L0005028    , L0005029    ,

             L0005030    , L0005031    , L0005032    , L0005033    , L0005034    ,
L0005035    , L0005036    , L0005037    ,

             L0005038    , L0005039    , L0005040    , L0005041    , VOL1        ,
VOL2        , VOL3        , L0005042    ,

             L0005043    , L0005044    , L0005045    , L0005046    , L0005047    ,
L0005048    , L0005049    , L0005050    ,
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                          ***        17:16:07

                                     PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                *** SOURCE IDs DEFINING SOURCE GROUPS
***
```

```
 SRCGROUP ID                                                SOURCE IDs
 -----------                                                ----------


             L0005051    , L0005052    , L0005053    , L0005054    , L0005055    ,
L0005056    , L0005057    , L0005058    ,

             L0005059    , L0005060    , L0005061    , L0005062    , L0005063    ,
L0005064    , L0005065    , L0005066    ,

             VOL12       , VOL22       , VOL32       , L0005067    , L0005068    ,
L0005069    , L0005070    , L0005071    ,

             L0005072    , L0005073    , L0005074    , L0005075    , L0005076    ,
L0005077    , L0005078    , L0005079    ,

             L0005080    , L0005081    , L0005082    , L0005083    , L0005084    ,
L0005085    , L0005086    , L0005087    ,

             L0005088    , L0005089    , L0005090    , L0005091    ,
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***        17:16:07

                                    PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                        *** SOURCE IDs DEFINED AS URBAN SOURCES
***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------


              2500000.   L0000001    , L0000002    , L0000003    , L0000004    ,
L0000005    , L0000006    , L0000007    ,
 L0000008    ,

             L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
L0000014    , L0000015    , L0000016    ,

             L0000017    , L0000018    , L0000019    , L0000020    , L0000021    ,
L0000022    , L0000023    , L0000024    ,

             L0000025    , L0000026    , L0000027    , L0000028    , L0000029    ,
L0000030    , L0004925    , L0004926    ,

             L0004927    , L0004928    , L0004929    , L0004930    , L0004931    ,
```

```
L0004932    , L0004933    , L0004934    ,

             L0004935    , L0004936    , L0004937    , L0004938    , L0004939    ,
L0004940    , L0004941    , L0004942    ,

             VOL41       , L0004943    , L0004944    , L0004945    , L0004946    ,
L0004947    , L0004948    , L0004949    ,

             L0004950    , L0004951    , L0004952    , L0004953    , L0004954    ,
L0004955    , L0004956    , L0004957    ,

             L0004958    , L0004959    , L0004960    , L0004961    , L0004962    ,
L0004963    , L0004964    , L0004965    ,

             L0004966    , L0004967    , L0004968    , L0004969    , L0004970    ,
L0004971    , L0004972    , L0004973    ,

             L0004974    , L0004975    , L0004976    , L0004977    , L0004978    ,
L0004979    , L0004980    , L0004981    ,

             L0004982    , L0004983    , L0004984    , L0004985    , L0004986    ,
L0004987    , L0004988    , L0004989    ,

             L0004990    , L0004991    , L0004992    , L0004993    , L0004994    ,
L0004995    , L0004996    , L0004997    ,

             L0004998    , L0004999    , L0005000    , L0005001    , L0005002    ,
L0005003    , L0005004    , L0005005    ,

             L0005006    , L0005007    , L0005008    , L0005009    , L0005010    ,
L0005011    , L0005012    , L0005013    ,

             L0005014    , L0005015    , L0005016    , L0005017    , L0005018    ,
L0005019    , L0005020    , L0005021    ,

             L0005022    , L0005023    , L0005024    , L0005025    , L0005026    ,
L0005027    , L0005028    , L0005029    ,

             L0005030    , L0005031    , L0005032    , L0005033    , L0005034    ,
L0005035    , L0005036    , L0005037    ,

             L0005038    , L0005039    , L0005040    , L0005041    , VOL1        ,
VOL2        , VOL3        , L0005042    ,

             L0005043    , L0005044    , L0005045    , L0005046    , L0005047    ,
L0005048    , L0005049    , L0005050    ,
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***        17:16:07
```

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
		L0005051 , L0005052 , L0005053 , L0005054 , L0005055 , L0005056 , L0005057 , L0005058 ,
		L0005059 , L0005060 , L0005061 , L0005062 , L0005063 , L0005064 , L0005065 , L0005066 ,
		VOL12 , VOL22 , VOL32 , L0005067 , L0005068 , L0005069 , L0005070 , L0005071 ,
		L0005072 , L0005073 , L0005074 , L0005075 , L0005076 , L0005077 , L0005078 , L0005079 ,
		L0005080 , L0005081 , L0005082 , L0005083 , L0005084 , L0005085 , L0005086 , L0005087 ,
		L0005088 , L0005089 , L0005090 , L0005091 ,

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

649742.2, 649754.2, 649766.2, 649778.2, 649790.2, 649802.2, 649814.2, 649826.2, 649838.2, 649850.2,
649862.2,

*** Y-COORDINATES OF GRID ***
(METERS)

4291240.0, 4291257.0, 4291274.0, 4291291.0, 4291308.0, 4291325.0, 4291342.0, 4291359.0, 4291376.0, 4291393.0,
4291410.0,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)											
	649742.20	649754.20	649766.20	649778.20	649790.20	649802.20	649814.20	649826.20	649838.20			
4291409.99	54.60	54.80	54.90	54.80	54.90	54.90	54.90	54.90	55.00	55.00		
4291392.99	54.70	54.80	54.80	54.80	54.80	54.80	54.90	54.90	55.00			
4291375.99	54.80	54.90	54.90	54.90	54.90	54.90	54.90	54.90	55.00			
4291358.99	54.80	54.90	54.90	54.90	54.90	54.90	54.90	54.90	55.00			
4291341.99	54.80	54.80	54.90	55.00	55.00	55.00	55.00	54.90	54.90			
4291324.99	54.80	54.90	55.20	55.40	55.40	55.30	55.20	55.00	54.90			
4291307.99	55.00	54.90	55.10	55.20	55.20	55.30	55.60	55.60	55.40			
4291290.99	56.10	56.20	56.50	56.80	56.70	57.00	56.80	56.10	55.50			
4291273.99	57.10	57.80	57.90	58.00	58.00	57.90	57.10	55.80	55.30			
4291256.99	57.70	58.00	57.90	58.00	58.00	58.00	57.00	55.60	55.00			
4291239.99	57.60	57.60	57.40	57.30	57.30	57.20	56.50	55.00	54.00			

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE:
GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS) 649850.20	649862.20
4291409.99	55.10	55.10
4291392.99	55.10	55.20
4291375.99	55.20	55.20
4291358.99	55.10	55.20
4291341.99	55.00	55.10
4291324.99	54.90	54.80
4291307.99	55.00	54.60
4291290.99	55.10	54.60
4291273.99	55.10	54.50
4291256.99	54.90	54.20
4291239.99	53.90	53.70

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE:
GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

Y-COORD (METERS)	X-COORD (METERS) 649742.20	649754.20	649766.20	649778.20	649790.20	649802.20	649814.20	649826.20	649838.20
4291409.99	54.60	54.80	54.90	54.80	54.90	54.90	54.90	55.00	55.00
4291392.99	54.70	54.80	54.80	54.80	54.80	54.80	54.90	54.90	55.00
4291375.99	54.80	54.90	54.90	54.90	54.90	54.90	54.90	54.90	55.00
4291358.99	54.80	54.90	54.90	54.90	54.90				

```
    54.90        54.90        54.90        55.00
  4291341.99 |         54.80        54.80        54.90        55.00        55.00
    55.00        55.00        54.90        54.90
  4291324.99 |         54.80        54.90        55.20        55.40        55.40
    55.30        55.20        55.00        54.90
  4291307.99 |         55.00        54.90        57.90        57.90        57.90
    57.90        55.60        55.60        55.40
  4291290.99 |         56.10        57.50        57.90        57.90        57.90
    57.90        56.80        56.10        55.50
  4291273.99 |         57.40        57.80        57.90        58.00        58.00
    57.90        57.80        57.80        55.30
  4291256.99 |         57.70        58.00        57.90        58.00        58.00
    58.00        57.00        57.80        55.00
  4291239.99 |         57.60        57.60        57.40        57.30        57.30
    57.50        57.30        58.00        58.00
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***        17:16:07

                                    PAGE  16
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                 *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                                 * HILL HEIGHT SCALES IN METERS *

    Y-COORD  |                                                 X-COORD (METERS)
    (METERS) |     649850.20    649862.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |         55.10        55.10
  4291392.99 |         55.10        55.20
  4291375.99 |         55.20        55.20
  4291358.99 |         55.10        55.20
  4291341.99 |         55.00        55.10
  4291324.99 |         54.90        54.80
  4291307.99 |         55.00        54.60
  4291290.99 |         55.10        54.60
  4291273.99 |         55.10        54.50
  4291256.99 |         54.90        54.20
  4291239.99 |         53.90        53.70
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***        17:16:07

                                    PAGE  17
```

Y-COORD (METERS)	X-COORD (METERS)									
	649742.20	649754.20	649766.20	649778.20	649790.20	649802.20	649814.20	649826.20	649838.20	
4291409.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291392.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291375.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291358.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291341.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291324.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291307.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291290.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291273.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291256.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291239.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	

Y-COORD (METERS)	X-COORD (METERS)	
	649850.20	649862.20

```
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |          1.80         1.80
  4291392.99 |          1.80         1.80
  4291375.99 |          1.80         1.80
  4291358.99 |          1.80         1.80
  4291341.99 |          1.80         1.80
  4291324.99 |          1.80         1.80
  4291307.99 |          1.80         1.80
  4291290.99 |          1.80         1.80
  4291273.99 |          1.80         1.80
  4291256.99 |          1.80         1.80
  4291239.99 |          1.80         1.80
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                 ***        07/18/23
 *** AERMET - VERSION  19191 ***    ***
                         ***        17:16:07

                                    PAGE  19
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                                      *** DISCRETE CARTESIAN RECEPTORS ***
                                                    (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                                    (METERS)

     ( 650194.2, 4291271.5,      53.3,      53.3,       1.8);         ( 650195.6,
4291266.8,      53.4,      53.4,       1.8);
     ( 650196.4, 4291262.6,      53.5,      53.5,       1.8);         ( 650197.8,
4291257.9,      53.6,      53.6,       1.8);
     ( 650199.8, 4291253.2,      53.6,      53.6,       1.8);         ( 650202.0,
4291248.0,      53.7,      53.7,       1.8);
     ( 650204.2, 4291242.5,      53.7,      53.7,       1.8);         ( 650205.8,
4291236.7,      53.8,      53.8,       1.8);
     ( 650212.3, 4291238.7,      53.8,      53.8,       1.8);         ( 650218.3,
4291240.5,      53.7,      53.7,       1.8);
     ( 650224.7, 4291242.5,      53.7,      53.7,       1.8);         ( 650232.7,
4291245.3,      53.7,      53.7,       1.8);
     ( 650241.1, 4291248.3,      53.7,      53.7,       1.8);         ( 650249.2,
4291250.9,      53.7,      53.7,       1.8);
     ( 650256.6, 4291253.7,      53.7,      53.7,       1.8);         ( 650266.2,
4291257.1,      53.7,      53.7,       1.8);
     ( 650206.4, 4291276.2,      53.4,      53.4,       1.8);         ( 650208.5,
4291273.2,      53.4,      53.4,       1.8);
     ( 650210.1, 4291268.6,      53.5,      53.5,       1.8);         ( 650212.3,
4291264.6,      53.6,      53.6,       1.8);
     ( 650235.3, 4291286.2,      53.6,      53.6,       1.8);         ( 650236.7,
4291283.0,      53.6,      53.6,       1.8);
     ( 650238.2, 4291279.8,      53.6,      53.6,       1.8);         ( 650239.2,
4291276.2,      53.6,      53.6,       1.8);
```

```
     ( 650239.7, 4291273.0,      53.6,      53.6,       1.8);         ( 650256.4,
4291292.0,      53.7,      53.7,       1.8);
     ( 650258.0, 4291286.8,      53.7,      53.7,       1.8);         ( 650260.0,
4291279.8,      53.7,      53.7,       1.8);
     ( 650260.6, 4291272.4,      53.7,      53.7,       1.8);         ( 650263.8,
4291266.0,      53.7,      53.7,       1.8);
     ( 649381.2, 4290586.8,      50.8,      50.8,       1.8);         ( 649394.6,
4290600.2,      50.6,      50.6,       1.8);
     ( 649410.7, 4290612.7,      50.5,      50.5,       1.8);         ( 649425.9,
4290624.3,      50.6,      50.6,       1.8);
     ( 649417.8, 4290633.2,      50.5,      50.5,       1.8);         ( 649410.7,
4290643.1,      50.4,      50.4,       1.8);
     ( 649391.9, 4290566.2,      51.2,      51.2,       1.8);         ( 649400.8,
4290559.0,      51.4,      51.4,       1.8);
     ( 649406.2, 4290552.8,      51.5,      51.5,       1.8);         ( 649414.2,
4290537.6,      51.6,      51.6,       1.8);
     ( 649435.7, 4290606.4,      50.8,      50.8,       1.8);         ( 649444.6,
4290599.3,      50.8,      50.8,       1.8);
     ( 649449.1, 4290591.2,      51.0,      51.0,       1.8);         ( 649458.1,
4290584.1,      51.1,      51.1,       1.8);
     ( 649458.1, 4290644.0,      50.8,      50.8,       1.8);         ( 649468.8,
4290628.8,      51.1,      51.1,       1.8);
     ( 649481.3, 4290619.0,      51.3,      51.3,       1.8);         ( 649497.4,
4290607.3,      51.5,      51.5,       1.8);
     ( 649452.7, 4290733.4,      50.2,      50.2,       1.8);         ( 649462.5,
4290745.0,      50.3,      50.3,       1.8);
     ( 649473.2, 4290753.0,      50.3,      50.3,       1.8);         ( 649487.6,
4290762.0,      50.2,      50.2,       1.8);
     ( 649458.9, 4290719.1,      50.2,      50.2,       1.8);         ( 649482.2,
4290692.2,      50.6,      50.6,       1.8);
     ( 649496.5, 4290676.2,      50.8,      50.8,       1.8);         ( 649494.7,
4290750.4,      50.3,      50.3,       1.8);
     ( 649510.8, 4290725.3,      50.7,      50.7,       1.8);         ( 649531.4,
4290701.2,      50.7,      50.7,       1.8);
     ( 649512.6, 4290658.3,      51.1,      51.1,       1.8);         ( 649505.4,
4290620.7,      51.6,      51.6,       1.8);
     ( 649581.9, 4290816.0,      50.8,      50.8,       1.8);         ( 649595.6,
4290822.0,      50.9,      50.9,       1.8);
     ( 649605.9, 4290832.5,      50.9,      50.9,       1.8);         ( 649616.8,
4290841.6,      51.0,      51.0,       1.8);
     ( 649599.3, 4290800.4,      51.0,      51.0,       1.8);         ( 649604.7,
4290787.9,      51.2,      51.2,       1.8);
     ( 649623.4, 4290818.3,      51.3,      51.3,       1.8);         ( 649627.9,
4290802.2,      51.3,      51.3,       1.8);
     ( 649634.6, 4290882.6,      50.9,      50.9,       1.8);         ( 649644.4,
4290891.5,      50.9,      50.9,       1.8);
     ( 649657.9, 4290903.1,      51.0,      51.0,       1.8);         ( 649662.3,
4290845.9,      51.6,      51.6,       1.8);
     ( 649670.4, 4290910.3,      51.1,      51.1,       1.8);         ( 649672.2,
4290855.8,      51.6,      51.6,       1.8);
```

(649681.1, 4290918.3, 51.1, 51.1, 1.8); (649690.0, 4290926.4, 51.1, 51.1, 1.8);
(649703.5, 4290939.8, 51.1, 51.1, 1.8); (649686.5, 4290867.4, 51.6, 51.6, 1.8);
(649698.1, 4290813.7, 51.6, 51.6, 1.8); (649718.7, 4290834.3, 51.6, 51.6, 1.8);
(649741.0, 4290850.4, 51.7, 51.7, 1.8); (649763.4, 4290863.8, 51.7, 51.7, 1.8);
(649701.7, 4290877.2, 51.7, 51.7, 1.8); (649715.1, 4290890.6, 51.6, 51.6, 1.8);
(649732.1, 4290904.9, 51.4, 51.4, 1.8); (649910.9, 4290991.7, 51.8, 51.8, 1.8);
(649928.8, 4291003.3, 52.4, 52.4, 1.8); (649945.8, 4291014.0, 52.6, 52.6, 1.8);
(649962.8, 4291023.0, 52.7, 52.7, 1.8); (650053.1, 4291107.9, 52.5, 52.5, 1.8);

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(650064.7, 4291089.1, 52.7, 52.7, 1.8); (650085.3, 4291104.3, 53.0, 53.0, 1.8);
(650070.1, 4291118.7, 52.8, 52.8, 1.8); (650083.5, 4291131.2, 53.1, 53.1, 1.8);
(650146.1, 4291166.1, 54.0, 54.0, 1.8); (650157.7, 4291151.8, 54.0, 54.0, 1.8);
(650140.7, 4291144.6, 53.9, 53.9, 1.8); (650115.7, 4291125.8, 53.7, 53.7, 1.8);
(650113.9, 4291149.1, 53.8, 53.8, 1.8); (650178.3, 4291183.9, 54.0, 54.0, 1.8);
(650190.8, 4291167.8, 54.1, 54.1, 1.8); (650434.9, 4291167.8, 52.7, 52.7, 1.8);
(650417.1, 4291189.3, 53.3, 53.3, 1.8); (650401.9, 4291217.0, 54.2, 54.2, 1.8);
(650207.8, 4291177.7, 54.2, 54.2, 1.8); (650225.7, 4291183.0, 54.2, 54.2, 1.8);
(650240.9, 4291188.4, 54.3, 54.3, 1.8); (650258.8, 4291195.6, 54.3, 54.3, 1.8);
(650280.2, 4291200.9, 54.4, 54.4, 1.8); (650293.7, 4291207.2, 54.2, 54.2, 1.8);
(650315.1, 4291215.2, 54.1, 54.1, 1.8); (650333.9, 4291220.6, 54.1, 54.1, 1.8);

```
     ( 650352.7, 4291225.1,      54.2,      54.2,       1.8);         ( 650374.1,
4291231.3,      54.3,      54.3,       1.8);
     ( 650013.8, 4291462.0,      55.0,      55.0,       1.8);         ( 649930.6,
4291369.0,      55.9,      55.9,       1.8);
     ( 649914.5, 4291349.4,      55.4,      55.4,       1.8);         ( 649935.1,
4291336.0,      54.5,      54.5,       1.8);
     ( 649907.3, 4291317.2,      54.1,      54.1,       1.8);         ( 649919.9,
4291361.0,      55.7,      55.7,       1.8);
     ( 649909.1, 4291335.1,      54.7,      54.7,       1.8);         ( 649903.8,
4291306.5,      53.8,      53.8,       1.8);
     ( 649917.2, 4291272.5,      53.5,      53.5,       1.8);         ( 649911.8,
4291301.1,      53.8,      53.8,       1.8);
     ( 649924.3, 4291302.9,      53.8,      53.8,       1.8);         ( 650053.1,
4291363.7,      57.0,      57.0,       1.8);
     ( 650066.5, 4291373.5,      56.5,      56.5,       1.8);         ( 650079.0,
4291366.4,      56.4,      56.4,       1.8);
     ( 649216.8, 4290755.2,      49.8,      49.8,       0.0);         ( 649667.3,
4291204.2,      56.1,      56.1,       0.0);
     ( 649647.4, 4291189.0,      56.6,      56.6,       0.0);         ( 649627.6,
4291173.8,      56.6,      56.6,       0.0);
     ( 649607.8, 4291158.6,      55.6,      55.6,       0.0);         ( 649587.9,
4291143.4,      54.0,      54.0,       0.0);
     ( 649568.1, 4291128.1,      53.5,      53.5,       0.0);         ( 649548.3,
4291112.9,      54.0,      54.0,       0.0);
     ( 649528.4, 4291097.7,      54.3,      54.3,       0.0);         ( 649508.6,
4291082.5,      53.5,      53.5,       0.0);
     ( 649488.8, 4291067.3,      52.9,      52.9,       0.0);         ( 649468.9,
4291052.0,      53.2,      53.2,       0.0);
     ( 649449.1, 4291036.8,      54.2,      54.2,       0.0);         ( 649429.3,
4291021.6,      53.6,      53.6,       0.0);
     ( 649409.4, 4291006.4,      52.1,      52.1,       0.0);         ( 649389.6,
4290991.2,      51.1,      51.1,       0.0);
     ( 649358.6, 4290967.6,      50.3,      50.3,       0.0);         ( 649339.0,
4290952.1,      50.6,      50.6,       0.0);
     ( 649319.4, 4290936.6,      51.3,      51.3,       0.0);         ( 649299.8,
4290921.1,      51.7,      51.7,       0.0);
     ( 649280.2, 4290905.6,      52.0,      52.0,       0.0);         ( 649260.6,
4290890.1,      52.1,      52.1,       0.0);
     ( 649241.0, 4290874.6,      52.3,      52.3,       0.0);         ( 649221.3,
4290859.1,      52.5,      52.5,       0.0);
     ( 649201.7, 4290843.6,      52.3,      52.3,       0.0);         ( 649182.1,
4290828.1,      51.5,      51.5,       0.0);
     ( 649158.3, 4290816.1,      51.1,      51.1,       1.8);         ( 649684.2,
4291223.8,      55.4,      55.4,       1.8);
     ( 649247.5, 4290740.0,      49.7,      49.7,       0.0);         ( 649225.7,
4290769.6,      50.0,      50.0,       0.0);
     ( 649245.6, 4290784.9,      50.1,      50.1,       0.0);         ( 649265.4,
4290800.1,      50.0,      50.0,       0.0);
     ( 649285.2, 4290815.3,      50.0,      50.0,       0.0);         ( 649305.1,
4290830.5,      50.0,      50.0,       0.0);
```

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
L0000009	650194.2	4291271.5	-14.43
L0000009	650195.6	4291266.8	-10.33
L0000009	650196.4	4291262.6	-6.66
L0000009	650197.8	4291257.9	-2.04
L0000009	650206.4	4291276.2	-4.41
L0000009	650208.5	4291273.2	-1.78
L0000010	650194.2	4291271.5	-4.62
L0000010	650195.6	4291266.8	-1.77
L0000010	650206.4	4291276.2	-14.94
L0000010	650208.5	4291273.2	-12.30
L0000010	650210.1	4291268.6	

-7.71			
	L0000010	650212.3	4291264.6
-3.53			
	L0000010	650235.3	4291286.2
-0.60			
	L0000011	650235.3	4291286.2
-17.61			
	L0000011	650236.7	4291283.0
-14.29			
	L0000011	650238.2	4291279.8
-10.85			
	L0000011	650239.2	4291276.2
-7.13			
	L0000011	650239.7	4291273.0
-3.93			
	L0000011	650256.4	4291292.0
-4.77			
	L0000011	650258.0	4291286.8
-1.93			
	L0000012	650256.4	4291292.0
-15.07			
	L0000012	650258.0	4291286.8
-10.41			
	L0000012	650260.0	4291279.8
-3.59			
	L0004979	649216.8	4290755.2
-5.15			
	L0004980	649247.5	4290740.0
-0.69			
	L0004981	649247.5	4290740.0
-7.14			
	L0005045	650053.1	4291363.7
-25.36			
	L0005045	650066.5	4291373.5
-29.29			
	L0005045	650079.0	4291366.4
-42.75			
	L0005046	650053.1	4291363.7
-10.32			
	L0005047	649907.3	4291317.2
-5.40			
	L0005047	649903.8	4291306.5
-11.94			
	L0005047	649917.2	4291272.5
-45.05			
	L0005047	649911.8	4291301.1
-21.14			
	L0005047	649924.3	4291302.9
-26.31			
	L0005070	650053.1	4291363.7

```
-25.36
                             L0005070            650066.5     4291373.5
-29.29
                             L0005070            650079.0     4291366.4
-42.75
                             L0005071            650053.1     4291363.7
-10.32
                             L0005072            649907.3     4291317.2
-5.40
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                        ***        17:16:07

                                   PAGE  23
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                      * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT
BE PERFORMED *
                        LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR
FASTAREA/FASTALL


                              SOURCE          - - RECEPTOR LOCATION - -
DISTANCE
                                ID           XR (METERS)   YR (METERS)
(METERS)
                            - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - -

                             L0005072            649903.8     4291306.5
-11.94
                             L0005072            649917.2     4291272.5
-45.05
                             L0005072            649911.8     4291301.1
-21.14
                             L0005072            649924.3     4291302.9
-26.31
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                        ***        17:16:07

                                   PAGE  24
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                            *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                                (1=YES; 0=NO)
```

```
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\MET DATA\14-18.SFC
Met Version: 19191
Profile file: ..\..\MET DATA\14-18.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 93225 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2014 Year: 2014

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
14	01	01	1	01	-15.5	0.166	-9.000	-9.000	-999.	162.	30.3	0.05	0.69	1.00	2.36	211.	10.1	275.4	2.0
14	01	01	1	02	-3.4	0.079	-9.000	-9.000	-999.	56.	13.1	0.06	0.69	1.00	1.06	188.	10.1	273.8	2.0
14	01	01	1	03	-12.2	0.146	-9.000	-9.000	-999.	134.	23.5	0.05	0.69	1.00	2.10	136.	10.1	275.9	2.0
14	01	01	1	04	-23.3	0.226	-9.000	-9.000	-999.	257.	56.0	0.05	0.69	1.00	3.15	142.	10.1	277.0	2.0
14	01	01	1	05	-16.2	0.171	-9.000	-9.000	-999.	170.	32.2	0.06	0.69	1.00	2.33	186.	10.1	274.9	2.0
14	01	01	1	06	-3.0	0.076	-9.000	-9.000	-999.	55.	12.9	0.06	0.69	1.00	0.99	204.	10.1	273.1	2.0
14	01	01	1	07	-4.8	0.092	-9.000	-9.000	-999.	67.	14.7	0.07	0.69	1.00	1.28	171.	10.1	272.0	2.0
14	01	01	1	08	-1.8	0.065	-9.000	-9.000	-999.	40.	14.3	0.06	0.69	1.00	0.67	183.	10.1	273.1	2.0
14	01	01	1	09	-0.3	0.062	-9.000	-9.000	-999.	37.	75.4	0.06	0.69	0.41	0.82	181.	10.1	278.1	2.0
14	01	01	1	10	36.6	0.151	0.431	0.020	80.	141.	-8.6	0.05	0.69	0.28	1.55	141.	10.1	280.4	2.0
14	01	01	1	11	65.9	0.162	0.666	0.019	163.	157.	-5.9	0.07	0.69	0.24	1.48	161.	10.1	283.1	2.0
14	01	01	1	12	82.5	0.174	0.784	0.017	212.	175.	-5.8	0.07	0.69	0.22	1.59	152.	10.1	285.9	2.0
14	01	01	1	13	86.0	0.219	0.835	0.015	246.	246.	-11.1	0.07	0.69	0.22	2.18	154.	10.1	288.1	2.0
14	01	01	1	14	74.8	0.234	0.838	0.014	286.	272.	-15.6	0.05	0.69	0.23	2.56	229.	10.1	288.1	2.0
14	01	01	1	15	42.8	0.198	0.714	0.013	308.	212.	-16.5	0.06	0.69	0.26	2.08	180.	10.1	288.8	2.0
14	01	01	1	16	15.1	0.151	0.507	0.013	315.	141.	-20.7	0.06	0.69	0.35	1.62	194.	10.1	288.1	2.0
14	01	01	1	17	-9.6	0.137	-9.000	-9.000	-999.	122.	24.4	0.05	0.69	0.61	1.96	223.	10.1	286.4	2.0
14	01	01	1	18	-1.5	0.061	-9.000	-9.000	-999.	38.	13.6	0.04	0.69	1.00	0.65	251.	10.1	283.8	2.0
14	01	01	1	19	-1.5	0.058	-9.000	-9.000	-999.	34.	12.1	0.02	0.69	1.00	0.72	47.	10.1	280.9	2.0
14	01	01	1	20	-3.4	0.076	-9.000	-9.000	-999.	50.	11.8	0.03	0.69	1.00	1.20	81.	10.1	278.8	2.0
14	01	01	1	21	-2.2	0.065	-9.000	-9.000	-999.	40.	11.5	0.03	0.69	1.00	0.91	73.	10.1	278.8	2.0
14	01	01	1	22	-1.6	0.059	-9.000	-9.000	-999.	35.	12.0	0.02	0.69	1.00	0.74	22.	10.1	279.2	2.0

```
 14 01 01   1 23   -1.9  0.063 -9.000 -9.000 -999.   38.     11.9  0.03   0.69
1.00    0.82   60.   10.1  277.0    2.0
 14 01 01   1 24   -5.1  0.090 -9.000 -9.000 -999.   65.     13.1  0.02   0.69
1.00    1.57   34.   10.1  276.4    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  211.    2.36   275.4   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                        ***        17:16:07

                                   PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                               *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                   L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                  *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                       ** CONC OF DPM      IN MICROGRAMS/M**3
                    **

    Y-COORD  |                                                 X-COORD (METERS)
    (METERS) |     649742.20    649754.20    649766.20    649778.20    649790.20
649802.20    649814.20    649826.20    649838.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |       0.00052      0.00054      0.00056      0.00058      0.00060
  0.00063      0.00065      0.00068      0.00071
  4291392.99 |       0.00054      0.00056      0.00058      0.00060      0.00063
  0.00065      0.00068      0.00071      0.00075
  4291375.99 |       0.00056      0.00058      0.00060      0.00062      0.00065
  0.00068      0.00071      0.00075      0.00079
  4291358.99 |       0.00058      0.00060      0.00062      0.00065      0.00068
  0.00071      0.00075      0.00079      0.00083
```

 4291409.99 | 0.00074   0.00077
 4291392.99 | 0.00078   0.00082
 4291375.99 | 0.00083   0.00088
 4291358.99 | 0.00088   0.00094
 4291341.99 | 0.00094   0.00100
 4291324.99 | 0.00099   0.00107

```
  4291307.99 |       0.00105      0.00115
  4291290.99 |       0.00112      0.00123
  4291273.99 |       0.00120      0.00132
  4291256.99 |       0.00131      0.00144
  4291239.99 |       0.00150      0.00162
```



```
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                               *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL      ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                   L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                   L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                   L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF DPM      IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         650194.23    4291271.45        0.00109                      650195.61
4291266.76        0.00105
         650196.44    4291262.63        0.00116                      650197.82
4291257.94        0.00111
         650199.75    4291253.25        0.00122                      650201.96
4291248.01        0.00114
         650204.16    4291242.49        0.00107                      650205.82
4291236.70        0.00101
         650212.33    4291238.72        0.00101                      650218.31
4291240.52        0.00100
         650224.69    4291242.51        0.00100                      650232.67
4291245.31        0.00101
         650241.05    4291248.30        0.00101                      650249.22
4291250.89        0.00102
         650256.60    4291253.68        0.00102                      650266.17
4291257.07        0.00103
```

650206.35 4291276.22 0.00108 650208.54 4291273.23 0.00106
650210.14 4291268.64 0.00118 650212.33 4291264.65 0.00113
650235.26 4291286.19 0.00110 650236.66 4291283.00 0.00122
650238.25 4291279.81 0.00119 650239.25 4291276.22 0.00115
650239.65 4291273.03 0.00112 650256.40 4291291.97 0.00109
650258.00 4291286.79 0.00106 650259.99 4291279.81 0.00115
650260.59 4291272.43 0.00122 650263.78 4291266.05 0.00113
649381.16 4290586.76 0.00074 649394.57 4290600.17 0.00078
649410.67 4290612.69 0.00080 649425.86 4290624.31 0.00080
649417.82 4290633.25 0.00088 649410.67 4290643.08 0.00097
649391.89 4290566.20 0.00063 649400.83 4290559.05 0.00060
649406.20 4290552.79 0.00057 649414.24 4290537.59 0.00052
649435.70 4290606.43 0.00070 649444.64 4290599.28 0.00066
649449.11 4290591.23 0.00062 649458.05 4290584.08 0.00059
649458.05 4290643.98 0.00078 649468.77 4290628.78 0.00069
649481.29 4290618.95 0.00063 649497.38 4290607.32 0.00057
649452.68 4290733.37 0.00151 649462.52 4290744.99 0.00153
649473.24 4290753.04 0.00148 649487.55 4290761.98 0.00141
649458.94 4290719.07 0.00127 649482.18 4290692.25 0.00091
649496.49 4290676.16 0.00078 649494.70 4290750.36 0.00122
649510.79 4290725.33 0.00095 649531.35 4290701.19 0.00076
649512.58 4290658.28 0.00067 649505.43 4290620.73 0.00059
649581.89 4290816.00 0.00126 649595.63 4290822.01 0.00119
649605.89 4290832.53 0.00118 649616.82 4290841.57 0.00114
649599.29 4290800.42 0.00100 649604.66 4290787.90 0.00090

```
         649623.43    4290818.30        0.00095                      649627.90
4290802.21        0.00085
         649634.60    4290882.58        0.00122                      649644.44
4290891.53        0.00116
         649657.85    4290903.15        0.00109                      649662.32
4290845.92        0.00081
         649670.37    4290910.31        0.00102                      649672.16
4290855.76        0.00079
         649681.10    4290918.35        0.00098                      649690.04
4290926.40        0.00096
         649703.46    4290939.81        0.00096                      649686.47
4290867.38        0.00075
         649698.09    4290813.73        0.00060                      649718.66
4290834.29        0.00058
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                  ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***        17:16:07

                                    PAGE  29
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL       ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                  L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                  L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                  L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                   ** CONC OF DPM      IN MICROGRAMS/M**3
                  **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         649741.01    4290850.39        0.00055                      649763.37
4290863.80        0.00053
         649701.67    4290877.22        0.00072                      649715.08
4290890.63        0.00071
         649732.07    4290904.94        0.00069                      649910.92
4290991.68        0.00058
         649928.80    4291003.31        0.00060                      649945.79
```

4291014.04 0.00062
649962.79 4291022.98 0.00064 650053.10
4291107.93 0.00109
650064.73 4291089.15 0.00091 650085.30
4291104.35 0.00085
650070.09 4291118.66 0.00101 650083.51
4291131.18 0.00096
650146.10 4291166.06 0.00079 650157.73
4291151.75 0.00071
650140.74 4291144.59 0.00074 650115.70
4291125.82 0.00077
650113.91 4291149.07 0.00084 650178.30
4291183.94 0.00077
650190.82 4291167.85 0.00070 650434.94
4291167.85 0.00064
650417.06 4291189.31 0.00069 650401.86
4291217.03 0.00078
650207.81 4291177.68 0.00070 650225.69
4291183.05 0.00069
650240.89 4291188.41 0.00070 650258.78
4291195.57 0.00070
650280.24 4291200.93 0.00071 650293.65
4291207.19 0.00072
650315.11 4291215.24 0.00075 650333.89
4291220.60 0.00077
650352.67 4291225.08 0.00079 650374.13
4291231.34 0.00083
650013.76 4291462.05 0.00081 649930.59
4291369.05 0.00120
649914.50 4291349.37 0.00130 649935.06
4291335.96 0.00161
649907.34 4291317.18 0.00125 649919.86
4291361.00 0.00122
649909.13 4291335.07 0.00141 649903.77
4291306.45 0.00130
649917.18 4291272.47 0.00179 649911.81
4291301.09 0.00143
649924.33 4291302.87 0.00156 650053.10
4291363.68 0.00074
650066.52 4291373.52 0.00096 650079.04
4291366.37 0.00097
649216.78 4290755.24 0.00542 649667.26
4291204.25 0.00075
649647.43 4291189.03 0.00075 649627.60
4291173.81 0.00077
649607.77 4291158.59 0.00078 649587.93
4291143.37 0.00082
649568.10 4291128.14 0.00085 649548.27
4291112.92 0.00088
649528.43 4291097.70 0.00092 649508.60

```
4291082.48        0.00097
         649488.77    4291067.26        0.00102                        649468.94
4291052.04        0.00105
         649449.10    4291036.82        0.00105                        649429.27
4291021.60        0.00105
         649409.44    4291006.38        0.00104                        649389.61
4290991.16        0.00102
         649358.62    4290967.62        0.00099                        649339.01
4290952.12        0.00099
         649319.40    4290936.61        0.00099                        649299.79
4290921.11        0.00101
         649280.17    4290905.61        0.00103                        649260.56
4290890.10        0.00108
         649240.95    4290874.60        0.00118                        649221.34
4290859.10        0.00134
         649201.72    4290843.59        0.00162                        649182.11
4290828.09        0.00210
         649158.28    4290816.10        0.00256                        649684.20
4291223.82        0.00073
         649247.52    4290740.02        0.00472                        649225.72
4290769.65        0.00372
         649245.57    4290784.86        0.00246                        649265.41
4290800.06        0.00194
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
MITIGATED                   ***        07/18/23
 *** AERMET - VERSION  19191 ***   ***
                         ***       17:16:07

                                   PAGE  30
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL       ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                 L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                   ** CONC OF DPM      IN MICROGRAMS/M**3
                  **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)
Y-COORD (M)        CONC
```

```
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - -
         649285.25    4290815.27        0.00174                      649305.10
4290830.48        0.00167
         649324.94    4290845.68        0.00165                      649344.78
4290860.89        0.00164
         649364.63    4290876.10        0.00164                      649384.47
4290891.31        0.00165
         649404.31    4290906.51        0.00170                      649424.16
4290921.72        0.00183
         649444.00    4290936.93        0.00196                      649463.84
4290952.13        0.00204
         649483.69    4290967.34        0.00208                      649503.53
4290982.55        0.00205
         649523.37    4290997.75        0.00191                      649543.21
4291012.96        0.00172
         649563.06    4291028.17        0.00156                      649582.90
4291043.37        0.00145
         649602.74    4291058.58        0.00139                      649622.59
4291073.79        0.00134
         649642.43    4291088.99        0.00131                      649662.27
4291104.20        0.00129
         649682.12    4291119.41        0.00129                      649701.96
4291134.62        0.00130
         649673.19    4291162.96        0.00093                      649653.34
4291147.75        0.00094
         649633.50    4291132.55        0.00096                      649613.66
4291117.34        0.00098
         649593.81    4291102.13        0.00101                      649573.97
4291086.92        0.00106
         649554.13    4291071.72        0.00112                      649534.28
4291056.51        0.00119
         649514.44    4291041.30        0.00128                      649494.60
4291026.10        0.00135
         649474.75    4291010.89        0.00138                      649454.91
4290995.68        0.00138
         649435.07    4290980.48        0.00135                      649415.22
4290965.27        0.00131
         649395.38    4290950.06        0.00127                      649375.54
4290934.86        0.00123
         649355.70    4290919.65        0.00122                      649335.85
4290904.44        0.00122
         649316.01    4290889.24        0.00123                      649296.17
4290874.03        0.00125
         649276.32    4290858.82        0.00131                      649256.48
4290843.61        0.00142
         649236.64    4290828.41        0.00166                      649216.79
4290813.20        0.00212
         649185.13    4290793.92        0.00341                      649699.43
4291179.00        0.00090
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43680 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	NETWORK	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00542	AT (649216.78, 4290755.24, 49.77, 49.77, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.00472	AT (649247.52, 4290740.02, 49.72, 49.72, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.00372	AT (649225.72, 4290769.65, 49.99, 49.99, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.00341	AT (649185.13, 4290793.92, 50.69, 50.69, 1.80)	DC	
	5TH HIGHEST VALUE IS	0.00256	AT (649158.28, 4290816.10, 51.08, 51.08, 1.80)	DC	
	6TH HIGHEST VALUE IS	0.00246	AT (649245.57, 4290784.86, 50.06, 50.06, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00212	AT (649216.79, 4290813.20, 51.60, 51.60, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00210	AT (649182.11, 4290828.09, 51.49, 51.49, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.00208	AT (649483.69, 4290967.34, 51.16, 51.16, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.00205	AT (649503.53, 4290982.55, 51.21, 51.21, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   30 Warning Message(s)
A Total of   996 Informational Message(s)

A Total of   43680 Hours Were Processed

A Total of   452 Calm Hours Identified

A Total of   544 Missing Hours Identified (1.25 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
SO W320   690   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   691   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   692   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   694   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   695   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   696   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   697   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   698   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   699   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   702   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   703   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   704   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS

```
SO W320     705        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     706        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     707        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     708        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     711        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     712        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     715        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     716        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     717        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     718        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     721        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     722        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     723        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     724        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     725        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     726        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
ME W186     752       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187     752       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

```
**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 11.2.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 7/10/2023
** FILE: D:\DOCUMENTS\ROSEVILLE TO SACRAMENTO THIRD RAIL\2023 UPDATE\AERMOD LAYOVER
CONSTUCT\AERMOD LAYOVER CONSTRUCT.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS - UNMITIGATED
   MODELOPT DFAULT CONC
   AVERTIME PERIOD
   URBANOPT 2500000 SACREMENTO_-ROSEVILLE-ARDEN-ARCADE_MSA
   POLLUTID DPM
   FLAGPOLE 1.80
   RUNORNOT RUN
   ERRORFIL "AERMOD LAYOVER CONSTRUCT.ERR"
CO FINISHED
**
**************************************
** AERMOD SOURCE PATHWAY
**************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
** ------------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY SEPARATED VOLUME SOURCES (2W)
** LINE VOLUME SOURCE ID = SLINE21
** DESCRSRC HAUL TRUCK ROUTE
** PREFIX
** LENGTH OF SIDE = 13.32
** CONFIGURATION = SEPARATED 2W
** EMISSION RATE = 0.0000273
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 9
** 649987.745, 4291180.599, 52.57, 3.40, 12.39
```

```
** 650122.346, 4291253.260, 53.13, 3.40, 12.39
** 650180.713, 4291277.083, 53.34, 3.40, 12.39
** 650202.154, 4291285.421, 53.39, 3.40, 12.39
** 650285.535, 4291310.436, 53.65, 3.40, 12.39
** 650386.784, 4291334.259, 52.10, 3.40, 12.39
** 650471.356, 4291343.788, 49.96, 3.40, 12.39
** 650496.370, 4291355.700, 49.90, 3.40, 12.39
** 650745.323, 4291364.038, 52.75, 3.40, 12.39
** --------------------------------------------------------------------
   LOCATION L0000001     VOLUME   649993.606 4291183.763 52.59
   LOCATION L0000002     VOLUME   650017.048 4291196.418 52.69
   LOCATION L0000003     VOLUME   650040.490 4291209.072 52.79
   LOCATION L0000004     VOLUME   650063.933 4291221.727 52.89
   LOCATION L0000005     VOLUME   650087.375 4291234.382 52.98
   LOCATION L0000006     VOLUME   650110.818 4291247.037 53.08
   LOCATION L0000007     VOLUME   650134.881 4291258.376 53.18
   LOCATION L0000008     VOLUME   650159.546 4291268.443 53.26
   LOCATION L0000009     VOLUME   650184.234 4291278.452 53.35
   LOCATION L0000010     VOLUME   650209.254 4291287.551 53.41
   LOCATION L0000011     VOLUME   650234.770 4291295.206 53.49
   LOCATION L0000012     VOLUME   650260.287 4291302.861 53.57
   LOCATION L0000013     VOLUME   650285.807 4291310.500 53.65
   LOCATION L0000014     VOLUME   650311.739 4291316.601 53.25
   LOCATION L0000015     VOLUME   650337.671 4291322.703 52.85
   LOCATION L0000016     VOLUME   650363.603 4291328.805 52.45
   LOCATION L0000017     VOLUME   650389.592 4291334.575 52.03
   LOCATION L0000018     VOLUME   650416.065 4291337.558 51.36
   LOCATION L0000019     VOLUME   650442.537 4291340.541 50.69
   LOCATION L0000020     VOLUME   650469.010 4291343.524 50.02
   LOCATION L0000021     VOLUME   650493.276 4291354.226 49.91
   LOCATION L0000022     VOLUME   650519.570 4291356.477 50.17
   LOCATION L0000023     VOLUME   650546.195 4291357.368 50.47
   LOCATION L0000024     VOLUME   650572.821 4291358.260 50.78
   LOCATION L0000025     VOLUME   650599.446 4291359.152 51.08
   LOCATION L0000026     VOLUME   650626.071 4291360.044 51.38
   LOCATION L0000027     VOLUME   650652.696 4291360.935 51.69
   LOCATION L0000028     VOLUME   650679.321 4291361.827 51.99
   LOCATION L0000029     VOLUME   650705.946 4291362.719 52.30
   LOCATION L0000030     VOLUME   650732.571 4291363.611 52.60
** END OF LINE VOLUME SOURCE ID = SLINE21
** --------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY SEPARATED VOLUME SOURCES (2W)
** LINE VOLUME SOURCE ID = SLINE31
** DESCRSRC HAUL TRUCK ROUTE
** PREFIX
** LENGTH OF SIDE = 13.32
** CONFIGURATION = SEPARATED 2W
** EMISSION RATE = 0.0000273
** ELEVATED
** VERTICAL DIMENSION = 6.80
```

```
** SZINIT = 1.58
** NODES = 12
** 650749.382, 4291365.900, 52.80, 3.40, 12.39
** 650769.869, 4291354.193, 53.32, 3.40, 12.39
** 650791.088, 4291354.193, 54.12, 3.40, 12.39
** 650851.817, 4291356.389, 57.08, 3.40, 12.39
** 650904.497, 4291360.779, 59.63, 3.40, 12.39
** 650969.616, 4291360.047, 61.96, 3.40, 12.39
** 651015.712, 4291355.657, 55.86, 3.40, 12.39
** 651047.905, 4291351.267, 55.97, 3.40, 12.39
** 651094.001, 4291343.950, 62.58, 3.40, 12.39
** 651145.218, 4291327.122, 60.86, 3.40, 12.39
** 651181.801, 4291313.220, 59.05, 3.40, 12.39
** 651213.995, 4291296.391, 56.93, 3.40, 12.39
** ----------------------------------------------------------------
   LOCATION L0004728     VOLUME   650755.165 4291362.596 52.95
   LOCATION L0004729     VOLUME   650779.573 4291354.193 53.69
   LOCATION L0004730     VOLUME   650806.203 4291354.740 54.86
   LOCATION L0004731     VOLUME   650832.826 4291355.702 56.15
   LOCATION L0004732     VOLUME   650859.427 4291357.023 57.45
   LOCATION L0004733     VOLUME   650885.975 4291359.235 58.73
   LOCATION L0004734     VOLUME   650912.551 4291360.688 59.92
   LOCATION L0004735     VOLUME   650939.189 4291360.389 60.87
   LOCATION L0004736     VOLUME   650965.827 4291360.089 61.82
   LOCATION L0004737     VOLUME   650992.364 4291357.880 58.95
   LOCATION L0004738     VOLUME   651018.869 4291355.226 55.87
   LOCATION L0004739     VOLUME   651045.265 4291351.627 55.96
   LOCATION L0004740     VOLUME   651071.584 4291347.508 59.37
   LOCATION L0004741     VOLUME   651097.746 4291342.719 62.45
   LOCATION L0004742     VOLUME   651123.055 4291334.404 61.60
   LOCATION L0004743     VOLUME   651148.314 4291325.945 60.71
   LOCATION L0004744     VOLUME   651173.216 4291316.482 59.47
   LOCATION L0004745     VOLUME   651197.271 4291305.133 58.03
** END OF LINE VOLUME SOURCE ID = SLINE31
   LOCATION VOL41        VOLUME     649972.110  4291194.820       53.080
** DESCRSRC HAUL TRUCK ROUTE
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY SEPARATED VOLUME SOURCES (2W)
** LINE VOLUME SOURCE ID = SLINE51
** DESCRSRC MOVING TRAIN BALLAST DELIVERY
** PREFIX
** LENGTH OF SIDE = 12.00
** CONFIGURATION = SEPARATED 2W
** EMISSION RATE = 3.28E-07
** ELEVATED
** VERTICAL DIMENSION = 11.30
** SZINIT = 2.63
** NODES = 12
** 648625.012, 4291380.197, 48.69, 5.65, 11.16
** 649080.310, 4290820.972, 49.74, 5.65, 11.16
```

```
** 649175.989, 4290754.987, 49.69, 5.65, 11.16
** 649235.376, 4290725.293, 49.89, 5.65, 11.16
** 649281.565, 4290718.695, 49.68, 5.65, 11.16
** 649336.003, 4290731.892, 49.81, 5.65, 11.16
** 649395.390, 4290774.782, 50.00, 5.65, 11.16
** 649664.280, 4290984.286, 51.65, 5.65, 11.16
** 649962.864, 4291218.533, 53.58, 5.65, 11.16
** 650101.433, 4291291.117, 53.69, 5.65, 11.16
** 650320.834, 4291368.650, 53.75, 5.65, 11.16
** 650498.994, 4291401.643, 53.85, 5.65, 11.16
** ------------------------------------------------------------------
   LOCATION L0004746     VOLUME   648628.800 4291375.544 48.70
   LOCATION L0004747     VOLUME   648643.953 4291356.933 48.73
   LOCATION L0004748     VOLUME   648659.106 4291338.321 48.77
   LOCATION L0004749     VOLUME   648674.258 4291319.710 48.80
   LOCATION L0004750     VOLUME   648689.411 4291301.098 48.84
   LOCATION L0004751     VOLUME   648704.564 4291282.486 48.87
   LOCATION L0004752     VOLUME   648719.717 4291263.875 48.91
   LOCATION L0004753     VOLUME   648734.870 4291245.263 48.94
   LOCATION L0004754     VOLUME   648750.022 4291226.652 48.98
   LOCATION L0004755     VOLUME   648765.175 4291208.040 49.01
   LOCATION L0004756     VOLUME   648780.328 4291189.428 49.05
   LOCATION L0004757     VOLUME   648795.481 4291170.817 49.08
   LOCATION L0004758     VOLUME   648810.634 4291152.205 49.12
   LOCATION L0004759     VOLUME   648825.787 4291133.593 49.15
   LOCATION L0004760     VOLUME   648840.939 4291114.982 49.19
   LOCATION L0004761     VOLUME   648856.092 4291096.370 49.22
   LOCATION L0004762     VOLUME   648871.245 4291077.759 49.26
   LOCATION L0004763     VOLUME   648886.398 4291059.147 49.29
   LOCATION L0004764     VOLUME   648901.551 4291040.535 49.33
   LOCATION L0004765     VOLUME   648916.703 4291021.924 49.36
   LOCATION L0004766     VOLUME   648931.856 4291003.312 49.40
   LOCATION L0004767     VOLUME   648947.009 4290984.701 49.43
   LOCATION L0004768     VOLUME   648962.162 4290966.089 49.47
   LOCATION L0004769     VOLUME   648977.315 4290947.477 49.50
   LOCATION L0004770     VOLUME   648992.468 4290928.866 49.54
   LOCATION L0004771     VOLUME   649007.620 4290910.254 49.57
   LOCATION L0004772     VOLUME   649022.773 4290891.643 49.61
   LOCATION L0004773     VOLUME   649037.926 4290873.031 49.64
   LOCATION L0004774     VOLUME   649053.079 4290854.419 49.68
   LOCATION L0004775     VOLUME   649068.232 4290835.808 49.71
   LOCATION L0004776     VOLUME   649084.319 4290818.208 49.74
   LOCATION L0004777     VOLUME   649104.076 4290804.582 49.73
   LOCATION L0004778     VOLUME   649123.833 4290790.956 49.72
   LOCATION L0004779     VOLUME   649143.590 4290777.331 49.71
   LOCATION L0004780     VOLUME   649163.347 4290763.705 49.70
   LOCATION L0004781     VOLUME   649183.720 4290751.121 49.72
   LOCATION L0004782     VOLUME   649205.186 4290740.388 49.79
   LOCATION L0004783     VOLUME   649226.652 4290729.655 49.86
   LOCATION L0004784     VOLUME   649249.479 4290723.278 49.83
```

LOCATION L0004785 VOLUME 649273.238 4290719.884 49.72
LOCATION L0004786 VOLUME 649296.715 4290722.367 49.72
LOCATION L0004787 VOLUME 649320.039 4290728.022 49.77
LOCATION L0004788 VOLUME 649342.143 4290736.326 49.83
LOCATION L0004789 VOLUME 649361.599 4290750.378 49.89
LOCATION L0004790 VOLUME 649381.055 4290764.429 49.95
LOCATION L0004791 VOLUME 649400.374 4290778.665 50.03
LOCATION L0004792 VOLUME 649419.306 4290793.416 50.15
LOCATION L0004793 VOLUME 649438.238 4290808.166 50.26
LOCATION L0004794 VOLUME 649457.170 4290822.917 50.38
LOCATION L0004795 VOLUME 649476.101 4290837.668 50.50
LOCATION L0004796 VOLUME 649495.033 4290852.418 50.61
LOCATION L0004797 VOLUME 649513.965 4290867.169 50.73
LOCATION L0004798 VOLUME 649532.897 4290881.920 50.84
LOCATION L0004799 VOLUME 649551.829 4290896.670 50.96
LOCATION L0004800 VOLUME 649570.761 4290911.421 51.08
LOCATION L0004801 VOLUME 649589.693 4290926.172 51.19
LOCATION L0004802 VOLUME 649608.625 4290940.922 51.31
LOCATION L0004803 VOLUME 649627.557 4290955.673 51.42
LOCATION L0004804 VOLUME 649646.489 4290970.424 51.54
LOCATION L0004805 VOLUME 649665.418 4290985.178 51.66
LOCATION L0004806 VOLUME 649684.300 4290999.992 51.78
LOCATION L0004807 VOLUME 649703.183 4291014.806 51.90
LOCATION L0004808 VOLUME 649722.065 4291029.620 52.02
LOCATION L0004809 VOLUME 649740.948 4291044.434 52.15
LOCATION L0004810 VOLUME 649759.830 4291059.248 52.27
LOCATION L0004811 VOLUME 649778.713 4291074.061 52.39
LOCATION L0004812 VOLUME 649797.595 4291088.875 52.51
LOCATION L0004813 VOLUME 649816.478 4291103.689 52.63
LOCATION L0004814 VOLUME 649835.360 4291118.503 52.76
LOCATION L0004815 VOLUME 649854.243 4291133.317 52.88
LOCATION L0004816 VOLUME 649873.125 4291148.131 53.00
LOCATION L0004817 VOLUME 649892.008 4291162.945 53.12
LOCATION L0004818 VOLUME 649910.890 4291177.759 53.24
LOCATION L0004819 VOLUME 649929.773 4291192.573 53.37
LOCATION L0004820 VOLUME 649948.655 4291207.386 53.49
LOCATION L0004821 VOLUME 649968.126 4291221.290 53.58
LOCATION L0004822 VOLUME 649989.386 4291232.426 53.60
LOCATION L0004823 VOLUME 650010.646 4291243.562 53.62
LOCATION L0004824 VOLUME 650031.906 4291254.699 53.63
LOCATION L0004825 VOLUME 650053.166 4291265.835 53.65
LOCATION L0004826 VOLUME 650074.426 4291276.971 53.67
LOCATION L0004827 VOLUME 650095.686 4291288.107 53.69
LOCATION L0004828 VOLUME 650117.945 4291296.952 53.69
LOCATION L0004829 VOLUME 650140.573 4291304.949 53.70
LOCATION L0004830 VOLUME 650163.202 4291312.945 53.71
LOCATION L0004831 VOLUME 650185.831 4291320.942 53.71
LOCATION L0004832 VOLUME 650208.459 4291328.939 53.72
LOCATION L0004833 VOLUME 650231.088 4291336.935 53.73
LOCATION L0004834 VOLUME 650253.716 4291344.932 53.73

```
   LOCATION L0004835     VOLUME   650276.345 4291352.928 53.74
   LOCATION L0004836     VOLUME   650298.974 4291360.925 53.74
   LOCATION L0004837     VOLUME   650321.635 4291368.798 53.75
   LOCATION L0004838     VOLUME   650345.234 4291373.168 53.76
   LOCATION L0004839     VOLUME   650368.833 4291377.539 53.78
   LOCATION L0004840     VOLUME   650392.432 4291381.909 53.79
   LOCATION L0004841     VOLUME   650416.030 4291386.279 53.80
   LOCATION L0004842     VOLUME   650439.629 4291390.649 53.82
   LOCATION L0004843     VOLUME   650463.228 4291395.019 53.83
   LOCATION L0004844     VOLUME   650486.827 4291399.389 53.84
** END OF LINE VOLUME SOURCE ID = SLINE51
   LOCATION VOL1         VOLUME     650665.251  4291406.930       53.240
** DESCRSRC WORK AREA 1 -CONSTRUCTION EQUIPMENT TRUCKS
   LOCATION VOL2         VOLUME     650563.968  4291398.425       53.160
** DESCRSRC CONSTRUCTION EQUIPMENT EXHAUST WORK AREA #2
   LOCATION VOL3         VOLUME     650456.370  4291399.520       53.930
** DESCRSRC WORK AREA #3 CONSTRUCTION EQUIPMENT EXHAUST
** ------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE43
** DESCRSRC CONSTRUCTION EQUIPMENT WORK AREA #3
** PREFIX
** LENGTH OF SIDE = 87.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000375
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 8
** 650396.283, 4291415.230, 53.09, 3.40, 40.47
** 650339.492, 4291407.868, 54.51, 3.40, 40.47
** 650291.115, 4291397.351, 54.58, 3.40, 40.47
** 650226.962, 4291374.214, 54.26, 3.40, 40.47
** 650171.223, 4291357.387, 54.56, 3.40, 40.47
** 650088.140, 4291323.733, 54.83, 3.40, 40.47
** 649981.921, 4291266.943, 52.81, 3.40, 40.47
** 649931.440, 4291236.444, 52.99, 3.40, 40.47
** ------------------------------------------------------------------
   LOCATION L0004845     VOLUME   650353.144 4291409.638 54.17
   LOCATION L0004846     VOLUME   650268.796 4291389.301 54.47
   LOCATION L0004847     VOLUME   650186.248 4291361.923 54.48
   LOCATION L0004848     VOLUME   650105.134 4291330.617 54.77
   LOCATION L0004849     VOLUME   650027.586 4291291.358 53.68
   LOCATION L0004850     VOLUME   649951.778 4291248.731 52.92
** END OF LINE VOLUME SOURCE ID = SLINE43
** ------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE44
** DESCRSRC CONSTRUCTION EQUIPMENT WORK AREA #3
** PREFIX
```

```
** LENGTH OF SIDE = 57.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000375
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 3
** 649898.118, 4291201.738, 52.60, 3.40, 26.51
** 649581.371, 4290941.907, 50.98, 3.40, 26.51
** 649582.608, 4290945.618, 50.95, 3.40, 26.51
** ----------------------------------------------------------------------
   LOCATION L0004851     VOLUME   649876.084 4291183.663 52.49
   LOCATION L0004852     VOLUME   649832.014 4291147.512 52.26
   LOCATION L0004853     VOLUME   649787.945 4291111.362 52.04
   LOCATION L0004854     VOLUME   649743.875 4291075.211 51.81
   LOCATION L0004855     VOLUME   649699.806 4291039.060 51.59
   LOCATION L0004856     VOLUME   649655.736 4291002.909 51.36
   LOCATION L0004857     VOLUME   649611.667 4290966.758 51.13
** END OF LINE VOLUME SOURCE ID = SLINE44
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE45
** DESCRSRC CONSTRUCTION EQUIPMENT EXHAUST TO YOSEMITE AVE
** PREFIX
** LENGTH OF SIDE = 79.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000375
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 2
** 649582.567, 4290938.264, 50.99, 3.40, 36.74
** 649458.557, 4290838.151, 50.39, 3.40, 36.74
** ----------------------------------------------------------------------
   LOCATION L0004858     VOLUME   649551.832 4290913.452 50.84
   LOCATION L0004859     VOLUME   649490.363 4290863.828 50.54
** END OF LINE VOLUME SOURCE ID = SLINE45
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE46
** DESCRSRC CONSTRUCITON EQUIPMENT EXHASUT TO Y
** PREFIX
** LENGTH OF SIDE = 50.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000375
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 2
** 649445.530, 4290815.617, 50.23, 3.40, 23.26
```

```
** 649303.390, 4290698.508, 49.82, 3.40, 23.26
** ----------------------------------------------------------------
   LOCATION L0004860     VOLUME   649426.235 4290799.720 50.17
   LOCATION L0004861     VOLUME   649387.646 4290767.926 50.06
   LOCATION L0004862     VOLUME   649349.056 4290736.133 49.95
   LOCATION L0004863     VOLUME   649310.467 4290704.339 49.84
** END OF LINE VOLUME SOURCE ID = SLINE46
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE47
** DESCRSRC CONSTRUCTION EQUIPMENT TO SOUTH END OF WORK AREA
** PREFIX
** LENGTH OF SIDE = 25.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0000375
** ELEVATED
** VERTICAL DIMENSION = 6.80
** SZINIT = 1.58
** NODES = 2
** 649138.007, 4290774.495, 49.32, 3.40, 11.63
** 649266.737, 4290695.826, 49.56, 3.40, 11.63
** ----------------------------------------------------------------
   LOCATION L0004864     VOLUME   649148.673 4290767.977 49.34
   LOCATION L0004865     VOLUME   649170.005 4290754.941 49.38
   LOCATION L0004866     VOLUME   649191.337 4290741.904 49.42
   LOCATION L0004867     VOLUME   649212.669 4290728.868 49.46
   LOCATION L0004868     VOLUME   649234.001 4290715.832 49.50
   LOCATION L0004869     VOLUME   649255.333 4290702.796 49.54
** END OF LINE VOLUME SOURCE ID = SLINE47
   LOCATION VOL12        VOLUME     650665.251  4291406.930       53.240
** DESCRSRC WORK AREA 1 -CONSTRUCTION PICKUP TRUCKS
   LOCATION VOL22        VOLUME     650563.968  4291398.425       53.160
** DESCRSRC CONSTRUCTION EQUIPMENT PICKUP EXHAUST WORK AREA #2
   LOCATION VOL32        VOLUME     650456.370  4291399.520       53.930
** DESCRSRC WORK AREA #3 CONSTRUCTION PICKUP TRUCK EXHAUST
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE432
** DESCRSRC CONSTRUCTION PICKUP TRUCK WORK AREA #3
** PREFIX
** LENGTH OF SIDE = 87.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 8
** 650396.283, 4291415.230, 53.09, 1.30, 40.47
** 650339.492, 4291407.868, 54.51, 1.30, 40.47
** 650291.115, 4291397.351, 54.58, 1.30, 40.47
```

```
** 650226.962, 4291374.214, 54.26, 1.30, 40.47
** 650171.223, 4291357.387, 54.56, 1.30, 40.47
** 650088.140, 4291323.733, 54.83, 1.30, 40.47
** 649981.921, 4291266.943, 52.81, 1.30, 40.47
** 649931.440, 4291236.444, 52.99, 1.30, 40.47
** ----------------------------------------------------------------------
   LOCATION L0004870     VOLUME   650353.144 4291409.638 54.17
   LOCATION L0004871     VOLUME   650268.796 4291389.301 54.47
   LOCATION L0004872     VOLUME   650186.248 4291361.923 54.48
   LOCATION L0004873     VOLUME   650105.134 4291330.617 54.77
   LOCATION L0004874     VOLUME   650027.586 4291291.358 53.68
   LOCATION L0004875     VOLUME   649951.778 4291248.731 52.92
** END OF LINE VOLUME SOURCE ID = SLINE432
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE444
** DESCRSRC CONSTRUCTION PICKUP TRUCK WORK AREA #3
** PREFIX
** LENGTH OF SIDE = 57.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 3
** 649898.118, 4291201.738, 52.60, 1.30, 26.51
** 649581.371, 4290941.907, 50.98, 1.30, 26.51
** 649582.608, 4290945.618, 50.95, 1.30, 26.51
** ----------------------------------------------------------------------
   LOCATION L0004876     VOLUME   649876.084 4291183.663 52.49
   LOCATION L0004877     VOLUME   649832.014 4291147.512 52.26
   LOCATION L0004878     VOLUME   649787.945 4291111.362 52.04
   LOCATION L0004879     VOLUME   649743.875 4291075.211 51.81
   LOCATION L0004880     VOLUME   649699.806 4291039.060 51.59
   LOCATION L0004881     VOLUME   649655.736 4291002.909 51.36
   LOCATION L0004882     VOLUME   649611.667 4290966.758 51.13
** END OF LINE VOLUME SOURCE ID = SLINE444
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE452
** DESCRSRC CONSTRUCTION PICKUP TRUCK EXHAUST TO YOSEMITE AVE
** PREFIX
** LENGTH OF SIDE = 79.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 2
** 649582.567, 4290938.264, 50.99, 1.30, 36.74
```

```
** 649458.557, 4290838.151, 50.39, 1.30, 36.74
** ----------------------------------------------------------------
   LOCATION L0004883     VOLUME   649551.832 4290913.452 50.84
   LOCATION L0004884     VOLUME   649490.363 4290863.828 50.54
** END OF LINE VOLUME SOURCE ID = SLINE452
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE462
** DESCRSRC CONSTRUCITON PICKUP TUCK EXHASUT TO Y
** PREFIX
** LENGTH OF SIDE = 50.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 2
** 649445.530, 4290815.617, 50.23, 1.30, 23.26
** 649303.390, 4290698.508, 49.82, 1.30, 23.26
** ----------------------------------------------------------------
   LOCATION L0004885     VOLUME   649426.235 4290799.720 50.17
   LOCATION L0004886     VOLUME   649387.646 4290767.926 50.06
   LOCATION L0004887     VOLUME   649349.056 4290736.133 49.95
   LOCATION L0004888     VOLUME   649310.467 4290704.339 49.84
** END OF LINE VOLUME SOURCE ID = SLINE462
** ----------------------------------------------------------------
** LINE SOURCE REPRESENTED BY ADJACENT VOLUME SOURCES
** LINE VOLUME SOURCE ID = SLINE472
** DESCRSRC CONSTRUCTION PICKUP TRUCK TO SOUTH END OF WORK AREA
** PREFIX
** LENGTH OF SIDE = 25.00
** CONFIGURATION = ADJACENT
** EMISSION RATE = 0.0
** ELEVATED
** VERTICAL DIMENSION = 2.60
** SZINIT = 0.60
** NODES = 2
** 649138.007, 4290774.495, 49.32, 1.30, 11.63
** 649266.737, 4290695.826, 49.56, 1.30, 11.63
** ----------------------------------------------------------------
   LOCATION L0004889     VOLUME   649148.673 4290767.977 49.34
   LOCATION L0004890     VOLUME   649170.005 4290754.941 49.38
   LOCATION L0004891     VOLUME   649191.337 4290741.904 49.42
   LOCATION L0004892     VOLUME   649212.669 4290728.868 49.46
   LOCATION L0004893     VOLUME   649234.001 4290715.832 49.50
   LOCATION L0004894     VOLUME   649255.333 4290702.796 49.54
** END OF LINE VOLUME SOURCE ID = SLINE472
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE21
   SRCPARAM L0000001     0.00000091      3.40     12.39      1.58
```

```
   SRCPARAM L0000002     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000003     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000004     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000005     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000006     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000007     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000008     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000009     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000010     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000011     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000012     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000013     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000014     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000015     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000016     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000017     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000018     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000019     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000020     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000021     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000022     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000023     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000024     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000025     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000026     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000027     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000028     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000029     0.00000091      3.40     12.39      1.58
   SRCPARAM L0000030     0.00000091      3.40     12.39      1.58
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE31
   SRCPARAM L0004728     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004729     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004730     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004731     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004732     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004733     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004734     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004735     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004736     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004737     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004738     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004739     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004740     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004741     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004742     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004743     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004744     0.000001517      3.40     12.39      1.58
   SRCPARAM L0004745     0.000001517      3.40     12.39      1.58
** ------------------------------------------------------------------
```

```
   SRCPARAM VOL41        0.0000273     3.400     3.951     3.160
** LINE VOLUME SOURCE ID = SLINE51
   SRCPARAM L0004746     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004747     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004748     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004749     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004750     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004751     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004752     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004753     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004754     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004755     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004756     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004757     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004758     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004759     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004760     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004761     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004762     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004763     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004764     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004765     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004766     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004767     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004768     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004769     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004770     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004771     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004772     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004773     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004774     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004775     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004776     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004777     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004778     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004779     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004780     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004781     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004782     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004783     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004784     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004785     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004786     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004787     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004788     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004789     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004790     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004791     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004792     0.000000003313      5.65     11.16      2.63
   SRCPARAM L0004793     0.000000003313      5.65     11.16      2.63
```

```
SRCPARAM L0004794     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004795     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004796     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004797     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004798     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004799     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004800     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004801     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004802     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004803     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004804     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004805     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004806     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004807     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004808     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004809     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004810     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004811     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004812     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004813     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004814     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004815     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004816     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004817     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004818     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004819     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004820     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004821     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004822     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004823     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004824     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004825     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004826     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004827     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004828     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004829     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004830     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004831     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004832     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004833     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004834     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004835     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004836     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004837     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004838     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004839     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004840     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004841     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004842     0.000000003313      5.65     11.16      2.63
SRCPARAM L0004843     0.000000003313      5.65     11.16      2.63
```

```
   SRCPARAM L0004844     0.000000003313      5.65     11.16      2.63
** ----------------------------------------------------------------------
   SRCPARAM VOL1         0.0000375     3.400    11.628     3.160
   SRCPARAM VOL2         0.0000375     3.400    20.233     3.160
   SRCPARAM VOL3         0.0000375     3.400    15.116     3.160
** LINE VOLUME SOURCE ID = SLINE43
   SRCPARAM L0004845     0.00000625      3.40     40.47      1.58
   SRCPARAM L0004846     0.00000625      3.40     40.47      1.58
   SRCPARAM L0004847     0.00000625      3.40     40.47      1.58
   SRCPARAM L0004848     0.00000625      3.40     40.47      1.58
   SRCPARAM L0004849     0.00000625      3.40     40.47      1.58
   SRCPARAM L0004850     0.00000625      3.40     40.47      1.58
** ----------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE44
   SRCPARAM L0004851     0.000005357      3.40     26.51      1.58
   SRCPARAM L0004852     0.000005357      3.40     26.51      1.58
   SRCPARAM L0004853     0.000005357      3.40     26.51      1.58
   SRCPARAM L0004854     0.000005357      3.40     26.51      1.58
   SRCPARAM L0004855     0.000005357      3.40     26.51      1.58
   SRCPARAM L0004856     0.000005357      3.40     26.51      1.58
   SRCPARAM L0004857     0.000005357      3.40     26.51      1.58
** ----------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE45
   SRCPARAM L0004858     0.00001875      3.40     36.74      1.58
   SRCPARAM L0004859     0.00001875      3.40     36.74      1.58
** ----------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE46
   SRCPARAM L0004860     0.000009375      3.40     23.26      1.58
   SRCPARAM L0004861     0.000009375      3.40     23.26      1.58
   SRCPARAM L0004862     0.000009375      3.40     23.26      1.58
   SRCPARAM L0004863     0.000009375      3.40     23.26      1.58
** ----------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE47
   SRCPARAM L0004864     0.00000625      3.40     11.63      1.58
   SRCPARAM L0004865     0.00000625      3.40     11.63      1.58
   SRCPARAM L0004866     0.00000625      3.40     11.63      1.58
   SRCPARAM L0004867     0.00000625      3.40     11.63      1.58
   SRCPARAM L0004868     0.00000625      3.40     11.63      1.58
   SRCPARAM L0004869     0.00000625      3.40     11.63      1.58
** ----------------------------------------------------------------------
   SRCPARAM VOL12              0.0     1.300    11.628     1.210
   SRCPARAM VOL22              0.0     1.300    20.233     1.210
   SRCPARAM VOL32              0.0     1.300    15.116     1.210
** LINE VOLUME SOURCE ID = SLINE432
   SRCPARAM L0004870           0.0      1.30     40.47      0.60
   SRCPARAM L0004871           0.0      1.30     40.47      0.60
   SRCPARAM L0004872           0.0      1.30     40.47      0.60
   SRCPARAM L0004873           0.0      1.30     40.47      0.60
   SRCPARAM L0004874           0.0      1.30     40.47      0.60
   SRCPARAM L0004875           0.0      1.30     40.47      0.60
```

```
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE444
   SRCPARAM L0004876          0.0      1.30     26.51      0.60
   SRCPARAM L0004877          0.0      1.30     26.51      0.60
   SRCPARAM L0004878          0.0      1.30     26.51      0.60
   SRCPARAM L0004879          0.0      1.30     26.51      0.60
   SRCPARAM L0004880          0.0      1.30     26.51      0.60
   SRCPARAM L0004881          0.0      1.30     26.51      0.60
   SRCPARAM L0004882          0.0      1.30     26.51      0.60
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE452
   SRCPARAM L0004883          0.0      1.30     36.74      0.60
   SRCPARAM L0004884          0.0      1.30     36.74      0.60
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE462
   SRCPARAM L0004885          0.0      1.30     23.26      0.60
   SRCPARAM L0004886          0.0      1.30     23.26      0.60
   SRCPARAM L0004887          0.0      1.30     23.26      0.60
   SRCPARAM L0004888          0.0      1.30     23.26      0.60
** ------------------------------------------------------------------
** LINE VOLUME SOURCE ID = SLINE472
   SRCPARAM L0004889          0.0      1.30     11.63      0.60
   SRCPARAM L0004890          0.0      1.30     11.63      0.60
   SRCPARAM L0004891          0.0      1.30     11.63      0.60
   SRCPARAM L0004892          0.0      1.30     11.63      0.60
   SRCPARAM L0004893          0.0      1.30     11.63      0.60
   SRCPARAM L0004894          0.0      1.30     11.63      0.60
** ------------------------------------------------------------------
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "AERMOD LAYOVER CONSTRUCT.ROU"
RE FINISHED
**
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\MET DATA\14-18.SFC"
   PROFFILE "..\..\MET DATA\14-18.PFL"
   SURFDATA 93225 2014
```

```
   UAIRDATA 23230 2014 OAKLAND/WSO_AP
   PROFBASE 8.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
** AUTO-GENERATED PLOTFILES
   PLOTFILE   PERIOD ALL "AERMOD LAYOVER CONSTRUCT UNMITIGATED\PE00GALL.PLT" 31
   FILEFORM EXP
   SUMMFILE "AERMOD LAYOVER CONSTRUCT.SUM"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of           30 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 SO W320     690        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     691        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     692        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     694        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     695        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     696        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     697        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     698        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     699        VPARM: Input Parameter May Be Out-of-Range for Parameter
        QS
 SO W320     702        VPARM: Input Parameter May Be Out-of-Range for Parameter
```

```
       QS
 SO W320     703        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     704        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     705        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     706        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     707        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     708        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     711        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     712        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     715        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     716        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     717        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     718        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     721        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     722        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     723        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     724        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     725        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 SO W320     726        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
 ME W186     752       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
 ME W187     752       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED                ***        07/10/23
 *** AERMET - VERSION  19191 ***   ***
                         ***       21:24:19
```

```
                                   PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                            ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for   204 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2500000.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Accepts FLAGPOLE Receptor . Heights.
      * The User Specified a Pollutant Type of: DPM

 **Model Calculates PERIOD Averages Only

 **This Run Includes:    204 Source(s);       1 Source Group(s); and     329
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:    204 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
                 and:      0 SWPOINT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191
```

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

          NOTE: Option for EXPonential format used in formatted output result files
(FILEFORM Keyword)

 **NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   8.00 ; Decay
Coef. =   0.000   ; Rot. Angle =   0.0
                  Emission Units = GRAMS/SEC   ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =   3.6 MB of RAM.

 **Input Runstream File: aermod.inp

 **Output Print File: aermod.out

 **Detailed Error/Message File: AERMOD LAYOVER CONSTRUCT.ERR

 **File for Summary of Results: AERMOD LAYOVER CONSTRUCT.SUM

↟ *** AERMOD - VERSION 22112 ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED   ***   07/10/23
 *** AERMET - VERSION 19191 ***   ***
                        ***   21:24:19

                                  PAGE   2
 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

                                                  *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE   BASE   RELEASE   INIT.
INIT.   URBAN EMISSION RATE
   SOURCE   PART. (GRAMS/SEC)   X   Y   ELEV.   HEIGHT   SY
SZ   SOURCE SCALAR VARY
     ID   CATS.   (METERS) (METERS) (METERS) (METERS) (METERS)

```
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0000001         0   0.91000E-06  649993.6 4291183.8    52.6     3.40    12.39
1.58     YES
 L0000002         0   0.91000E-06  650017.0 4291196.4    52.7     3.40    12.39
1.58     YES
 L0000003         0   0.91000E-06  650040.5 4291209.1    52.8     3.40    12.39
1.58     YES
 L0000004         0   0.91000E-06  650063.9 4291221.7    52.9     3.40    12.39
1.58     YES
 L0000005         0   0.91000E-06  650087.4 4291234.4    53.0     3.40    12.39
1.58     YES
 L0000006         0   0.91000E-06  650110.8 4291247.0    53.1     3.40    12.39
1.58     YES
 L0000007         0   0.91000E-06  650134.9 4291258.4    53.2     3.40    12.39
1.58     YES
 L0000008         0   0.91000E-06  650159.5 4291268.4    53.3     3.40    12.39
1.58     YES
 L0000009         0   0.91000E-06  650184.2 4291278.5    53.3     3.40    12.39
1.58     YES
 L0000010         0   0.91000E-06  650209.3 4291287.6    53.4     3.40    12.39
1.58     YES
 L0000011         0   0.91000E-06  650234.8 4291295.2    53.5     3.40    12.39
1.58     YES
 L0000012         0   0.91000E-06  650260.3 4291302.9    53.6     3.40    12.39
1.58     YES
 L0000013         0   0.91000E-06  650285.8 4291310.5    53.6     3.40    12.39
1.58     YES
 L0000014         0   0.91000E-06  650311.7 4291316.6    53.2     3.40    12.39
1.58     YES
 L0000015         0   0.91000E-06  650337.7 4291322.7    52.8     3.40    12.39
1.58     YES
 L0000016         0   0.91000E-06  650363.6 4291328.8    52.4     3.40    12.39
1.58     YES
 L0000017         0   0.91000E-06  650389.6 4291334.6    52.0     3.40    12.39
1.58     YES
 L0000018         0   0.91000E-06  650416.1 4291337.6    51.4     3.40    12.39
1.58     YES
 L0000019         0   0.91000E-06  650442.5 4291340.5    50.7     3.40    12.39
1.58     YES
 L0000020         0   0.91000E-06  650469.0 4291343.5    50.0     3.40    12.39
1.58     YES
 L0000021         0   0.91000E-06  650493.3 4291354.2    49.9     3.40    12.39
1.58     YES
 L0000022         0   0.91000E-06  650519.6 4291356.5    50.2     3.40    12.39
1.58     YES
 L0000023         0   0.91000E-06  650546.2 4291357.4    50.5     3.40    12.39
1.58     YES
```

```
 L0000024         0   0.91000E-06  650572.8 4291358.3    50.8     3.40    12.39
1.58     YES
 L0000025         0   0.91000E-06  650599.4 4291359.2    51.1     3.40    12.39
1.58     YES
 L0000026         0   0.91000E-06  650626.1 4291360.0    51.4     3.40    12.39
1.58     YES
 L0000027         0   0.91000E-06  650652.7 4291360.9    51.7     3.40    12.39
1.58     YES
 L0000028         0   0.91000E-06  650679.3 4291361.8    52.0     3.40    12.39
1.58     YES
 L0000029         0   0.91000E-06  650705.9 4291362.7    52.3     3.40    12.39
1.58     YES
 L0000030         0   0.91000E-06  650732.6 4291363.6    52.6     3.40    12.39
1.58     YES
 L0004728         0   0.15170E-05  650755.2 4291362.6    52.9     3.40    12.39
1.58     YES
 L0004729         0   0.15170E-05  650779.6 4291354.2    53.7     3.40    12.39
1.58     YES
 L0004730         0   0.15170E-05  650806.2 4291354.7    54.9     3.40    12.39
1.58     YES
 L0004731         0   0.15170E-05  650832.8 4291355.7    56.1     3.40    12.39
1.58     YES
 L0004732         0   0.15170E-05  650859.4 4291357.0    57.4     3.40    12.39
1.58     YES
 L0004733         0   0.15170E-05  650886.0 4291359.2    58.7     3.40    12.39
1.58     YES
 L0004734         0   0.15170E-05  650912.6 4291360.7    59.9     3.40    12.39
1.58     YES
 L0004735         0   0.15170E-05  650939.2 4291360.4    60.9     3.40    12.39
1.58     YES
 L0004736         0   0.15170E-05  650965.8 4291360.1    61.8     3.40    12.39
1.58     YES
 L0004737         0   0.15170E-05  650992.4 4291357.9    58.9     3.40    12.39
1.58     YES
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED               ***       07/10/23
 *** AERMET - VERSION  19191 ***   ***
                        ***       21:24:19

                                  PAGE   3
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
```

```
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0004738         0   0.15170E-05  651018.9 4291355.2    55.9     3.40    12.39
1.58     YES
 L0004739         0   0.15170E-05  651045.3 4291351.6    56.0     3.40    12.39
1.58     YES
 L0004740         0   0.15170E-05  651071.6 4291347.5    59.4     3.40    12.39
1.58     YES
 L0004741         0   0.15170E-05  651097.7 4291342.7    62.4     3.40    12.39
1.58     YES
 L0004742         0   0.15170E-05  651123.1 4291334.4    61.6     3.40    12.39
1.58     YES
 L0004743         0   0.15170E-05  651148.3 4291325.9    60.7     3.40    12.39
1.58     YES
 L0004744         0   0.15170E-05  651173.2 4291316.5    59.5     3.40    12.39
1.58     YES
 L0004745         0   0.15170E-05  651197.3 4291305.1    58.0     3.40    12.39
1.58     YES
 VOL41            0   0.27300E-04  649972.1 4291194.8    53.1     3.40     3.95
3.16     YES
 L0004746         0   0.33130E-08  648628.8 4291375.5    48.7     5.65    11.16
2.63     YES
 L0004747         0   0.33130E-08  648644.0 4291356.9    48.7     5.65    11.16
2.63     YES
 L0004748         0   0.33130E-08  648659.1 4291338.3    48.8     5.65    11.16
2.63     YES
 L0004749         0   0.33130E-08  648674.3 4291319.7    48.8     5.65    11.16
2.63     YES
 L0004750         0   0.33130E-08  648689.4 4291301.1    48.8     5.65    11.16
2.63     YES
 L0004751         0   0.33130E-08  648704.6 4291282.5    48.9     5.65    11.16
2.63     YES
 L0004752         0   0.33130E-08  648719.7 4291263.9    48.9     5.65    11.16
2.63     YES
 L0004753         0   0.33130E-08  648734.9 4291245.3    48.9     5.65    11.16
2.63     YES
 L0004754         0   0.33130E-08  648750.0 4291226.7    49.0     5.65    11.16
2.63     YES
 L0004755         0   0.33130E-08  648765.2 4291208.0    49.0     5.65    11.16
2.63     YES
 L0004756         0   0.33130E-08  648780.3 4291189.4    49.0     5.65    11.16
2.63     YES
 L0004757         0   0.33130E-08  648795.5 4291170.8    49.1     5.65    11.16
2.63     YES
 L0004758         0   0.33130E-08  648810.6 4291152.2    49.1     5.65    11.16
2.63     YES
 L0004759         0   0.33130E-08  648825.8 4291133.6    49.1     5.65    11.16
2.63     YES
```

```
 L0004760         0   0.33130E-08  648840.9 4291115.0    49.2     5.65    11.16
2.63     YES
 L0004761         0   0.33130E-08  648856.1 4291096.4    49.2     5.65    11.16
2.63     YES
 L0004762         0   0.33130E-08  648871.2 4291077.8    49.3     5.65    11.16
2.63     YES
 L0004763         0   0.33130E-08  648886.4 4291059.1    49.3     5.65    11.16
2.63     YES
 L0004764         0   0.33130E-08  648901.6 4291040.5    49.3     5.65    11.16
2.63     YES
 L0004765         0   0.33130E-08  648916.7 4291021.9    49.4     5.65    11.16
2.63     YES
 L0004766         0   0.33130E-08  648931.9 4291003.3    49.4     5.65    11.16
2.63     YES
 L0004767         0   0.33130E-08  648947.0 4290984.7    49.4     5.65    11.16
2.63     YES
 L0004768         0   0.33130E-08  648962.2 4290966.1    49.5     5.65    11.16
2.63     YES
 L0004769         0   0.33130E-08  648977.3 4290947.5    49.5     5.65    11.16
2.63     YES
 L0004770         0   0.33130E-08  648992.5 4290928.9    49.5     5.65    11.16
2.63     YES
 L0004771         0   0.33130E-08  649007.6 4290910.3    49.6     5.65    11.16
2.63     YES
 L0004772         0   0.33130E-08  649022.8 4290891.6    49.6     5.65    11.16
2.63     YES
 L0004773         0   0.33130E-08  649037.9 4290873.0    49.6     5.65    11.16
2.63     YES
 L0004774         0   0.33130E-08  649053.1 4290854.4    49.7     5.65    11.16
2.63     YES
 L0004775         0   0.33130E-08  649068.2 4290835.8    49.7     5.65    11.16
2.63     YES
 L0004776         0   0.33130E-08  649084.3 4290818.2    49.7     5.65    11.16
2.63     YES
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED               ***       07/10/23
 *** AERMET - VERSION  19191 ***   ***
                        ***       21:24:19

                                  PAGE   4
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
```

```
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0004777         0   0.33130E-08  649104.1 4290804.6    49.7     5.65    11.16
2.63     YES
 L0004778         0   0.33130E-08  649123.8 4290791.0    49.7     5.65    11.16
2.63     YES
 L0004779         0   0.33130E-08  649143.6 4290777.3    49.7     5.65    11.16
2.63     YES
 L0004780         0   0.33130E-08  649163.3 4290763.7    49.7     5.65    11.16
2.63     YES
 L0004781         0   0.33130E-08  649183.7 4290751.1    49.7     5.65    11.16
2.63     YES
 L0004782         0   0.33130E-08  649205.2 4290740.4    49.8     5.65    11.16
2.63     YES
 L0004783         0   0.33130E-08  649226.7 4290729.7    49.9     5.65    11.16
2.63     YES
 L0004784         0   0.33130E-08  649249.5 4290723.3    49.8     5.65    11.16
2.63     YES
 L0004785         0   0.33130E-08  649273.2 4290719.9    49.7     5.65    11.16
2.63     YES
 L0004786         0   0.33130E-08  649296.7 4290722.4    49.7     5.65    11.16
2.63     YES
 L0004787         0   0.33130E-08  649320.0 4290728.0    49.8     5.65    11.16
2.63     YES
 L0004788         0   0.33130E-08  649342.1 4290736.3    49.8     5.65    11.16
2.63     YES
 L0004789         0   0.33130E-08  649361.6 4290750.4    49.9     5.65    11.16
2.63     YES
 L0004790         0   0.33130E-08  649381.1 4290764.4    49.9     5.65    11.16
2.63     YES
 L0004791         0   0.33130E-08  649400.4 4290778.7    50.0     5.65    11.16
2.63     YES
 L0004792         0   0.33130E-08  649419.3 4290793.4    50.1     5.65    11.16
2.63     YES
 L0004793         0   0.33130E-08  649438.2 4290808.2    50.3     5.65    11.16
2.63     YES
 L0004794         0   0.33130E-08  649457.2 4290822.9    50.4     5.65    11.16
2.63     YES
 L0004795         0   0.33130E-08  649476.1 4290837.7    50.5     5.65    11.16
2.63     YES
 L0004796         0   0.33130E-08  649495.0 4290852.4    50.6     5.65    11.16
2.63     YES
 L0004797         0   0.33130E-08  649514.0 4290867.2    50.7     5.65    11.16
2.63     YES
 L0004798         0   0.33130E-08  649532.9 4290881.9    50.8     5.65    11.16
2.63     YES
 L0004799         0   0.33130E-08  649551.8 4290896.7    51.0     5.65    11.16
2.63     YES
```

```
 L0004800         0   0.33130E-08  649570.8 4290911.4    51.1     5.65    11.16
2.63     YES
 L0004801         0   0.33130E-08  649589.7 4290926.2    51.2     5.65    11.16
2.63     YES
 L0004802         0   0.33130E-08  649608.6 4290940.9    51.3     5.65    11.16
2.63     YES
 L0004803         0   0.33130E-08  649627.6 4290955.7    51.4     5.65    11.16
2.63     YES
 L0004804         0   0.33130E-08  649646.5 4290970.4    51.5     5.65    11.16
2.63     YES
 L0004805         0   0.33130E-08  649665.4 4290985.2    51.7     5.65    11.16
2.63     YES
 L0004806         0   0.33130E-08  649684.3 4291000.0    51.8     5.65    11.16
2.63     YES
 L0004807         0   0.33130E-08  649703.2 4291014.8    51.9     5.65    11.16
2.63     YES
 L0004808         0   0.33130E-08  649722.1 4291029.6    52.0     5.65    11.16
2.63     YES
 L0004809         0   0.33130E-08  649740.9 4291044.4    52.1     5.65    11.16
2.63     YES
 L0004810         0   0.33130E-08  649759.8 4291059.2    52.3     5.65    11.16
2.63     YES
 L0004811         0   0.33130E-08  649778.7 4291074.1    52.4     5.65    11.16
2.63     YES
 L0004812         0   0.33130E-08  649797.6 4291088.9    52.5     5.65    11.16
2.63     YES
 L0004813         0   0.33130E-08  649816.5 4291103.7    52.6     5.65    11.16
2.63     YES
 L0004814         0   0.33130E-08  649835.4 4291118.5    52.8     5.65    11.16
2.63     YES
 L0004815         0   0.33130E-08  649854.2 4291133.3    52.9     5.65    11.16
2.63     YES
 L0004816         0   0.33130E-08  649873.1 4291148.1    53.0     5.65    11.16
2.63     YES
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED               ***       07/10/23
 *** AERMET - VERSION  19191 ***   ***
                        ***       21:24:19

                                  PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
```

```
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

 L0004817         0   0.33130E-08  649892.0 4291162.9    53.1     5.65    11.16
2.63     YES
 L0004818         0   0.33130E-08  649910.9 4291177.8    53.2     5.65    11.16
2.63     YES
 L0004819         0   0.33130E-08  649929.8 4291192.6    53.4     5.65    11.16
2.63     YES
 L0004820         0   0.33130E-08  649948.7 4291207.4    53.5     5.65    11.16
2.63     YES
 L0004821         0   0.33130E-08  649968.1 4291221.3    53.6     5.65    11.16
2.63     YES
 L0004822         0   0.33130E-08  649989.4 4291232.4    53.6     5.65    11.16
2.63     YES
 L0004823         0   0.33130E-08  650010.6 4291243.6    53.6     5.65    11.16
2.63     YES
 L0004824         0   0.33130E-08  650031.9 4291254.7    53.6     5.65    11.16
2.63     YES
 L0004825         0   0.33130E-08  650053.2 4291265.8    53.6     5.65    11.16
2.63     YES
 L0004826         0   0.33130E-08  650074.4 4291277.0    53.7     5.65    11.16
2.63     YES
 L0004827         0   0.33130E-08  650095.7 4291288.1    53.7     5.65    11.16
2.63     YES
 L0004828         0   0.33130E-08  650117.9 4291297.0    53.7     5.65    11.16
2.63     YES
 L0004829         0   0.33130E-08  650140.6 4291304.9    53.7     5.65    11.16
2.63     YES
 L0004830         0   0.33130E-08  650163.2 4291312.9    53.7     5.65    11.16
2.63     YES
 L0004831         0   0.33130E-08  650185.8 4291320.9    53.7     5.65    11.16
2.63     YES
 L0004832         0   0.33130E-08  650208.5 4291328.9    53.7     5.65    11.16
2.63     YES
 L0004833         0   0.33130E-08  650231.1 4291336.9    53.7     5.65    11.16
2.63     YES
 L0004834         0   0.33130E-08  650253.7 4291344.9    53.7     5.65    11.16
2.63     YES
 L0004835         0   0.33130E-08  650276.3 4291352.9    53.7     5.65    11.16
2.63     YES
 L0004836         0   0.33130E-08  650299.0 4291360.9    53.7     5.65    11.16
2.63     YES
 L0004837         0   0.33130E-08  650321.6 4291368.8    53.8     5.65    11.16
2.63     YES
 L0004838         0   0.33130E-08  650345.2 4291373.2    53.8     5.65    11.16
2.63     YES
 L0004839         0   0.33130E-08  650368.8 4291377.5    53.8     5.65    11.16
2.63     YES
```

```
 L0004840         0   0.33130E-08  650392.4 4291381.9    53.8     5.65    11.16
2.63     YES
 L0004841         0   0.33130E-08  650416.0 4291386.3    53.8     5.65    11.16
2.63     YES
 L0004842         0   0.33130E-08  650439.6 4291390.6    53.8     5.65    11.16
2.63     YES
 L0004843         0   0.33130E-08  650463.2 4291395.0    53.8     5.65    11.16
2.63     YES
 L0004844         0   0.33130E-08  650486.8 4291399.4    53.8     5.65    11.16
2.63     YES
 VOL1             0   0.37500E-04  650665.3 4291406.9    53.2     3.40    11.63
3.16     YES
 VOL2             0   0.37500E-04  650564.0 4291398.4    53.2     3.40    20.23
3.16     YES
 VOL3             0   0.37500E-04  650456.4 4291399.5    53.9     3.40    15.12
3.16     YES
 L0004845         0   0.62500E-05  650353.1 4291409.6    54.2     3.40    40.47
1.58     YES
 L0004846         0   0.62500E-05  650268.8 4291389.3    54.5     3.40    40.47
1.58     YES
 L0004847         0   0.62500E-05  650186.2 4291361.9    54.5     3.40    40.47
1.58     YES
 L0004848         0   0.62500E-05  650105.1 4291330.6    54.8     3.40    40.47
1.58     YES
 L0004849         0   0.62500E-05  650027.6 4291291.4    53.7     3.40    40.47
1.58     YES
 L0004850         0   0.62500E-05  649951.8 4291248.7    52.9     3.40    40.47
1.58     YES
 L0004851         0   0.53570E-05  649876.1 4291183.7    52.5     3.40    26.51
1.58     YES
 L0004852         0   0.53570E-05  649832.0 4291147.5    52.3     3.40    26.51
1.58     YES
 L0004853         0   0.53570E-05  649787.9 4291111.4    52.0     3.40    26.51
1.58     YES
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED               ***       07/10/23
 *** AERMET - VERSION  19191 ***   ***
                        ***       21:24:19

                                  PAGE   6
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
```

```
(METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0004854          0   0.53570E-05  649743.9 4291075.2    51.8      3.40    26.51
1.58     YES
 L0004855          0   0.53570E-05  649699.8 4291039.1    51.6      3.40    26.51
1.58     YES
 L0004856          0   0.53570E-05  649655.7 4291002.9    51.4      3.40    26.51
1.58     YES
 L0004857          0   0.53570E-05  649611.7 4290966.8    51.1      3.40    26.51
1.58     YES
 L0004858          0   0.18750E-04  649551.8 4290913.5    50.8      3.40    36.74
1.58     YES
 L0004859          0   0.18750E-04  649490.4 4290863.8    50.5      3.40    36.74
1.58     YES
 L0004860          0   0.93750E-05  649426.2 4290799.7    50.2      3.40    23.26
1.58     YES
 L0004861          0   0.93750E-05  649387.6 4290767.9    50.1      3.40    23.26
1.58     YES
 L0004862          0   0.93750E-05  649349.1 4290736.1    49.9      3.40    23.26
1.58     YES
 L0004863          0   0.93750E-05  649310.5 4290704.3    49.8      3.40    23.26
1.58     YES
 L0004864          0   0.62500E-05  649148.7 4290768.0    49.3      3.40    11.63
1.58     YES
 L0004865          0   0.62500E-05  649170.0 4290754.9    49.4      3.40    11.63
1.58     YES
 L0004866          0   0.62500E-05  649191.3 4290741.9    49.4      3.40    11.63
1.58     YES
 L0004867          0   0.62500E-05  649212.7 4290728.9    49.5      3.40    11.63
1.58     YES
 L0004868          0   0.62500E-05  649234.0 4290715.8    49.5      3.40    11.63
1.58     YES
 L0004869          0   0.62500E-05  649255.3 4290702.8    49.5      3.40    11.63
1.58     YES
 VOL12             0   0.00000E+00  650665.3 4291406.9    53.2      1.30    11.63
1.21     YES
 VOL22             0   0.00000E+00  650564.0 4291398.4    53.2      1.30    20.23
1.21     YES
 VOL32             0   0.00000E+00  650456.4 4291399.5    53.9      1.30    15.12
1.21     YES
 L0004870          0   0.00000E+00  650353.1 4291409.6    54.2      1.30    40.47
0.60     YES
 L0004871          0   0.00000E+00  650268.8 4291389.3    54.5      1.30    40.47
0.60     YES
 L0004872          0   0.00000E+00  650186.2 4291361.9    54.5      1.30    40.47
0.60     YES
 L0004873          0   0.00000E+00  650105.1 4291330.6    54.8      1.30    40.47
0.60     YES
```

```
 L0004874         0   0.00000E+00  650027.6 4291291.4    53.7     1.30    40.47
0.60     YES
 L0004875         0   0.00000E+00  649951.8 4291248.7    52.9     1.30    40.47
0.60     YES
 L0004876         0   0.00000E+00  649876.1 4291183.7    52.5     1.30    26.51
0.60     YES
 L0004877         0   0.00000E+00  649832.0 4291147.5    52.3     1.30    26.51
0.60     YES
 L0004878         0   0.00000E+00  649787.9 4291111.4    52.0     1.30    26.51
0.60     YES
 L0004879         0   0.00000E+00  649743.9 4291075.2    51.8     1.30    26.51
0.60     YES
 L0004880         0   0.00000E+00  649699.8 4291039.1    51.6     1.30    26.51
0.60     YES
 L0004881         0   0.00000E+00  649655.7 4291002.9    51.4     1.30    26.51
0.60     YES
 L0004882         0   0.00000E+00  649611.7 4290966.8    51.1     1.30    26.51
0.60     YES
 L0004883         0   0.00000E+00  649551.8 4290913.5    50.8     1.30    36.74
0.60     YES
 L0004884         0   0.00000E+00  649490.4 4290863.8    50.5     1.30    36.74
0.60     YES
 L0004885         0   0.00000E+00  649426.2 4290799.7    50.2     1.30    23.26
0.60     YES
 L0004886         0   0.00000E+00  649387.6 4290767.9    50.1     1.30    23.26
0.60     YES
 L0004887         0   0.00000E+00  649349.1 4290736.1    49.9     1.30    23.26
0.60     YES
 L0004888         0   0.00000E+00  649310.5 4290704.3    49.8     1.30    23.26
0.60     YES
 L0004889         0   0.00000E+00  649148.7 4290768.0    49.3     1.30    11.63
0.60     YES
 L0004890         0   0.00000E+00  649170.0 4290754.9    49.4     1.30    11.63
0.60     YES
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED               ***       07/10/23
 *** AERMET - VERSION  19191 ***   ***
                        ***       21:24:19

                                  PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                                  *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.
INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY
SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS)
```

```
(METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - -

 L0004891         0   0.00000E+00  649191.3 4290741.9    49.4     1.30    11.63
0.60     YES
 L0004892         0   0.00000E+00  649212.7 4290728.9    49.5     1.30    11.63
0.60     YES
 L0004893         0   0.00000E+00  649234.0 4290715.8    49.5     1.30    11.63
0.60     YES
 L0004894         0   0.00000E+00  649255.3 4290702.8    49.5     1.30    11.63
0.60     YES
🡅 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED                ***       07/10/23
 *** AERMET - VERSION  19191 ***   ***
                        ***       21:24:19

                                   PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                           *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                                  SOURCE IDs
 -----------                                                  ----------


  ALL        L0000001    , L0000002    , L0000003    , L0000004    , L0000005    ,
L0000006    , L0000007    , L0000008    ,

             L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
L0000014    , L0000015    , L0000016    ,

             L0000017    , L0000018    , L0000019    , L0000020    , L0000021    ,
L0000022    , L0000023    , L0000024    ,

             L0000025    , L0000026    , L0000027    , L0000028    , L0000029    ,
L0000030    , L0004728    , L0004729    ,

             L0004730    , L0004731    , L0004732    , L0004733    , L0004734    ,
L0004735    , L0004736    , L0004737    ,

             L0004738    , L0004739    , L0004740    , L0004741    , L0004742    ,
L0004743    , L0004744    , L0004745    ,

             VOL41       , L0004746    , L0004747    , L0004748    , L0004749    ,
L0004750    , L0004751    , L0004752    ,

             L0004753    , L0004754    , L0004755    , L0004756    , L0004757    ,
```

L0004758   , L0004759   , L0004760   ,

             L0004761   , L0004762   , L0004763   , L0004764   , L0004765   ,
L0004766   , L0004767   , L0004768   ,

             L0004769   , L0004770   , L0004771   , L0004772   , L0004773   ,
L0004774   , L0004775   , L0004776   ,

             L0004777   , L0004778   , L0004779   , L0004780   , L0004781   ,
L0004782   , L0004783   , L0004784   ,

             L0004785   , L0004786   , L0004787   , L0004788   , L0004789   ,
L0004790   , L0004791   , L0004792   ,

             L0004793   , L0004794   , L0004795   , L0004796   , L0004797   ,
L0004798   , L0004799   , L0004800   ,

             L0004801   , L0004802   , L0004803   , L0004804   , L0004805   ,
L0004806   , L0004807   , L0004808   ,

             L0004809   , L0004810   , L0004811   , L0004812   , L0004813   ,
L0004814   , L0004815   , L0004816   ,

             L0004817   , L0004818   , L0004819   , L0004820   , L0004821   ,
L0004822   , L0004823   , L0004824   ,

             L0004825   , L0004826   , L0004827   , L0004828   , L0004829   ,
L0004830   , L0004831   , L0004832   ,

             L0004833   , L0004834   , L0004835   , L0004836   , L0004837   ,
L0004838   , L0004839   , L0004840   ,

             L0004841   , L0004842   , L0004843   , L0004844   , VOL1   ,
VOL2   , VOL3   , L0004845   ,

             L0004846   , L0004847   , L0004848   , L0004849   , L0004850   ,
L0004851   , L0004852   , L0004853   ,

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

                                                *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID   SOURCE IDs

                                          *** SOURCE IDs DEFINED AS URBAN SOURCES
***

  URBAN ID   URBAN POP   SOURCE IDs
  --------   ---------   ----------

              2500000.   L0000001   , L0000002   , L0000003   , L0000004   ,
L0000005   , L0000006   , L0000007   ,
 L0000008   ,

             L0000009   , L0000010   , L0000011   , L0000012   , L0000013   ,
L0000014   , L0000015   , L0000016   ,

             L0000017   , L0000018   , L0000019   , L0000020   , L0000021   ,
L0000022   , L0000023   , L0000024   ,

             L0000025   , L0000026   , L0000027   , L0000028   , L0000029   ,
L0000030   , L0004728   , L0004729   ,

             L0004730   , L0004731   , L0004732   , L0004733   , L0004734   ,
L0004735   , L0004736   , L0004737   ,

```
             L0004738    , L0004739    , L0004740    , L0004741    , L0004742    ,
L0004743    , L0004744    , L0004745    ,

             VOL41       , L0004746    , L0004747    , L0004748    , L0004749    ,
L0004750    , L0004751    , L0004752    ,

             L0004753    , L0004754    , L0004755    , L0004756    , L0004757    ,
L0004758    , L0004759    , L0004760    ,

             L0004761    , L0004762    , L0004763    , L0004764    , L0004765    ,
L0004766    , L0004767    , L0004768    ,

             L0004769    , L0004770    , L0004771    , L0004772    , L0004773    ,
L0004774    , L0004775    , L0004776    ,

             L0004777    , L0004778    , L0004779    , L0004780    , L0004781    ,
L0004782    , L0004783    , L0004784    ,

             L0004785    , L0004786    , L0004787    , L0004788    , L0004789    ,
L0004790    , L0004791    , L0004792    ,

             L0004793    , L0004794    , L0004795    , L0004796    , L0004797    ,
L0004798    , L0004799    , L0004800    ,

             L0004801    , L0004802    , L0004803    , L0004804    , L0004805    ,
L0004806    , L0004807    , L0004808    ,

             L0004809    , L0004810    , L0004811    , L0004812    , L0004813    ,
L0004814    , L0004815    , L0004816    ,

             L0004817    , L0004818    , L0004819    , L0004820    , L0004821    ,
L0004822    , L0004823    , L0004824    ,

             L0004825    , L0004826    , L0004827    , L0004828    , L0004829    ,
L0004830    , L0004831    , L0004832    ,

             L0004833    , L0004834    , L0004835    , L0004836    , L0004837    ,
L0004838    , L0004839    , L0004840    ,

             L0004841    , L0004842    , L0004843    , L0004844    , VOL1        ,
VOL2        , VOL3        , L0004845    ,

             L0004846    , L0004847    , L0004848    , L0004849    , L0004850    ,
L0004851    , L0004852    , L0004853    ,
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED                ***        07/10/23
 *** AERMET - VERSION  19191 ***   ***
                           ***       21:24:19
```

*** SOURCE IDs DEFINED AS URBAN SOURCES ***

URBAN ID	URBAN POP	SOURCE IDs
		L0004854 , L0004855 , L0004856 , L0004857 , L0004858 , L0004859 , L0004860 , L0004861 ,
		L0004862 , L0004863 , L0004864 , L0004865 , L0004866 , L0004867 , L0004868 , L0004869 ,
		VOL12 , VOL22 , VOL32 , L0004870 , L0004871 , L0004872 , L0004873 , L0004874 ,
		L0004875 , L0004876 , L0004877 , L0004878 , L0004879 , L0004880 , L0004881 , L0004882 ,
		L0004883 , L0004884 , L0004885 , L0004886 , L0004887 , L0004888 , L0004889 , L0004890 ,
		L0004891 , L0004892 , L0004893 , L0004894 ,

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

649742.2, 649754.2, 649766.2, 649778.2, 649790.2, 649802.2, 649814.2, 649826.2, 649838.2, 649850.2,
649862.2,

*** Y-COORDINATES OF GRID ***
(METERS)

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

* ELEVATION HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)											
	649742.20	649754.20	649766.20	649778.20	649790.20	649802.20	649814.20	649826.20	649838.20			
4291409.99	54.60	54.80	54.90	54.80	54.90	54.90	54.90	55.00	55.00			
4291392.99	54.70	54.80	54.80	54.80	54.80	54.80	54.90	54.90	55.00			
4291375.99	54.80	54.90	54.90	54.90	54.90	54.90	54.90	54.90	55.00			
4291358.99	54.80	54.90	54.90	54.90	54.90	54.90	54.90	54.90	55.00			
4291341.99	54.80	54.80	54.90	55.00	55.00	55.00	55.00	54.90	54.90			
4291324.99	54.80	54.90	55.20	55.40	55.40	55.30	55.20	55.00	54.90			
4291307.99	55.00	54.90	55.10	55.20	55.20	55.30	55.60	55.60	55.40			
4291290.99	56.10	56.20	56.50	56.80	56.70	57.00	56.80	56.10	55.50			
4291273.99	57.10	57.80	57.90	58.00	58.00	57.90	57.10	55.80	55.30			
4291256.99	57.70	58.00	57.90	58.00	58.00	58.00	57.00	55.60	55.00			
4291239.99	57.60	57.60	57.40	57.30	57.30	57.20	56.50	55.00	54.00			

Y-COORD (METERS)	X-COORD (METERS) 649850.20	649862.20
4291409.99	55.10	55.10
4291392.99	55.10	55.20
4291375.99	55.20	55.20
4291358.99	55.10	55.20
4291341.99	55.00	55.10
4291324.99	54.90	54.80
4291307.99	55.00	54.60
4291290.99	55.10	54.60
4291273.99	55.10	54.50
4291256.99	54.90	54.20
4291239.99	53.90	53.70

Y-COORD (METERS)	X-COORD (METERS) 649742.20	649754.20	649766.20	649778.20	649790.20	649802.20	649814.20	649826.20	649838.20
4291409.99	54.60	54.80	54.90	54.80	54.90	54.90	54.90	55.00	55.00
4291392.99	54.70	54.80	54.80	54.80	54.80	54.80	54.90	54.90	55.00
4291375.99	54.80	54.90	54.90	54.90	54.90	54.90	54.90	54.90	55.00
4291358.99	54.80	54.90	54.90	54.90	54.90	54.90	54.90	54.90	55.00

```
  4291341.99 |         54.80        54.80        54.90        55.00        55.00
    55.00        55.00        54.90        54.90
  4291324.99 |         54.80        54.90        55.20        55.40        55.40
    55.30        55.20        55.00        54.90
  4291307.99 |         55.00        54.90        57.90        57.90        57.90
    57.90        55.60        55.60        55.40
  4291290.99 |         56.10        57.50        57.90        57.90        57.90
    57.90        56.80        56.10        55.50
  4291273.99 |         57.40        57.80        57.90        58.00        58.00
    57.90        57.80        57.80        55.30
  4291256.99 |         57.70        58.00        57.90        58.00        58.00
    58.00        57.00        57.80        55.00
  4291239.99 |         57.60        57.60        57.40        57.30        57.30
    57.50        57.30        58.00        58.00
```


*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

* HILL HEIGHT SCALES IN METERS *

```
    Y-COORD  |                                                X-COORD (METERS)
    (METERS) |     649850.20    649862.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |         55.10        55.10
  4291392.99 |         55.10        55.20
  4291375.99 |         55.20        55.20
  4291358.99 |         55.10        55.20
  4291341.99 |         55.00        55.10
  4291324.99 |         54.90        54.80
  4291307.99 |         55.00        54.60
  4291290.99 |         55.10        54.60
  4291273.99 |         55.10        54.50
  4291256.99 |         54.90        54.20
  4291239.99 |         53.90        53.70
```

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

* RECEPTOR FLAGPOLE HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)									
	649742.20	649754.20	649766.20	649778.20	649790.20	649802.20	649814.20	649826.20	649838.20	
4291409.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291392.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291375.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291358.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291341.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291324.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291307.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291290.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291273.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291256.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	
4291239.99	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

* RECEPTOR FLAGPOLE HEIGHTS IN METERS *

Y-COORD (METERS)	X-COORD (METERS)	
	649850.20	649862.20

4291409.99	1.80	1.80
4291392.99	1.80	1.80
4291375.99	1.80	1.80
4291358.99	1.80	1.80
4291341.99	1.80	1.80
4291324.99	1.80	1.80
4291307.99	1.80	1.80
4291290.99	1.80	1.80
4291273.99	1.80	1.80
4291256.99	1.80	1.80
4291239.99	1.80	1.80

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(650194.2, 4291271.5, 53.3, 53.3, 1.8); (650195.6, 4291266.8, 53.4, 53.4, 1.8);
(650196.4, 4291262.6, 53.5, 53.5, 1.8); (650197.8, 4291257.9, 53.6, 53.6, 1.8);
(650199.8, 4291253.2, 53.6, 53.6, 1.8); (650202.0, 4291248.0, 53.7, 53.7, 1.8);
(650204.2, 4291242.5, 53.7, 53.7, 1.8); (650205.8, 4291236.7, 53.8, 53.8, 1.8);
(650212.3, 4291238.7, 53.8, 53.8, 1.8); (650218.3, 4291240.5, 53.7, 53.7, 1.8);
(650224.7, 4291242.5, 53.7, 53.7, 1.8); (650232.7, 4291245.3, 53.7, 53.7, 1.8);
(650241.1, 4291248.3, 53.7, 53.7, 1.8); (650249.2, 4291250.9, 53.7, 53.7, 1.8);
(650256.6, 4291253.7, 53.7, 53.7, 1.8); (650266.2, 4291257.1, 53.7, 53.7, 1.8);
(650206.4, 4291276.2, 53.4, 53.4, 1.8); (650208.5, 4291273.2, 53.4, 53.4, 1.8);
(650210.1, 4291268.6, 53.5, 53.5, 1.8); (650212.3, 4291264.6, 53.6, 53.6, 1.8);
(650235.3, 4291286.2, 53.6, 53.6, 1.8); (650236.7, 4291283.0, 53.6, 53.6, 1.8);
(650238.2, 4291279.8, 53.6, 53.6, 1.8); (650239.2, 4291276.2, 53.6, 53.6, 1.8);
(650239.7, 4291273.0, 53.6, 53.6, 1.8); (650256.4,

```
4291292.0,      53.7,      53.7,       1.8);
     ( 650258.0, 4291286.8,      53.7,      53.7,       1.8);         ( 650260.0,
4291279.8,      53.7,      53.7,       1.8);
     ( 650260.6, 4291272.4,      53.7,      53.7,       1.8);         ( 650263.8,
4291266.0,      53.7,      53.7,       1.8);
     ( 649381.2, 4290586.8,      50.8,      50.8,       1.8);         ( 649394.6,
4290600.2,      50.6,      50.6,       1.8);
     ( 649410.7, 4290612.7,      50.5,      50.5,       1.8);         ( 649425.9,
4290624.3,      50.6,      50.6,       1.8);
     ( 649417.8, 4290633.2,      50.5,      50.5,       1.8);         ( 649410.7,
4290643.1,      50.4,      50.4,       1.8);
     ( 649391.9, 4290566.2,      51.2,      51.2,       1.8);         ( 649400.8,
4290559.0,      51.4,      51.4,       1.8);
     ( 649406.2, 4290552.8,      51.5,      51.5,       1.8);         ( 649414.2,
4290537.6,      51.6,      51.6,       1.8);
     ( 649435.7, 4290606.4,      50.8,      50.8,       1.8);         ( 649444.6,
4290599.3,      50.8,      50.8,       1.8);
     ( 649449.1, 4290591.2,      51.0,      51.0,       1.8);         ( 649458.1,
4290584.1,      51.1,      51.1,       1.8);
     ( 649458.1, 4290644.0,      50.8,      50.8,       1.8);         ( 649468.8,
4290628.8,      51.1,      51.1,       1.8);
     ( 649481.3, 4290619.0,      51.3,      51.3,       1.8);         ( 649497.4,
4290607.3,      51.5,      51.5,       1.8);
     ( 649452.7, 4290733.4,      50.2,      50.2,       1.8);         ( 649462.5,
4290745.0,      50.3,      50.3,       1.8);
     ( 649473.2, 4290753.0,      50.3,      50.3,       1.8);         ( 649487.6,
4290762.0,      50.2,      50.2,       1.8);
     ( 649458.9, 4290719.1,      50.2,      50.2,       1.8);         ( 649482.2,
4290692.2,      50.6,      50.6,       1.8);
     ( 649496.5, 4290676.2,      50.8,      50.8,       1.8);         ( 649494.7,
4290750.4,      50.3,      50.3,       1.8);
     ( 649510.8, 4290725.3,      50.7,      50.7,       1.8);         ( 649531.4,
4290701.2,      50.7,      50.7,       1.8);
     ( 649512.6, 4290658.3,      51.1,      51.1,       1.8);         ( 649505.4,
4290620.7,      51.6,      51.6,       1.8);
     ( 649581.9, 4290816.0,      50.8,      50.8,       1.8);         ( 649595.6,
4290822.0,      50.9,      50.9,       1.8);
     ( 649605.9, 4290832.5,      50.9,      50.9,       1.8);         ( 649616.8,
4290841.6,      51.0,      51.0,       1.8);
     ( 649599.3, 4290800.4,      51.0,      51.0,       1.8);         ( 649604.7,
4290787.9,      51.2,      51.2,       1.8);
     ( 649623.4, 4290818.3,      51.3,      51.3,       1.8);         ( 649627.9,
4290802.2,      51.3,      51.3,       1.8);
     ( 649634.6, 4290882.6,      50.9,      50.9,       1.8);         ( 649644.4,
4290891.5,      50.9,      50.9,       1.8);
     ( 649657.9, 4290903.1,      51.0,      51.0,       1.8);         ( 649662.3,
4290845.9,      51.6,      51.6,       1.8);
     ( 649670.4, 4290910.3,      51.1,      51.1,       1.8);         ( 649672.2,
4290855.8,      51.6,      51.6,       1.8);
     ( 649681.1, 4290918.3,      51.1,      51.1,       1.8);         ( 649690.0,
```

4290926.4, 51.1, 51.1, 1.8);
     (649703.5, 4290939.8, 51.1, 51.1, 1.8); (649686.5,
4290867.4, 51.6, 51.6, 1.8);
     (649698.1, 4290813.7, 51.6, 51.6, 1.8); (649718.7,
4290834.3, 51.6, 51.6, 1.8);
     (649741.0, 4290850.4, 51.7, 51.7, 1.8); (649763.4,
4290863.8, 51.7, 51.7, 1.8);
     (649701.7, 4290877.2, 51.7, 51.7, 1.8); (649715.1,
4290890.6, 51.6, 51.6, 1.8);
     (649732.1, 4290904.9, 51.4, 51.4, 1.8); (649910.9,
4290991.7, 51.8, 51.8, 1.8);
     (649928.8, 4291003.3, 52.4, 52.4, 1.8); (649945.8,
4291014.0, 52.6, 52.6, 1.8);
     (649962.8, 4291023.0, 52.7, 52.7, 1.8); (650053.1,
4291107.9, 52.5, 52.5, 1.8);

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

     (650064.7, 4291089.1, 52.7, 52.7, 1.8); (650085.3,
4291104.3, 53.0, 53.0, 1.8);
     (650070.1, 4291118.7, 52.8, 52.8, 1.8); (650083.5,
4291131.2, 53.1, 53.1, 1.8);
     (650146.1, 4291166.1, 54.0, 54.0, 1.8); (650157.7,
4291151.8, 54.0, 54.0, 1.8);
     (650140.7, 4291144.6, 53.9, 53.9, 1.8); (650115.7,
4291125.8, 53.7, 53.7, 1.8);
     (650113.9, 4291149.1, 53.8, 53.8, 1.8); (650178.3,
4291183.9, 54.0, 54.0, 1.8);
     (650190.8, 4291167.8, 54.1, 54.1, 1.8); (650434.9,
4291167.8, 52.7, 52.7, 1.8);
     (650417.1, 4291189.3, 53.3, 53.3, 1.8); (650401.9,
4291217.0, 54.2, 54.2, 1.8);
     (650207.8, 4291177.7, 54.2, 54.2, 1.8); (650225.7,
4291183.0, 54.2, 54.2, 1.8);
     (650240.9, 4291188.4, 54.3, 54.3, 1.8); (650258.8,
4291195.6, 54.3, 54.3, 1.8);
     (650280.2, 4291200.9, 54.4, 54.4, 1.8); (650293.7,
4291207.2, 54.2, 54.2, 1.8);
     (650315.1, 4291215.2, 54.1, 54.1, 1.8); (650333.9,
4291220.6, 54.1, 54.1, 1.8);
     (650352.7, 4291225.1, 54.2, 54.2, 1.8); (650374.1,

```
4291231.3,      54.3,      54.3,       1.8);
     ( 650013.8, 4291462.0,      55.0,      55.0,       1.8);         ( 649930.6,
4291369.0,      55.9,      55.9,       1.8);
     ( 649914.5, 4291349.4,      55.4,      55.4,       1.8);         ( 649935.1,
4291336.0,      54.5,      54.5,       1.8);
     ( 649907.3, 4291317.2,      54.1,      54.1,       1.8);         ( 649919.9,
4291361.0,      55.7,      55.7,       1.8);
     ( 649909.1, 4291335.1,      54.7,      54.7,       1.8);         ( 649903.8,
4291306.5,      53.8,      53.8,       1.8);
     ( 649917.2, 4291272.5,      53.5,      53.5,       1.8);         ( 649911.8,
4291301.1,      53.8,      53.8,       1.8);
     ( 649924.3, 4291302.9,      53.8,      53.8,       1.8);         ( 650053.1,
4291363.7,      57.0,      57.0,       1.8);
     ( 650066.5, 4291373.5,      56.5,      56.5,       1.8);         ( 650079.0,
4291366.4,      56.4,      56.4,       1.8);
     ( 649216.8, 4290755.2,      49.8,      49.8,       0.0);         ( 649667.3,
4291204.2,      56.1,      56.1,       0.0);
     ( 649647.4, 4291189.0,      56.6,      56.6,       0.0);         ( 649627.6,
4291173.8,      56.6,      56.6,       0.0);
     ( 649607.8, 4291158.6,      55.6,      55.6,       0.0);         ( 649587.9,
4291143.4,      54.0,      54.0,       0.0);
     ( 649568.1, 4291128.1,      53.5,      53.5,       0.0);         ( 649548.3,
4291112.9,      54.0,      54.0,       0.0);
     ( 649528.4, 4291097.7,      54.3,      54.3,       0.0);         ( 649508.6,
4291082.5,      53.5,      53.5,       0.0);
     ( 649488.8, 4291067.3,      52.9,      52.9,       0.0);         ( 649468.9,
4291052.0,      53.2,      53.2,       0.0);
     ( 649449.1, 4291036.8,      54.2,      54.2,       0.0);         ( 649429.3,
4291021.6,      53.6,      53.6,       0.0);
     ( 649409.4, 4291006.4,      52.1,      52.1,       0.0);         ( 649389.6,
4290991.2,      51.1,      51.1,       0.0);
     ( 649358.6, 4290967.6,      50.3,      50.3,       0.0);         ( 649339.0,
4290952.1,      50.6,      50.6,       0.0);
     ( 649319.4, 4290936.6,      51.3,      51.3,       0.0);         ( 649299.8,
4290921.1,      51.7,      51.7,       0.0);
     ( 649280.2, 4290905.6,      52.0,      52.0,       0.0);         ( 649260.6,
4290890.1,      52.1,      52.1,       0.0);
     ( 649241.0, 4290874.6,      52.3,      52.3,       0.0);         ( 649221.3,
4290859.1,      52.5,      52.5,       0.0);
     ( 649201.7, 4290843.6,      52.3,      52.3,       0.0);         ( 649182.1,
4290828.1,      51.5,      51.5,       0.0);
     ( 649158.3, 4290816.1,      51.1,      51.1,       1.8);         ( 649684.2,
4291223.8,      55.4,      55.4,       1.8);
     ( 649247.5, 4290740.0,      49.7,      49.7,       0.0);         ( 649225.7,
4290769.6,      50.0,      50.0,       0.0);
     ( 649245.6, 4290784.9,      50.1,      50.1,       0.0);         ( 649265.4,
4290800.1,      50.0,      50.0,       0.0);
     ( 649285.2, 4290815.3,      50.0,      50.0,       0.0);         ( 649305.1,
4290830.5,      50.0,      50.0,       0.0);
     ( 649324.9, 4290845.7,      50.0,      50.0,       0.0);         ( 649344.8,
```

4290874.0,   50.8,   50.8,   0.0);
     (649276.3, 4290858.8,   50.9,   50.9,   0.0);   (649256.5,
4290843.6,   51.0,   51.0,   0.0);
     (649236.6, 4290828.4,   51.4,   51.4,   0.0);   (649216.8,
4290813.2,   51.6,   51.6,   0.0);
     (649185.1, 4290793.9,   50.7,   50.7,   1.8);   (649699.4,
4291179.0,   56.0,   56.0,   1.8);

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

                      * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT
BE PERFORMED *
                        LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR
FASTAREA/FASTALL

                              SOURCE   - - RECEPTOR LOCATION - -
DISTANCE
                                ID   XR (METERS)   YR (METERS)
(METERS)
                             -
- - -

                              L0000009   650194.2   4291271.5
-14.43
                              L0000009   650195.6   4291266.8
-10.33
                              L0000009   650196.4   4291262.6
-6.66
                              L0000009   650197.8   4291257.9
-2.04
                              L0000009   650206.4   4291276.2
-4.41
                              L0000009   650208.5   4291273.2
-1.78
                              L0000010   650194.2   4291271.5
-4.62
                              L0000010   650195.6   4291266.8
-1.77
                              L0000010   650206.4   4291276.2
-14.94
                              L0000010   650208.5   4291273.2
-12.30
                              L0000010   650210.1   4291268.6
-7.71

	L0000010	650212.3	4291264.6
-3.53			
	L0000010	650235.3	4291286.2
-0.60			
	L0000011	650235.3	4291286.2
-17.61			
	L0000011	650236.7	4291283.0
-14.29			
	L0000011	650238.2	4291279.8
-10.85			
	L0000011	650239.2	4291276.2
-7.13			
	L0000011	650239.7	4291273.0
-3.93			
	L0000011	650256.4	4291292.0
-4.77			
	L0000011	650258.0	4291286.8
-1.93			
	L0000012	650256.4	4291292.0
-15.07			
	L0000012	650258.0	4291286.8
-10.41			
	L0000012	650260.0	4291279.8
-3.59			
	L0004782	649216.8	4290755.2
-5.15			
	L0004783	649247.5	4290740.0
-0.69			
	L0004784	649247.5	4290740.0
-7.14			
	L0004848	650053.1	4291363.7
-25.36			
	L0004848	650066.5	4291373.5
-29.29			
	L0004848	650079.0	4291366.4
-42.75			
	L0004849	650053.1	4291363.7
-10.32			
	L0004850	649907.3	4291317.2
-5.40			
	L0004850	649903.8	4291306.5
-11.94			
	L0004850	649917.2	4291272.5
-45.05			
	L0004850	649911.8	4291301.1
-21.14			
	L0004850	649924.3	4291302.9
-26.31			
	L0004873	650053.1	4291363.7
-25.36			

```
                            L0004873            650066.5     4291373.5
-29.29
                            L0004873            650079.0     4291366.4
-42.75
                            L0004874            650053.1     4291363.7
-10.32
                            L0004875            649907.3     4291317.2
-5.40


                     * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT
BE PERFORMED *
                       LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR
FASTAREA/FASTALL


                             SOURCE          - - RECEPTOR LOCATION - -
DISTANCE
                               ID            XR (METERS)   YR (METERS)
(METERS)
                           - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - -

                            L0004875            649903.8     4291306.5
-11.94
                            L0004875            649917.2     4291272.5
-45.05
                            L0004875            649911.8     4291301.1
-21.14
                            L0004875            649924.3     4291302.9
-26.31


                                         *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                          (1=YES; 0=NO)

           1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
```

```
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1
```

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\MET DATA\14-18.SFC
Met Version: 19191
Profile file: ..\..\MET DATA\14-18.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 93225 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2014 Year: 2014

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
14	01	01	1	01	-15.5	0.166	-9.000	-9.000	-999.	162.	30.3	0.05	0.69	1.00	2.36	211.	10.1	275.4	2.0
14	01	01	1	02	-3.4	0.079	-9.000	-9.000	-999.	56.	13.1	0.06	0.69	1.00	1.06	188.	10.1	273.8	2.0
14	01	01	1	03	-12.2	0.146	-9.000	-9.000	-999.	134.	23.5	0.05	0.69	1.00	2.10	136.	10.1	275.9	2.0
14	01	01	1	04	-23.3	0.226	-9.000	-9.000	-999.	257.	56.0	0.05	0.69	1.00	3.15	142.	10.1	277.0	2.0
14	01	01	1	05	-16.2	0.171	-9.000	-9.000	-999.	170.	32.2	0.06	0.69	1.00	2.33	186.	10.1	274.9	2.0
14	01	01	1	06	-3.0	0.076	-9.000	-9.000	-999.	55.	12.9	0.06	0.69	1.00	0.99	204.	10.1	273.1	2.0
14	01	01	1	07	-4.8	0.092	-9.000	-9.000	-999.	67.	14.7	0.07	0.69	1.00	1.28	171.	10.1	272.0	2.0
14	01	01	1	08	-1.8	0.065	-9.000	-9.000	-999.	40.	14.3	0.06	0.69	1.00	0.67	183.	10.1	273.1	2.0
14	01	01	1	09	-0.3	0.062	-9.000	-9.000	-999.	37.	75.4	0.06	0.69	0.41	0.82	181.	10.1	278.1	2.0
14	01	01	1	10	36.6	0.151	0.431	0.020	80.	141.	-8.6	0.05	0.69	0.28	1.55	141.	10.1	280.4	2.0
14	01	01	1	11	65.9	0.162	0.666	0.019	163.	157.	-5.9	0.07	0.69	0.24	1.48	161.	10.1	283.1	2.0
14	01	01	1	12	82.5	0.174	0.784	0.017	212.	175.	-5.8	0.07	0.69	0.22	1.59	152.	10.1	285.9	2.0
14	01	01	1	13	86.0	0.219	0.835	0.015	246.	246.	-11.1	0.07	0.69	0.22	2.18	154.	10.1	288.1	2.0
14	01	01	1	14	74.8	0.234	0.838	0.014	286.	272.	-15.6	0.05	0.69	0.23	2.56	229.	10.1	288.1	2.0
14	01	01	1	15	42.8	0.198	0.714	0.013	308.	212.	-16.5	0.06	0.69	0.26	2.08	180.	10.1	288.8	2.0
14	01	01	1	16	15.1	0.151	0.507	0.013	315.	141.	-20.7	0.06	0.69	0.35	1.62	194.	10.1	288.1	2.0
14	01	01	1	17	-9.6	0.137	-9.000	-9.000	-999.	122.	24.4	0.05	0.69	0.61	1.96	223.	10.1	286.4	2.0
14	01	01	1	18	-1.5	0.061	-9.000	-9.000	-999.	38.	13.6	0.04	0.69	1.00	0.65	251.	10.1	283.8	2.0
14	01	01	1	19	-1.5	0.058	-9.000	-9.000	-999.	34.	12.1	0.02	0.69	1.00	0.72	47.	10.1	280.9	2.0
14	01	01	1	20	-3.4	0.076	-9.000	-9.000	-999.	50.	11.8	0.03	0.69	1.00	1.20	81.	10.1	278.8	2.0
14	01	01	1	21	-2.2	0.065	-9.000	-9.000	-999.	40.	11.5	0.03	0.69	1.00	0.91	73.	10.1	278.8	2.0
14	01	01	1	22	-1.6	0.059	-9.000	-9.000	-999.	35.	12.0	0.02	0.69	1.00	0.74	22.	10.1	279.2	2.0
14	01	01	1	23	-1.9	0.063	-9.000	-9.000	-999.	38.	11.9	0.03	0.69						

```
1.00    0.82   60.   10.1  277.0    2.0
 14 01 01   1 24   -5.1  0.090 -9.000 -9.000 -999.   65.     13.1  0.02   0.69
1.00    1.57   34.   10.1  276.4    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  211.    2.36   275.4   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED                ***        07/10/23
 *** AERMET - VERSION  19191 ***   ***
                         ***        21:24:19

                                    PAGE  26
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL       ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                 L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                   *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                        ** CONC OF DPM      IN MICROGRAMS/M**3
                    **

    Y-COORD  |                                              X-COORD (METERS)
    (METERS) |     649742.20    649754.20    649766.20    649778.20    649790.20
649802.20    649814.20    649826.20    649838.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |       0.00123      0.00127      0.00131      0.00136      0.00142
  0.00147      0.00153      0.00160      0.00167
  4291392.99 |       0.00127      0.00131      0.00136      0.00141      0.00147
  0.00154      0.00160      0.00168      0.00176
  4291375.99 |       0.00132      0.00136      0.00141      0.00147      0.00153
  0.00160      0.00168      0.00176      0.00186
  4291358.99 |       0.00137      0.00141      0.00147      0.00153      0.00160
  0.00167      0.00176      0.00185      0.00196
  4291341.99 |       0.00142      0.00147      0.00153      0.00159      0.00166
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE PERIOD (43680 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** NETWORK ID: ROSEHIGH ; NETWORK TYPE: GRIDCART ***

** CONC OF DPM IN MICROGRAMS/M**3 **

Y-COORD (METERS)	X-COORD (METERS)	
	649850.20	649862.20
4291409.99	0.00174	0.00182
4291392.99	0.00185	0.00194
4291375.99	0.00196	0.00207
4291358.99	0.00208	0.00221
4291341.99	0.00220	0.00236
4291324.99	0.00234	0.00253
4291307.99	0.00248	0.00270

*** THE PERIOD (43680 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
650194.23	4291271.45	0.00256	650195.61	4291266.76	0.00248
650196.44	4291262.63	0.00272	650197.82	4291257.94	0.00260
650199.75	4291253.25	0.00286	650201.96	4291248.01	0.00268
650204.16	4291242.49	0.00251	650205.82	4291236.70	0.00237
650212.33	4291238.72	0.00237	650218.31	4291240.52	0.00236
650224.69	4291242.51	0.00236	650232.67	4291245.31	0.00237
650241.05	4291248.30	0.00238	650249.22	4291250.89	0.00239
650256.60	4291253.68	0.00241	650266.17	4291257.07	0.00243
650206.35	4291276.22	0.00255	650208.54		

4291273.23 0.00250
650210.14 4291268.64 0.00277 650212.33
4291264.65 0.00265
650235.26 4291286.19 0.00260 650236.66
4291283.00 0.00288
650238.25 4291279.81 0.00279 650239.25
4291276.22 0.00271
650239.65 4291273.03 0.00264 650256.40
4291291.97 0.00257
650258.00 4291286.79 0.00248 650259.99
4291279.81 0.00272
650260.59 4291272.43 0.00288 650263.78
4291266.05 0.00266
649381.16 4290586.76 0.00175 649394.57
4290600.17 0.00183
649410.67 4290612.69 0.00187 649425.86
4290624.31 0.00189
649417.82 4290633.25 0.00207 649410.67
4290643.08 0.00228
649391.89 4290566.20 0.00149 649400.83
4290559.05 0.00141
649406.20 4290552.79 0.00134 649414.24
4290537.59 0.00122
649435.70 4290606.43 0.00165 649444.64
4290599.28 0.00154
649449.11 4290591.23 0.00146 649458.05
4290584.08 0.00138
649458.05 4290643.98 0.00185 649468.77
4290628.78 0.00163
649481.29 4290618.95 0.00149 649497.38
4290607.32 0.00135
649452.68 4290733.37 0.00355 649462.52
4290744.99 0.00361
649473.24 4290753.04 0.00349 649487.55
4290761.98 0.00331
649458.94 4290719.07 0.00299 649482.18
4290692.25 0.00215
649496.49 4290676.16 0.00184 649494.70
4290750.36 0.00288
649510.79 4290725.33 0.00223 649531.35
4290701.19 0.00179
649512.58 4290658.28 0.00158 649505.43
4290620.73 0.00138
649581.89 4290816.00 0.00298 649595.63
4290822.01 0.00281
649605.89 4290832.53 0.00279 649616.82
4290841.57 0.00270
649599.29 4290800.42 0.00236 649604.66
4290787.90 0.00212
649623.43 4290818.30 0.00223 649627.90

```
4290802.21        0.00199
         649634.60    4290882.58        0.00288                            649644.44
4290891.53        0.00273
         649657.85    4290903.15        0.00256                            649662.32
4290845.92        0.00191
         649670.37    4290910.31        0.00239                            649672.16
4290855.76        0.00186
         649681.10    4290918.35        0.00231                            649690.04
4290926.40        0.00227
         649703.46    4290939.81        0.00226                            649686.47
4290867.38        0.00177
         649698.09    4290813.73        0.00141                            649718.66
4290834.29        0.00136
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
UNMITIGATED               ***        07/10/23
 *** AERMET - VERSION  19191 ***   ***
                        ***        21:24:19

                                   PAGE  29
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                              *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF DPM      IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                          X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
         649741.01    4290850.39        0.00131                            649763.37
4290863.80        0.00126
         649701.67    4290877.22        0.00169                            649715.08
4290890.63        0.00166
         649732.07    4290904.94        0.00163                            649910.92
4290991.68        0.00137
         649928.80    4291003.31        0.00141                            649945.79
4291014.04        0.00145
```

```
         649962.79    4291022.98        0.00150                    650053.10
4291107.93        0.00257
         650064.73    4291089.15        0.00213                    650085.30
4291104.35        0.00201
         650070.09    4291118.66        0.00237                    650083.51
4291131.18        0.00225
         650146.10    4291166.06        0.00185                    650157.73
4291151.75        0.00168
         650140.74    4291144.59        0.00173                    650115.70
4291125.82        0.00182
         650113.91    4291149.07        0.00199                    650178.30
4291183.94        0.00182
         650190.82    4291167.85        0.00164                    650434.94
4291167.85        0.00150
         650417.06    4291189.31        0.00163                    650401.86
4291217.03        0.00185
         650207.81    4291177.68        0.00165                    650225.69
4291183.05        0.00163
         650240.89    4291188.41        0.00164                    650258.78
4291195.57        0.00165
         650280.24    4291200.93        0.00166                    650293.65
4291207.19        0.00170
         650315.11    4291215.24        0.00176                    650333.89
4291220.60        0.00181
         650352.67    4291225.08        0.00186                    650374.13
4291231.34        0.00195
         650013.76    4291462.05        0.00190                    649930.59
4291369.05        0.00283
         649914.50    4291349.37        0.00306                    649935.06
4291335.96        0.00378
         649907.34    4291317.18        0.00295                    649919.86
4291361.00        0.00288
         649909.13    4291335.07        0.00331                    649903.77
4291306.45        0.00307
         649917.18    4291272.47        0.00422                    649911.81
4291301.09        0.00336
         649924.33    4291302.87        0.00367                    650053.10
4291363.68        0.00175
         650066.52    4291373.52        0.00227                    650079.04
4291366.37        0.00229
         649216.78    4290755.24        0.01277                    649667.26
4291204.25        0.00177
         649647.43    4291189.03        0.00178                    649627.60
4291173.81        0.00180
         649607.77    4291158.59        0.00184                    649587.93
4291143.37        0.00192
         649568.10    4291128.14        0.00199                    649548.27
4291112.92        0.00207
         649528.43    4291097.70        0.00217                    649508.60
4291082.48        0.00229
```

649488.77 4291067.26 0.00240 649468.94
4291052.04 0.00247
649449.10 4291036.82 0.00248 649429.27
4291021.60 0.00248
649409.44 4291006.38 0.00246 649389.61
4290991.16 0.00241
649358.62 4290967.62 0.00234 649339.01
4290952.12 0.00233
649319.40 4290936.61 0.00234 649299.79
4290921.11 0.00237
649280.17 4290905.61 0.00243 649260.56
4290890.10 0.00256
649240.95 4290874.60 0.00277 649221.34
4290859.10 0.00316
649201.72 4290843.59 0.00383 649182.11
4290828.09 0.00495
649158.28 4290816.10 0.00604 649684.20
4291223.82 0.00172
649247.52 4290740.02 0.01112 649225.72
4290769.65 0.00877
649245.57 4290784.86 0.00580 649265.41
4290800.06 0.00456

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE PERIOD (43680 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 ,
L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 ,
L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 ,
L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC

```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
         649285.25    4290815.27        0.00409                      649305.10
4290830.48        0.00393
         649324.94    4290845.68        0.00388                      649344.78
4290860.89        0.00387
         649364.63    4290876.10        0.00386                      649384.47
4290891.31        0.00389
         649404.31    4290906.51        0.00401                      649424.16
4290921.72        0.00431
         649444.00    4290936.93        0.00461                      649463.84
4290952.13        0.00480
         649483.69    4290967.34        0.00489                      649503.53
4290982.55        0.00482
         649523.37    4290997.75        0.00450                      649543.21
4291012.96        0.00405
         649563.06    4291028.17        0.00368                      649582.90
4291043.37        0.00343
         649602.74    4291058.58        0.00326                      649622.59
4291073.79        0.00316
         649642.43    4291088.99        0.00310                      649662.27
4291104.20        0.00305
         649682.12    4291119.41        0.00305                      649701.96
4291134.62        0.00306
         649673.19    4291162.96        0.00219                      649653.34
4291147.75        0.00222
         649633.50    4291132.55        0.00226                      649613.66
4291117.34        0.00232
         649593.81    4291102.13        0.00239                      649573.97
4291086.92        0.00249
         649554.13    4291071.72        0.00263                      649534.28
4291056.51        0.00281
         649514.44    4291041.30        0.00301                      649494.60
4291026.10        0.00317
         649474.75    4291010.89        0.00326                      649454.91
4290995.68        0.00325
         649435.07    4290980.48        0.00319                      649415.22
4290965.27        0.00309
         649395.38    4290950.06        0.00298                      649375.54
4290934.86        0.00290
         649355.70    4290919.65        0.00287                      649335.85
4290904.44        0.00287
         649316.01    4290889.24        0.00290                      649296.17
4290874.03        0.00295
         649276.32    4290858.82        0.00307                      649256.48
4290843.61        0.00335
         649236.64    4290828.41        0.00390                      649216.79
4290813.20        0.00499
         649185.13    4290793.92        0.00803                      649699.43
4291179.00        0.00212
1 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER CNONSTRUCTION EMISSIONS -
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** THE SUMMARY OF MAXIMUM PERIOD (43680 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	NETWORK AVERAGE CONC		RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.01277 AT	(649216.78, 4290755.24, 49.77, 49.77, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.01112 AT	(649247.52, 4290740.02, 49.72, 49.72, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.00877 AT	(649225.72, 4290769.65, 49.99, 49.99, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.00803 AT	(649185.13, 4290793.92, 50.69, 50.69, 1.80)	DC	
	5TH HIGHEST VALUE IS	0.00604 AT	(649158.28, 4290816.10, 51.08, 51.08, 1.80)	DC	
	6TH HIGHEST VALUE IS	0.00580 AT	(649245.57, 4290784.86, 50.06, 50.06, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00499 AT	(649216.79, 4290813.20, 51.60, 51.60, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00495 AT	(649182.11, 4290828.09, 51.49, 51.49, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.00489 AT	(649483.69, 4290967.34, 51.16, 51.16, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.00482 AT	(649503.53, 4290982.55, 51.21, 51.21, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   30 Warning Message(s)
A Total of   996 Informational Message(s)

A Total of   43680 Hours Were Processed

A Total of   452 Calm Hours Identified

A Total of   544 Missing Hours Identified (1.25 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
SO W320   690   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   691   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   692   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   694   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   695   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   696   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   697   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   698   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   699   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   702   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   703   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   704   VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320   705   VPARM: Input Parameter May Be Out-of-Range for Parameter

```
       QS
SO W320     706        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     707        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     708        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     711        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     712        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     715        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     716        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     717        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     718        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     721        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     722        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     723        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     724        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     725        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
SO W320     726        VPARM: Input Parameter May Be Out-of-Range for Parameter
       QS
ME W186     752       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
ME W187     752       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


   ***********************************
   *** AERMOD Finishes Successfully ***
   ***********************************
```

```
** Lakes Environmental AERMOD MPI
**
**************************************
**
** AERMOD INPUT PRODUCED BY:
** AERMOD VIEW VER. 11.2.0
** LAKES ENVIRONMENTAL SOFTWARE INC.
** DATE: 7/12/2023
** FILE: D:\DOCUMENTS\ROSEVILLE TO SACRAMENTO THIRD RAIL\2023 UPDATE\AERMOD LAYOVER
OPERATE\AERMOD LAYOVER OPERATE.ADI
**
**************************************
**
**
**************************************
** AERMOD CONTROL PATHWAY
**************************************
**
**
CO STARTING
   TITLEONE 3RD LEG LAYOVER OPERATIONAL EMISSIONS
   MODELOPT DFAULT CONC
   AVERTIME PERIOD
   URBANOPT 2500000 SACREMENTO_-ROSEVILLE-ARDEN-ARCADE_MSA
   POLLUTID DPM
   FLAGPOLE 1.80
   RUNORNOT RUN
   ERRORFIL "AERMOD LAYOVER OPERATE.ERR"
CO FINISHED
**
**************************************
** AERMOD SOURCE PATHWAY
**************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
** ----------------------------------------------------------------------
** LINE SOURCE REPRESENTED BY SEPARATED VOLUME SOURCES (2W)
** LINE VOLUME SOURCE ID = SLINE1
** DESCRSRC MOVING LOCOMOTIVE EMISSIONS DAYTIME
** PREFIX
** LENGTH OF SIDE = 12.00
** CONFIGURATION = SEPARATED 2W
** EMISSION RATE = 0.000567
** ELEVATED
** VERTICAL DIMENSION = 11.30
** SZINIT = 2.63
** NODES = 11
```

```
** 649071.104, 4290497.431, 49.44, 5.65, 11.16
** 649268.354, 4290673.357, 49.69, 5.65, 11.16
** 649502.922, 4290855.947, 50.56, 5.65, 11.16
** 649722.830, 4291029.208, 51.99, 5.65, 11.16
** 649941.405, 4291199.803, 53.13, 5.65, 11.16
** 650057.356, 4291270.440, 53.57, 5.65, 11.16
** 650169.309, 4291326.416, 53.85, 5.65, 11.16
** 650298.589, 4291367.732, 53.97, 5.65, 11.16
** 650402.545, 4291391.722, 53.68, 5.65, 11.16
** 650519.829, 4291403.717, 53.88, 5.65, 11.16
** 650635.780, 4291414.379, 53.77, 5.65, 11.16
** ------------------------------------------------------------------
   LOCATION L0000001     VOLUME   649075.581 4290501.424 49.45
   LOCATION L0000002     VOLUME   649093.492 4290517.399 49.47
   LOCATION L0000003     VOLUME   649111.403 4290533.374 49.49
   LOCATION L0000004     VOLUME   649129.315 4290549.349 49.51
   LOCATION L0000005     VOLUME   649147.226 4290565.323 49.54
   LOCATION L0000006     VOLUME   649165.137 4290581.298 49.56
   LOCATION L0000007     VOLUME   649183.048 4290597.273 49.58
   LOCATION L0000008     VOLUME   649200.959 4290613.248 49.60
   LOCATION L0000009     VOLUME   649218.870 4290629.222 49.63
   LOCATION L0000010     VOLUME   649236.781 4290645.197 49.65
   LOCATION L0000011     VOLUME   649254.692 4290661.172 49.67
   LOCATION L0000012     VOLUME   649272.847 4290676.854 49.71
   LOCATION L0000013     VOLUME   649291.786 4290691.596 49.78
   LOCATION L0000014     VOLUME   649310.724 4290706.338 49.85
   LOCATION L0000015     VOLUME   649329.663 4290721.080 49.92
   LOCATION L0000016     VOLUME   649348.602 4290735.822 49.99
   LOCATION L0000017     VOLUME   649367.540 4290750.564 50.06
   LOCATION L0000018     VOLUME   649386.479 4290765.306 50.13
   LOCATION L0000019     VOLUME   649405.418 4290780.048 50.20
   LOCATION L0000020     VOLUME   649424.356 4290794.790 50.27
   LOCATION L0000021     VOLUME   649443.295 4290809.532 50.34
   LOCATION L0000022     VOLUME   649462.234 4290824.275 50.41
   LOCATION L0000023     VOLUME   649481.172 4290839.017 50.48
   LOCATION L0000024     VOLUME   649500.111 4290853.759 50.55
   LOCATION L0000025     VOLUME   649518.976 4290868.595 50.66
   LOCATION L0000026     VOLUME   649537.827 4290883.448 50.79
   LOCATION L0000027     VOLUME   649556.679 4290898.301 50.91
   LOCATION L0000028     VOLUME   649575.531 4290913.154 51.03
   LOCATION L0000029     VOLUME   649594.383 4290928.007 51.15
   LOCATION L0000030     VOLUME   649613.235 4290942.860 51.28
   LOCATION L0000031     VOLUME   649632.086 4290957.713 51.40
   LOCATION L0000032     VOLUME   649650.938 4290972.566 51.52
   LOCATION L0000033     VOLUME   649669.790 4290987.418 51.65
   LOCATION L0000034     VOLUME   649688.642 4291002.271 51.77
   LOCATION L0000035     VOLUME   649707.494 4291017.124 51.89
   LOCATION L0000036     VOLUME   649726.358 4291031.961 52.01
   LOCATION L0000037     VOLUME   649745.278 4291046.728 52.11
   LOCATION L0000038     VOLUME   649764.197 4291061.494 52.21
```

```
   LOCATION L0000039     VOLUME   649783.117 4291076.261 52.30
   LOCATION L0000040     VOLUME   649802.036 4291091.027 52.40
   LOCATION L0000041     VOLUME   649820.956 4291105.794 52.50
   LOCATION L0000042     VOLUME   649839.876 4291120.560 52.60
   LOCATION L0000043     VOLUME   649858.795 4291135.327 52.70
   LOCATION L0000044     VOLUME   649877.715 4291150.093 52.80
   LOCATION L0000045     VOLUME   649896.634 4291164.860 52.90
   LOCATION L0000046     VOLUME   649915.554 4291179.626 53.00
   LOCATION L0000047     VOLUME   649934.473 4291194.393 53.09
   LOCATION L0000048     VOLUME   649954.392 4291207.714 53.18
   LOCATION L0000049     VOLUME   649974.888 4291220.201 53.26
   LOCATION L0000050     VOLUME   649995.384 4291232.687 53.33
   LOCATION L0000051     VOLUME   650015.881 4291245.173 53.41
   LOCATION L0000052     VOLUME   650036.377 4291257.659 53.49
   LOCATION L0000053     VOLUME   650056.873 4291270.145 53.57
   LOCATION L0000054     VOLUME   650078.317 4291280.920 53.62
   LOCATION L0000055     VOLUME   650099.783 4291291.653 53.68
   LOCATION L0000056     VOLUME   650121.249 4291302.386 53.73
   LOCATION L0000057     VOLUME   650142.715 4291313.119 53.78
   LOCATION L0000058     VOLUME   650164.182 4291323.852 53.84
   LOCATION L0000059     VOLUME   650186.709 4291331.977 53.87
   LOCATION L0000060     VOLUME   650209.570 4291339.283 53.89
   LOCATION L0000061     VOLUME   650232.431 4291346.589 53.91
   LOCATION L0000062     VOLUME   650255.292 4291353.895 53.93
   LOCATION L0000063     VOLUME   650278.153 4291361.201 53.95
   LOCATION L0000064     VOLUME   650301.069 4291368.305 53.96
   LOCATION L0000065     VOLUME   650324.455 4291373.701 53.90
   LOCATION L0000066     VOLUME   650347.840 4291379.098 53.83
   LOCATION L0000067     VOLUME   650371.226 4291384.495 53.77
   LOCATION L0000068     VOLUME   650394.611 4291389.891 53.70
   LOCATION L0000069     VOLUME   650418.320 4291393.336 53.71
   LOCATION L0000070     VOLUME   650442.196 4291395.777 53.75
   LOCATION L0000071     VOLUME   650466.071 4291398.219 53.79
   LOCATION L0000072     VOLUME   650489.947 4291400.661 53.83
   LOCATION L0000073     VOLUME   650513.822 4291403.103 53.87
   LOCATION L0000074     VOLUME   650537.715 4291405.362 53.86
   LOCATION L0000075     VOLUME   650561.614 4291407.559 53.84
   LOCATION L0000076     VOLUME   650585.514 4291409.757 53.82
   LOCATION L0000077     VOLUME   650609.413 4291411.955 53.80
   LOCATION L0000078     VOLUME   650633.312 4291414.152 53.77
** END OF LINE VOLUME SOURCE ID = SLINE1
   LOCATION TRACK1       POINT      650194.910  4291379.390       55.010
** DESCRSRC IDLE TRAIN AT LAYOVER TRACK 1
   LOCATION TRACK2       POINT      650197.957  4291369.732       54.530
** DESCRSRC IDLE TRAIN AT LAYOVER TRACK 2
   LOCATION TRACK3       POINT      650200.500  4291360.080       54.260
** DESCRSRC IDLE TRAIN AT LAYOVER TRACK 3
   LOCATION TRACK4       POINT      650203.040  4291351.440       54.120
** DESCRSRC IDLE TRAIN AT LAYOVER TRACK 4
   LOCATION STCK5        POINT      650017.560  4291261.500       52.980
```

```
** DESCRSRC SMALL BACKUP 30KW DIESEL GENERATOR
** SOURCE PARAMETERS **
** LINE VOLUME SOURCE ID = SLINE1
   SRCPARAM L0000001     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000002     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000003     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000004     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000005     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000006     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000007     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000008     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000009     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000010     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000011     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000012     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000013     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000014     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000015     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000016     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000017     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000018     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000019     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000020     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000021     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000022     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000023     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000024     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000025     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000026     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000027     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000028     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000029     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000030     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000031     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000032     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000033     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000034     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000035     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000036     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000037     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000038     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000039     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000040     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000041     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000042     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000043     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000044     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000045     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000046     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000047     0.000007269      5.65     11.16      2.63
```

```
   SRCPARAM L0000048     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000049     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000050     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000051     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000052     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000053     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000054     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000055     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000056     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000057     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000058     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000059     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000060     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000061     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000062     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000063     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000064     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000065     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000066     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000067     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000068     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000069     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000070     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000071     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000072     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000073     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000074     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000075     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000076     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000077     0.000007269      5.65     11.16      2.63
   SRCPARAM L0000078     0.000007269      5.65     11.16      2.63
** ------------------------------------------------------------------
   SRCPARAM TRACK1        1.68E-06     4.600   739.000      90.8     0.127
   SRCPARAM TRACK2        1.68E-06     4.600   739.000      90.8     0.127
   SRCPARAM TRACK3        1.68E-06     4.600   739.000      90.8     0.127
   SRCPARAM TRACK4        1.68E-06     4.600   739.000      90.8     0.127
   SRCPARAM STCK5         2.49E-06     6.100   644.000      17.8     0.305
   URBANSRC ALL
   SRCGROUP ALL
SO FINISHED
**
**************************************
** AERMOD RECEPTOR PATHWAY
**************************************
**
**
RE STARTING
   INCLUDED "AERMOD LAYOVER OPERATE.ROU"
RE FINISHED
**
```

```
**************************************
** AERMOD METEOROLOGY PATHWAY
**************************************
**
**
ME STARTING
   SURFFILE "..\..\MET DATA\14-18.SFC"
   PROFFILE "..\..\MET DATA\14-18.PFL"
   SURFDATA 93225 2014
   UAIRDATA 23230 2014 OAKLAND/WSO_AP
   PROFBASE 8.0 METERS
ME FINISHED
**
**************************************
** AERMOD OUTPUT PATHWAY
**************************************
**
**
OU STARTING
** AUTO-GENERATED PLOTFILES
   PLOTFILE   PERIOD ALL "AERMOD LAYOVER OPERATE.AD\PE00GALL.PLT" 31
   FILEFORM EXP
   SUMMFILE "AERMOD LAYOVER CONSTRUCT.SUM"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            6 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 SO W320     231        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 SO W320     232        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 SO W320     233        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 SO W320     234        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 ME W186     260       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
```

```
 ME W187     260       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                             ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                             ***       12:48:12

                                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                              ***     MODEL SETUP OPTIONS SUMMARY
  ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses URBAN Dispersion Algorithm for the SBL for    83 Source(s),
        for Total of    1 Urban Area(s):
   Urban Population =   2500000.0 ;  Urban Roughness Length =  1.000 m
      * Urban Roughness Length of 1.0 Meter Used.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Accepts FLAGPOLE Receptor . Heights.
      * The User Specified a Pollutant Type of: DPM

 **Model Calculates PERIOD Averages Only

 **This Run Includes:     83 Source(s);       1 Source Group(s); and     329
Receptor(s)

                with:      5 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     78 VOLUME source(s)
```

```
                and:      0 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
                and:      0 SWPOINT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  19191

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

          NOTE: Option for EXPonential format used in formatted output result files
(FILEFORM Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing
Hours
                                                                 b for Both Calm
and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     8.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                 ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out


 **Detailed Error/Message File:   AERMOD LAYOVER OPERATE.ERR

 **File for Summary of Results:   AERMOD LAYOVER CONSTRUCT.SUM

↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                             ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                          ***       12:48:12
```

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BLDG EXISTS	URBAN SOURCE	CAP/ HOR VARY BY	EMIS RATE SCALAR
TRACK1	0	0.16800E-05	650194.9	4291379.4	55.0	4.60	739.00	90.80	0.13	NO	YES	NO	
TRACK2	0	0.16800E-05	650198.0	4291369.7	54.5	4.60	739.00	90.80	0.13	NO	YES	NO	
TRACK3	0	0.16800E-05	650200.5	4291360.1	54.3	4.60	739.00	90.80	0.13	NO	YES	NO	
TRACK4	0	0.16800E-05	650203.0	4291351.4	54.1	4.60	739.00	90.80	0.13	NO	YES	NO	
STCK5	0	0.24900E-05	650017.6	4291261.5	53.0	6.10	644.00	17.80	0.31	NO	YES	NO	

↟ *** AERMOD - VERSION 22112 *** *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
*** 07/12/23
*** AERMET - VERSION 19191 *** ***
*** 12:48:12

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
L0000001	0	0.72690E-05	649075.6	4290501.4	49.4	5.65	11.16	2.63	YES	
L0000002	0	0.72690E-05	649093.5	4290517.4	49.5	5.65	11.16	2.63	YES	
L0000003	0	0.72690E-05	649111.4	4290533.4	49.5	5.65	11.16			

2.63 YES
L0000004 0 0.72690E-05 649129.3 4290549.3 49.5 5.65 11.16
2.63 YES
L0000005 0 0.72690E-05 649147.2 4290565.3 49.5 5.65 11.16
2.63 YES
L0000006 0 0.72690E-05 649165.1 4290581.3 49.6 5.65 11.16
2.63 YES
L0000007 0 0.72690E-05 649183.0 4290597.3 49.6 5.65 11.16
2.63 YES
L0000008 0 0.72690E-05 649201.0 4290613.2 49.6 5.65 11.16
2.63 YES
L0000009 0 0.72690E-05 649218.9 4290629.2 49.6 5.65 11.16
2.63 YES
L0000010 0 0.72690E-05 649236.8 4290645.2 49.6 5.65 11.16
2.63 YES
L0000011 0 0.72690E-05 649254.7 4290661.2 49.7 5.65 11.16
2.63 YES
L0000012 0 0.72690E-05 649272.8 4290676.9 49.7 5.65 11.16
2.63 YES
L0000013 0 0.72690E-05 649291.8 4290691.6 49.8 5.65 11.16
2.63 YES
L0000014 0 0.72690E-05 649310.7 4290706.3 49.8 5.65 11.16
2.63 YES
L0000015 0 0.72690E-05 649329.7 4290721.1 49.9 5.65 11.16
2.63 YES
L0000016 0 0.72690E-05 649348.6 4290735.8 50.0 5.65 11.16
2.63 YES
L0000017 0 0.72690E-05 649367.5 4290750.6 50.1 5.65 11.16
2.63 YES
L0000018 0 0.72690E-05 649386.5 4290765.3 50.1 5.65 11.16
2.63 YES
L0000019 0 0.72690E-05 649405.4 4290780.0 50.2 5.65 11.16
2.63 YES
L0000020 0 0.72690E-05 649424.4 4290794.8 50.3 5.65 11.16
2.63 YES
L0000021 0 0.72690E-05 649443.3 4290809.5 50.3 5.65 11.16
2.63 YES
L0000022 0 0.72690E-05 649462.2 4290824.3 50.4 5.65 11.16
2.63 YES
L0000023 0 0.72690E-05 649481.2 4290839.0 50.5 5.65 11.16
2.63 YES
L0000024 0 0.72690E-05 649500.1 4290853.8 50.5 5.65 11.16
2.63 YES
L0000025 0 0.72690E-05 649519.0 4290868.6 50.7 5.65 11.16
2.63 YES
L0000026 0 0.72690E-05 649537.8 4290883.4 50.8 5.65 11.16
2.63 YES
L0000027 0 0.72690E-05 649556.7 4290898.3 50.9 5.65 11.16
2.63 YES
L0000028 0 0.72690E-05 649575.5 4290913.2 51.0 5.65 11.16

2.63 YES
L0000029 0 0.72690E-05 649594.4 4290928.0 51.1 5.65 11.16
2.63 YES
L0000030 0 0.72690E-05 649613.2 4290942.9 51.3 5.65 11.16
2.63 YES
L0000031 0 0.72690E-05 649632.1 4290957.7 51.4 5.65 11.16
2.63 YES
L0000032 0 0.72690E-05 649650.9 4290972.6 51.5 5.65 11.16
2.63 YES
L0000033 0 0.72690E-05 649669.8 4290987.4 51.6 5.65 11.16
2.63 YES
L0000034 0 0.72690E-05 649688.6 4291002.3 51.8 5.65 11.16
2.63 YES
L0000035 0 0.72690E-05 649707.5 4291017.1 51.9 5.65 11.16
2.63 YES
L0000036 0 0.72690E-05 649726.4 4291032.0 52.0 5.65 11.16
2.63 YES
L0000037 0 0.72690E-05 649745.3 4291046.7 52.1 5.65 11.16
2.63 YES
L0000038 0 0.72690E-05 649764.2 4291061.5 52.2 5.65 11.16
2.63 YES
L0000039 0 0.72690E-05 649783.1 4291076.3 52.3 5.65 11.16
2.63 YES
L0000040 0 0.72690E-05 649802.0 4291091.0 52.4 5.65 11.16
2.63 YES

*** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE SCALAR VARY BY
L0000041	0	0.72690E-05	649821.0	4291105.8	52.5	5.65	11.16	2.63	YES
L0000042	0	0.72690E-05	649839.9	4291120.6	52.6	5.65	11.16	2.63	YES
L0000043	0	0.72690E-05	649858.8	4291135.3	52.7	5.65	11.16		

2.63 YES
L0000044 0 0.72690E-05 649877.7 4291150.1 52.8 5.65 11.16
2.63 YES
L0000045 0 0.72690E-05 649896.6 4291164.9 52.9 5.65 11.16
2.63 YES
L0000046 0 0.72690E-05 649915.6 4291179.6 53.0 5.65 11.16
2.63 YES
L0000047 0 0.72690E-05 649934.5 4291194.4 53.1 5.65 11.16
2.63 YES
L0000048 0 0.72690E-05 649954.4 4291207.7 53.2 5.65 11.16
2.63 YES
L0000049 0 0.72690E-05 649974.9 4291220.2 53.3 5.65 11.16
2.63 YES
L0000050 0 0.72690E-05 649995.4 4291232.7 53.3 5.65 11.16
2.63 YES
L0000051 0 0.72690E-05 650015.9 4291245.2 53.4 5.65 11.16
2.63 YES
L0000052 0 0.72690E-05 650036.4 4291257.7 53.5 5.65 11.16
2.63 YES
L0000053 0 0.72690E-05 650056.9 4291270.1 53.6 5.65 11.16
2.63 YES
L0000054 0 0.72690E-05 650078.3 4291280.9 53.6 5.65 11.16
2.63 YES
L0000055 0 0.72690E-05 650099.8 4291291.7 53.7 5.65 11.16
2.63 YES
L0000056 0 0.72690E-05 650121.2 4291302.4 53.7 5.65 11.16
2.63 YES
L0000057 0 0.72690E-05 650142.7 4291313.1 53.8 5.65 11.16
2.63 YES
L0000058 0 0.72690E-05 650164.2 4291323.9 53.8 5.65 11.16
2.63 YES
L0000059 0 0.72690E-05 650186.7 4291332.0 53.9 5.65 11.16
2.63 YES
L0000060 0 0.72690E-05 650209.6 4291339.3 53.9 5.65 11.16
2.63 YES
L0000061 0 0.72690E-05 650232.4 4291346.6 53.9 5.65 11.16
2.63 YES
L0000062 0 0.72690E-05 650255.3 4291353.9 53.9 5.65 11.16
2.63 YES
L0000063 0 0.72690E-05 650278.2 4291361.2 53.9 5.65 11.16
2.63 YES
L0000064 0 0.72690E-05 650301.1 4291368.3 54.0 5.65 11.16
2.63 YES
L0000065 0 0.72690E-05 650324.5 4291373.7 53.9 5.65 11.16
2.63 YES
L0000066 0 0.72690E-05 650347.8 4291379.1 53.8 5.65 11.16
2.63 YES
L0000067 0 0.72690E-05 650371.2 4291384.5 53.8 5.65 11.16
2.63 YES
L0000068 0 0.72690E-05 650394.6 4291389.9 53.7 5.65 11.16

```
2.63     YES
 L0000069         0   0.72690E-05  650418.3 4291393.3    53.7     5.65    11.16
2.63     YES
 L0000070         0   0.72690E-05  650442.2 4291395.8    53.8     5.65    11.16
2.63     YES
 L0000071         0   0.72690E-05  650466.1 4291398.2    53.8     5.65    11.16
2.63     YES
 L0000072         0   0.72690E-05  650489.9 4291400.7    53.8     5.65    11.16
2.63     YES
 L0000073         0   0.72690E-05  650513.8 4291403.1    53.9     5.65    11.16
2.63     YES
 L0000074         0   0.72690E-05  650537.7 4291405.4    53.9     5.65    11.16
2.63     YES
 L0000075         0   0.72690E-05  650561.6 4291407.6    53.8     5.65    11.16
2.63     YES
 L0000076         0   0.72690E-05  650585.5 4291409.8    53.8     5.65    11.16
2.63     YES
 L0000077         0   0.72690E-05  650609.4 4291412.0    53.8     5.65    11.16
2.63     YES
 L0000078         0   0.72690E-05  650633.3 4291414.2    53.8     5.65    11.16
2.63     YES
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***       07/12/23
 *** AERMET - VERSION  19191 ***   ***
                           ***      12:48:12

                                    PAGE   5
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*


                                          *** SOURCE IDs DEFINING SOURCE GROUPS
***

 SRCGROUP ID                                          SOURCE IDs
 -----------                                          ----------


  ALL        L0000001    , L0000002    , L0000003    , L0000004    , L0000005    ,
L0000006    , L0000007    , L0000008    ,

             L0000009    , L0000010    , L0000011    , L0000012    , L0000013    ,
L0000014    , L0000015    , L0000016    ,

             L0000017    , L0000018    , L0000019    , L0000020    , L0000021    ,
L0000022    , L0000023    , L0000024    ,

             L0000025    , L0000026    , L0000027    , L0000028    , L0000029    ,
L0000030    , L0000031    , L0000032    ,

             L0000033    , L0000034    , L0000035    , L0000036    , L0000037    ,
```

L0000038   , L0000039   , L0000040   ,

             L0000041   , L0000042   , L0000043   , L0000044   , L0000045   ,
L0000046   , L0000047   , L0000048   ,

             L0000049   , L0000050   , L0000051   , L0000052   , L0000053   ,
L0000054   , L0000055   , L0000056   ,

             L0000057   , L0000058   , L0000059   , L0000060   , L0000061   ,
L0000062   , L0000063   , L0000064   ,

             L0000065   , L0000066   , L0000067   , L0000068   , L0000069   ,
L0000070   , L0000071   , L0000072   ,

             L0000073   , L0000074   , L0000075   , L0000076   , L0000077   ,
L0000078   , TRACK1   , TRACK2   ,

             TRACK3   , TRACK4   , STCK5   ,

 *** MODELOPTs: RegDFAULT CONC ELEV FLGPOL URBAN ADJ_U*

                                        *** SOURCE IDs DEFINED AS URBAN SOURCES
***

  URBAN ID   URBAN POP   SOURCE IDs
  --------   ---------   ----------

              2500000.   L0000001   , L0000002   , L0000003   , L0000004   ,
L0000005   , L0000006   , L0000007   ,
 L0000008   ,

             L0000009   , L0000010   , L0000011   , L0000012   , L0000013   ,
L0000014   , L0000015   , L0000016   ,

             L0000017   , L0000018   , L0000019   , L0000020   , L0000021   ,
L0000022   , L0000023   , L0000024   ,

             L0000025   , L0000026   , L0000027   , L0000028   , L0000029   ,
L0000030   , L0000031   , L0000032   ,

             L0000033   , L0000034   , L0000035   , L0000036   , L0000037   ,
L0000038   , L0000039   , L0000040   ,

```
             L0000041    , L0000042    , L0000043    , L0000044    , L0000045    ,
L0000046    , L0000047    , L0000048    ,

             L0000049    , L0000050    , L0000051    , L0000052    , L0000053    ,
L0000054    , L0000055    , L0000056    ,

             L0000057    , L0000058    , L0000059    , L0000060    , L0000061    ,
L0000062    , L0000063    , L0000064    ,

             L0000065    , L0000066    , L0000067    , L0000068    , L0000069    ,
L0000070    , L0000071    , L0000072    ,

             L0000073    , L0000074    , L0000075    , L0000076    , L0000077    ,
L0000078    , TRACK1      , TRACK2      ,

             TRACK3      , TRACK4      , STCK5       ,
↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                          ***       12:48:12

                                    PAGE   7
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                         *** GRIDDED RECEPTOR NETWORK SUMMARY ***

                                    *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                           *** X-COORDINATES OF GRID ***
                                                    (METERS)

       649742.2,  649754.2,  649766.2,  649778.2,  649790.2,  649802.2,  649814.2,
649826.2,  649838.2,  649850.2,
       649862.2,

                                           *** Y-COORDINATES OF GRID ***
                                                    (METERS)

      4291240.0, 4291257.0, 4291274.0, 4291291.0, 4291308.0, 4291325.0, 4291342.0,
4291359.0, 4291376.0, 4291393.0,
      4291410.0,
↟ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                          ***       12:48:12

                                    PAGE   8
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*
```

```
                                  *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                                * ELEVATION HEIGHTS IN METERS *

    Y-COORD  |                                              X-COORD (METERS)
    (METERS) |     649742.20    649754.20    649766.20    649778.20    649790.20
649802.20    649814.20    649826.20    649838.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |         54.60        54.80        54.90        54.80        54.90
    54.90        54.90        55.00        55.00
  4291392.99 |         54.70        54.80        54.80        54.80        54.80
    54.80        54.90        54.90        55.00
  4291375.99 |         54.80        54.90        54.90        54.90        54.90
    54.90        54.90        54.90        55.00
  4291358.99 |         54.80        54.90        54.90        54.90        54.90
    54.90        54.90        54.90        55.00
  4291341.99 |         54.80        54.80        54.90        55.00        55.00
    55.00        55.00        54.90        54.90
  4291324.99 |         54.80        54.90        55.20        55.40        55.40
    55.30        55.20        55.00        54.90
  4291307.99 |         55.00        54.90        55.10        55.20        55.20
    55.30        55.60        55.60        55.40
  4291290.99 |         56.10        56.20        56.50        56.80        56.70
    57.00        56.80        56.10        55.50
  4291273.99 |         57.10        57.80        57.90        58.00        58.00
    57.90        57.10        55.80        55.30
  4291256.99 |         57.70        58.00        57.90        58.00        58.00
    58.00        57.00        55.60        55.00
  4291239.99 |         57.60        57.60        57.40        57.30        57.30
    57.20        56.50        55.00        54.00
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                        ***       07/12/23
 *** AERMET - VERSION  19191 ***    ***
                      ***       12:48:12

                                   PAGE   9
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                  *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                                * ELEVATION HEIGHTS IN METERS *

    Y-COORD  |                                              X-COORD (METERS)
    (METERS) |     649850.20    649862.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
```

```
  4291409.99 |         55.10        55.10
  4291392.99 |         55.10        55.20
  4291375.99 |         55.20        55.20
  4291358.99 |         55.10        55.20
  4291341.99 |         55.00        55.10
  4291324.99 |         54.90        54.80
  4291307.99 |         55.00        54.60
  4291290.99 |         55.10        54.60
  4291273.99 |         55.10        54.50
  4291256.99 |         54.90        54.20
  4291239.99 |         53.90        53.70
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                          ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                        ***        12:48:12

                                   PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                  *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                                * HILL HEIGHT SCALES IN METERS *

    Y-COORD  |                                                X-COORD (METERS)
    (METERS) |     649742.20    649754.20    649766.20    649778.20    649790.20
649802.20    649814.20    649826.20    649838.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |         54.60        54.80        54.90        54.80        54.90
    54.90        54.90        55.00        55.00
  4291392.99 |         54.70        54.80        54.80        54.80        54.80
    54.80        54.90        54.90        55.00
  4291375.99 |         54.80        54.90        54.90        54.90        54.90
    54.90        54.90        54.90        55.00
  4291358.99 |         54.80        54.90        54.90        54.90        54.90
    54.90        54.90        54.90        55.00
  4291341.99 |         54.80        54.80        54.90        55.00        55.00
    55.00        55.00        54.90        54.90
  4291324.99 |         54.80        54.90        55.20        55.40        55.40
    55.30        55.20        55.00        54.90
  4291307.99 |         55.00        54.90        57.90        57.90        57.90
    57.90        55.60        55.60        55.40
  4291290.99 |         56.10        57.50        57.90        57.90        57.90
    57.90        56.80        56.10        55.50
  4291273.99 |         57.40        57.80        57.90        58.00        58.00
    57.90        57.80        57.80        55.30
  4291256.99 |         57.70        58.00        57.90        58.00        58.00
```

```
    58.00        57.00        57.80        55.00
  4291239.99 |         57.60        57.60        57.40        57.30        57.30
    57.50        57.30        58.00        58.00
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***       07/12/23
 *** AERMET - VERSION  19191 ***   ***
                         ***       12:48:12

                                   PAGE  11
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                  *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                                * HILL HEIGHT SCALES IN METERS *

    Y-COORD  |                                               X-COORD (METERS)
    (METERS) |     649850.20    649862.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |         55.10        55.10
  4291392.99 |         55.10        55.20
  4291375.99 |         55.20        55.20
  4291358.99 |         55.10        55.20
  4291341.99 |         55.00        55.10
  4291324.99 |         54.90        54.80
  4291307.99 |         55.00        54.60
  4291290.99 |         55.10        54.60
  4291273.99 |         55.10        54.50
  4291256.99 |         54.90        54.20
  4291239.99 |         53.90        53.70
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***       07/12/23
 *** AERMET - VERSION  19191 ***   ***
                         ***       12:48:12

                                   PAGE  12
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                  *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                            * RECEPTOR FLAGPOLE HEIGHTS IN METERS *

    Y-COORD  |                                               X-COORD (METERS)
    (METERS) |     649742.20    649754.20    649766.20    649778.20    649790.20
649802.20    649814.20    649826.20    649838.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -
```

```
  4291409.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291392.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291375.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291358.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291341.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291324.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291307.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291290.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291273.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291256.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
  4291239.99 |          1.80         1.80         1.80         1.80         1.80
     1.80         1.80         1.80         1.80
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                          ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                        ***        12:48:12

                                   PAGE  13
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                  *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                            * RECEPTOR FLAGPOLE HEIGHTS IN METERS *

    Y-COORD  |                                               X-COORD (METERS)
    (METERS) |     649850.20    649862.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - -

  4291409.99 |          1.80         1.80
  4291392.99 |          1.80         1.80
  4291375.99 |          1.80         1.80
  4291358.99 |          1.80         1.80
  4291341.99 |          1.80         1.80
  4291324.99 |          1.80         1.80
  4291307.99 |          1.80         1.80
  4291290.99 |          1.80         1.80
  4291273.99 |          1.80         1.80
```

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(650194.2, 4291271.5, 53.3, 53.3, 1.8); (650195.6, 4291266.8, 53.4, 53.4, 1.8);
(650196.4, 4291262.6, 53.5, 53.5, 1.8); (650197.8, 4291257.9, 53.6, 53.6, 1.8);
(650199.8, 4291253.2, 53.6, 53.6, 1.8); (650202.0, 4291248.0, 53.7, 53.7, 1.8);
(650204.2, 4291242.5, 53.7, 53.7, 1.8); (650205.8, 4291236.7, 53.8, 53.8, 1.8);
(650212.3, 4291238.7, 53.8, 53.8, 1.8); (650218.3, 4291240.5, 53.7, 53.7, 1.8);
(650224.7, 4291242.5, 53.7, 53.7, 1.8); (650232.7, 4291245.3, 53.7, 53.7, 1.8);
(650241.1, 4291248.3, 53.7, 53.7, 1.8); (650249.2, 4291250.9, 53.7, 53.7, 1.8);
(650256.6, 4291253.7, 53.7, 53.7, 1.8); (650266.2, 4291257.1, 53.7, 53.7, 1.8);
(650206.4, 4291276.2, 53.4, 53.4, 1.8); (650208.5, 4291273.2, 53.4, 53.4, 1.8);
(650210.1, 4291268.6, 53.5, 53.5, 1.8); (650212.3, 4291264.6, 53.6, 53.6, 1.8);
(650235.3, 4291286.2, 53.6, 53.6, 1.8); (650236.7, 4291283.0, 53.6, 53.6, 1.8);
(650238.2, 4291279.8, 53.6, 53.6, 1.8); (650239.2, 4291276.2, 53.6, 53.6, 1.8);
(650239.7, 4291273.0, 53.6, 53.6, 1.8); (650256.4, 4291292.0, 53.7, 53.7, 1.8);
(650258.0, 4291286.8, 53.7, 53.7, 1.8); (650260.0, 4291279.8, 53.7, 53.7, 1.8);
(650260.6, 4291272.4, 53.7, 53.7, 1.8); (650263.8, 4291266.0, 53.7, 53.7, 1.8);
(649381.2, 4290586.8, 50.8, 50.8, 1.8); (649394.6, 4290600.2, 50.6, 50.6, 1.8);
(649410.7, 4290612.7, 50.5, 50.5, 1.8); (649425.9, 4290624.3, 50.6, 50.6, 1.8);
(649417.8, 4290633.2, 50.5, 50.5, 1.8); (649410.7, 4290643.1, 50.4, 50.4, 1.8);

```
     ( 649391.9, 4290566.2,      51.2,      51.2,       1.8);         ( 649400.8,
4290559.0,      51.4,      51.4,       1.8);
     ( 649406.2, 4290552.8,      51.5,      51.5,       1.8);         ( 649414.2,
4290537.6,      51.6,      51.6,       1.8);
     ( 649435.7, 4290606.4,      50.8,      50.8,       1.8);         ( 649444.6,
4290599.3,      50.8,      50.8,       1.8);
     ( 649449.1, 4290591.2,      51.0,      51.0,       1.8);         ( 649458.1,
4290584.1,      51.1,      51.1,       1.8);
     ( 649458.1, 4290644.0,      50.8,      50.8,       1.8);         ( 649468.8,
4290628.8,      51.1,      51.1,       1.8);
     ( 649481.3, 4290619.0,      51.3,      51.3,       1.8);         ( 649497.4,
4290607.3,      51.5,      51.5,       1.8);
     ( 649452.7, 4290733.4,      50.2,      50.2,       1.8);         ( 649462.5,
4290745.0,      50.3,      50.3,       1.8);
     ( 649473.2, 4290753.0,      50.3,      50.3,       1.8);         ( 649487.6,
4290762.0,      50.2,      50.2,       1.8);
     ( 649458.9, 4290719.1,      50.2,      50.2,       1.8);         ( 649482.2,
4290692.2,      50.6,      50.6,       1.8);
     ( 649496.5, 4290676.2,      50.8,      50.8,       1.8);         ( 649494.7,
4290750.4,      50.3,      50.3,       1.8);
     ( 649510.8, 4290725.3,      50.7,      50.7,       1.8);         ( 649531.4,
4290701.2,      50.7,      50.7,       1.8);
     ( 649512.6, 4290658.3,      51.1,      51.1,       1.8);         ( 649505.4,
4290620.7,      51.6,      51.6,       1.8);
     ( 649581.9, 4290816.0,      50.8,      50.8,       1.8);         ( 649595.6,
4290822.0,      50.9,      50.9,       1.8);
     ( 649605.9, 4290832.5,      50.9,      50.9,       1.8);         ( 649616.8,
4290841.6,      51.0,      51.0,       1.8);
     ( 649599.3, 4290800.4,      51.0,      51.0,       1.8);         ( 649604.7,
4290787.9,      51.2,      51.2,       1.8);
     ( 649623.4, 4290818.3,      51.3,      51.3,       1.8);         ( 649627.9,
4290802.2,      51.3,      51.3,       1.8);
     ( 649634.6, 4290882.6,      50.9,      50.9,       1.8);         ( 649644.4,
4290891.5,      50.9,      50.9,       1.8);
     ( 649657.9, 4290903.1,      51.0,      51.0,       1.8);         ( 649662.3,
4290845.9,      51.6,      51.6,       1.8);
     ( 649670.4, 4290910.3,      51.1,      51.1,       1.8);         ( 649672.2,
4290855.8,      51.6,      51.6,       1.8);
     ( 649681.1, 4290918.3,      51.1,      51.1,       1.8);         ( 649690.0,
4290926.4,      51.1,      51.1,       1.8);
     ( 649703.5, 4290939.8,      51.1,      51.1,       1.8);         ( 649686.5,
4290867.4,      51.6,      51.6,       1.8);
     ( 649698.1, 4290813.7,      51.6,      51.6,       1.8);         ( 649718.7,
4290834.3,      51.6,      51.6,       1.8);
     ( 649741.0, 4290850.4,      51.7,      51.7,       1.8);         ( 649763.4,
4290863.8,      51.7,      51.7,       1.8);
     ( 649701.7, 4290877.2,      51.7,      51.7,       1.8);         ( 649715.1,
4290890.6,      51.6,      51.6,       1.8);
     ( 649732.1, 4290904.9,      51.4,      51.4,       1.8);         ( 649910.9,
4290991.7,      51.8,      51.8,       1.8);
```

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(650064.7, 4291089.1, 52.7, 52.7, 1.8); (650085.3, 4291104.3, 53.0, 53.0, 1.8);
(650070.1, 4291118.7, 52.8, 52.8, 1.8); (650083.5, 4291131.2, 53.1, 53.1, 1.8);
(650146.1, 4291166.1, 54.0, 54.0, 1.8); (650157.7, 4291151.8, 54.0, 54.0, 1.8);
(650140.7, 4291144.6, 53.9, 53.9, 1.8); (650115.7, 4291125.8, 53.7, 53.7, 1.8);
(650113.9, 4291149.1, 53.8, 53.8, 1.8); (650178.3, 4291183.9, 54.0, 54.0, 1.8);
(650190.8, 4291167.8, 54.1, 54.1, 1.8); (650434.9, 4291167.8, 52.7, 52.7, 1.8);
(650417.1, 4291189.3, 53.3, 53.3, 1.8); (650401.9, 4291217.0, 54.2, 54.2, 1.8);
(650207.8, 4291177.7, 54.2, 54.2, 1.8); (650225.7, 4291183.0, 54.2, 54.2, 1.8);
(650240.9, 4291188.4, 54.3, 54.3, 1.8); (650258.8, 4291195.6, 54.3, 54.3, 1.8);
(650280.2, 4291200.9, 54.4, 54.4, 1.8); (650293.7, 4291207.2, 54.2, 54.2, 1.8);
(650315.1, 4291215.2, 54.1, 54.1, 1.8); (650333.9, 4291220.6, 54.1, 54.1, 1.8);
(650352.7, 4291225.1, 54.2, 54.2, 1.8); (650374.1, 4291231.3, 54.3, 54.3, 1.8);
(650013.8, 4291462.0, 55.0, 55.0, 1.8); (649930.6, 4291369.0, 55.9, 55.9, 1.8);
(649914.5, 4291349.4, 55.4, 55.4, 1.8); (649935.1, 4291336.0, 54.5, 54.5, 1.8);
(649907.3, 4291317.2, 54.1, 54.1, 1.8); (649919.9, 4291361.0, 55.7, 55.7, 1.8);
(649909.1, 4291335.1, 54.7, 54.7, 1.8); (649903.8, 4291306.5, 53.8, 53.8, 1.8);
(649917.2, 4291272.5, 53.5, 53.5, 1.8); (649911.8, 4291301.1, 53.8, 53.8, 1.8);

```
     ( 649924.3, 4291302.9,      53.8,      53.8,       1.8);         ( 650053.1,
4291363.7,      57.0,      57.0,       1.8);
     ( 650066.5, 4291373.5,      56.5,      56.5,       1.8);         ( 650079.0,
4291366.4,      56.4,      56.4,       1.8);
     ( 649216.8, 4290755.2,      49.8,      49.8,       0.0);         ( 649667.3,
4291204.2,      56.1,      56.1,       0.0);
     ( 649647.4, 4291189.0,      56.6,      56.6,       0.0);         ( 649627.6,
4291173.8,      56.6,      56.6,       0.0);
     ( 649607.8, 4291158.6,      55.6,      55.6,       0.0);         ( 649587.9,
4291143.4,      54.0,      54.0,       0.0);
     ( 649568.1, 4291128.1,      53.5,      53.5,       0.0);         ( 649548.3,
4291112.9,      54.0,      54.0,       0.0);
     ( 649528.4, 4291097.7,      54.3,      54.3,       0.0);         ( 649508.6,
4291082.5,      53.5,      53.5,       0.0);
     ( 649488.8, 4291067.3,      52.9,      52.9,       0.0);         ( 649468.9,
4291052.0,      53.2,      53.2,       0.0);
     ( 649449.1, 4291036.8,      54.2,      54.2,       0.0);         ( 649429.3,
4291021.6,      53.6,      53.6,       0.0);
     ( 649409.4, 4291006.4,      52.1,      52.1,       0.0);         ( 649389.6,
4290991.2,      51.1,      51.1,       0.0);
     ( 649358.6, 4290967.6,      50.3,      50.3,       0.0);         ( 649339.0,
4290952.1,      50.6,      50.6,       0.0);
     ( 649319.4, 4290936.6,      51.3,      51.3,       0.0);         ( 649299.8,
4290921.1,      51.7,      51.7,       0.0);
     ( 649280.2, 4290905.6,      52.0,      52.0,       0.0);         ( 649260.6,
4290890.1,      52.1,      52.1,       0.0);
     ( 649241.0, 4290874.6,      52.3,      52.3,       0.0);         ( 649221.3,
4290859.1,      52.5,      52.5,       0.0);
     ( 649201.7, 4290843.6,      52.3,      52.3,       0.0);         ( 649182.1,
4290828.1,      51.5,      51.5,       0.0);
     ( 649158.3, 4290816.1,      51.1,      51.1,       1.8);         ( 649684.2,
4291223.8,      55.4,      55.4,       1.8);
     ( 649247.5, 4290740.0,      49.7,      49.7,       0.0);         ( 649225.7,
4290769.6,      50.0,      50.0,       0.0);
     ( 649245.6, 4290784.9,      50.1,      50.1,       0.0);         ( 649265.4,
4290800.1,      50.0,      50.0,       0.0);
     ( 649285.2, 4290815.3,      50.0,      50.0,       0.0);         ( 649305.1,
4290830.5,      50.0,      50.0,       0.0);
     ( 649324.9, 4290845.7,      50.0,      50.0,       0.0);         ( 649344.8,
4290860.9,      49.9,      49.9,       0.0);
     ( 649364.6, 4290876.1,      50.0,      50.0,       0.0);         ( 649384.5,
4290891.3,      50.1,      50.1,       0.0);
     ( 649404.3, 4290906.5,      50.1,      50.1,       0.0);         ( 649424.2,
4290921.7,      50.5,      50.5,       0.0);
     ( 649444.0, 4290936.9,      51.0,      51.0,       0.0);         ( 649463.8,
4290952.1,      51.0,      51.0,       0.0);
     ( 649483.7, 4290967.3,      51.2,      51.2,       0.0);         ( 649503.5,
4290982.5,      51.2,      51.2,       0.0);
     ( 649523.4, 4290997.8,      51.1,      51.1,       0.0);         ( 649543.2,
4291013.0,      51.3,      51.3,       0.0);
```

```
     ( 649563.1, 4291028.2,      51.4,      51.4,       0.0);         ( 649582.9,
4291043.4,      51.6,      51.6,       0.0);
     ( 649602.7, 4291058.6,      51.8,      51.8,       0.0);         ( 649622.6,
4291073.8,      52.2,      52.2,       0.0);
     ( 649642.4, 4291089.0,      52.6,      52.6,       0.0);         ( 649662.3,
4291104.2,      53.5,      53.5,       0.0);
```


*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

```
     ( 649682.1, 4291119.4,      53.3,      53.3,       0.0);         ( 649702.0,
4291134.6,      53.5,      53.5,       0.0);
     ( 649673.2, 4291163.0,      55.2,      55.2,       0.0);         ( 649653.3,
4291147.8,      54.5,      54.5,       0.0);
     ( 649633.5, 4291132.5,      53.7,      53.7,       0.0);         ( 649613.7,
4291117.3,      52.9,      52.9,       0.0);
     ( 649593.8, 4291102.1,      52.6,      52.6,       0.0);         ( 649574.0,
4291086.9,      52.3,      52.3,       0.0);
     ( 649554.1, 4291071.7,      52.2,      52.2,       0.0);         ( 649534.3,
4291056.5,      52.1,      52.1,       0.0);
     ( 649514.4, 4291041.3,      51.7,      51.7,       0.0);         ( 649494.6,
4291026.1,      51.7,      51.7,       0.0);
     ( 649474.8, 4291010.9,      52.1,      52.1,       0.0);         ( 649454.9,
4290995.7,      52.3,      52.3,       0.0);
     ( 649435.1, 4290980.5,      52.1,      52.1,       0.0);         ( 649415.2,
4290965.3,      51.5,      51.5,       0.0);
     ( 649395.4, 4290950.1,      50.5,      50.5,       0.0);         ( 649375.5,
4290934.9,      50.2,      50.2,       0.0);
     ( 649355.7, 4290919.6,      50.3,      50.3,       0.0);         ( 649335.9,
4290904.4,      50.5,      50.5,       0.0);
     ( 649316.0, 4290889.2,      50.6,      50.6,       0.0);         ( 649296.2,
4290874.0,      50.8,      50.8,       0.0);
     ( 649276.3, 4290858.8,      50.9,      50.9,       0.0);         ( 649256.5,
4290843.6,      51.0,      51.0,       0.0);
     ( 649236.6, 4290828.4,      51.4,      51.4,       0.0);         ( 649216.8,
4290813.2,      51.6,      51.6,       0.0);
     ( 649185.1, 4290793.9,      50.7,      50.7,       1.8);         ( 649699.4,
4291179.0,      56.0,      56.0,       1.8);
```

```
                                   PAGE  17
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                            *** METEOROLOGICAL DAYS SELECTED FOR
PROCESSING ***
                                                              (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1
1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON
WHAT IS INCLUDED IN THE DATA FILE.



                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED
CATEGORIES ***
                                                           (METERS/SEC)

                                                 1.54,   3.09,   5.14,   8.23,
10.80,
↑ *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                        ***       07/12/23
 *** AERMET - VERSION  19191 ***   ***
                      ***       12:48:12

                                   PAGE  18
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                    *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL
DATA ***

   Surface file:   ..\..\MET DATA\14-18.SFC
                 Met Version:  19191
   Profile file:   ..\..\MET DATA\14-18.PFL
```

Surface format: FREE

Profile format: FREE

Surface station no.: 93225 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2014 Year: 2014

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
14	01	01	1	01	-15.5	0.166	-9.000	-9.000	-999.	162.	30.3	0.05	0.69	1.00	2.36	211.	10.1	275.4	2.0
14	01	01	1	02	-3.4	0.079	-9.000	-9.000	-999.	56.	13.1	0.06	0.69	1.00	1.06	188.	10.1	273.8	2.0
14	01	01	1	03	-12.2	0.146	-9.000	-9.000	-999.	134.	23.5	0.05	0.69	1.00	2.10	136.	10.1	275.9	2.0
14	01	01	1	04	-23.3	0.226	-9.000	-9.000	-999.	257.	56.0	0.05	0.69	1.00	3.15	142.	10.1	277.0	2.0
14	01	01	1	05	-16.2	0.171	-9.000	-9.000	-999.	170.	32.2	0.06	0.69	1.00	2.33	186.	10.1	274.9	2.0
14	01	01	1	06	-3.0	0.076	-9.000	-9.000	-999.	55.	12.9	0.06	0.69	1.00	0.99	204.	10.1	273.1	2.0
14	01	01	1	07	-4.8	0.092	-9.000	-9.000	-999.	67.	14.7	0.07	0.69	1.00	1.28	171.	10.1	272.0	2.0
14	01	01	1	08	-1.8	0.065	-9.000	-9.000	-999.	40.	14.3	0.06	0.69	1.00	0.67	183.	10.1	273.1	2.0
14	01	01	1	09	-0.3	0.062	-9.000	-9.000	-999.	37.	75.4	0.06	0.69	0.41	0.82	181.	10.1	278.1	2.0
14	01	01	1	10	36.6	0.151	0.431	0.020	80.	141.	-8.6	0.05	0.69	0.28	1.55	141.	10.1	280.4	2.0
14	01	01	1	11	65.9	0.162	0.666	0.019	163.	157.	-5.9	0.07	0.69	0.24	1.48	161.	10.1	283.1	2.0
14	01	01	1	12	82.5	0.174	0.784	0.017	212.	175.	-5.8	0.07	0.69	0.22	1.59	152.	10.1	285.9	2.0
14	01	01	1	13	86.0	0.219	0.835	0.015	246.	246.	-11.1	0.07	0.69	0.22	2.18	154.	10.1	288.1	2.0
14	01	01	1	14	74.8	0.234	0.838	0.014	286.	272.	-15.6	0.05	0.69	0.23	2.56	229.	10.1	288.1	2.0
14	01	01	1	15	42.8	0.198	0.714	0.013	308.	212.	-16.5	0.06	0.69	0.26	2.08	180.	10.1	288.8	2.0
14	01	01	1	16	15.1	0.151	0.507	0.013	315.	141.	-20.7	0.06	0.69	0.35	1.62	194.	10.1	288.1	2.0
14	01	01	1	17	-9.6	0.137	-9.000	-9.000	-999.	122.	24.4	0.05	0.69	0.61	1.96	223.	10.1	286.4	2.0
14	01	01	1	18	-1.5	0.061	-9.000	-9.000	-999.	38.	13.6	0.04	0.69	1.00	0.65	251.	10.1	283.8	2.0

```
 14 01 01   1 19   -1.5  0.058 -9.000 -9.000 -999.   34.     12.1  0.02   0.69
1.00    0.72   47.   10.1  280.9    2.0
 14 01 01   1 20   -3.4  0.076 -9.000 -9.000 -999.   50.     11.8  0.03   0.69
1.00    1.20   81.   10.1  278.8    2.0
 14 01 01   1 21   -2.2  0.065 -9.000 -9.000 -999.   40.     11.5  0.03   0.69
1.00    0.91   73.   10.1  278.8    2.0
 14 01 01   1 22   -1.6  0.059 -9.000 -9.000 -999.   35.     12.0  0.02   0.69
1.00    0.74   22.   10.1  279.2    2.0
 14 01 01   1 23   -1.9  0.063 -9.000 -9.000 -999.   38.     11.9  0.03   0.69
1.00    0.82   60.   10.1  277.0    2.0
 14 01 01   1 24   -5.1  0.090 -9.000 -9.000 -999.   65.     13.1  0.02   0.69
1.00    1.57   34.   10.1  276.4    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 14 01 01 01   10.1 1  211.    2.36   275.4   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                          ***       12:48:12

                                    PAGE  19
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL       ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                 L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                   *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                        ** CONC OF DPM      IN MICROGRAMS/M**3
                    **

    Y-COORD  |                                                 X-COORD (METERS)
    (METERS) |     649742.20    649754.20    649766.20    649778.20    649790.20
649802.20    649814.20    649826.20    649838.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
 4291409.99 |       0.00240      0.00245      0.00250      0.00256      0.00262
 0.00268      0.00274      0.00281      0.00288
 4291392.99 |       0.00250      0.00256      0.00262      0.00268      0.00274
 0.00281      0.00288      0.00296      0.00303
 4291375.99 |       0.00261      0.00267      0.00274      0.00281      0.00288
 0.00295      0.00303      0.00312      0.00320
 4291358.99 |       0.00273      0.00280      0.00287      0.00295      0.00303
 0.00311      0.00320      0.00329      0.00339
 4291341.99 |       0.00287      0.00294      0.00302      0.00310      0.00319
 0.00328      0.00338      0.00349      0.00360
 4291324.99 |       0.00301      0.00309      0.00317      0.00326      0.00336
 0.00347      0.00358      0.00371      0.00384
 4291307.99 |       0.00317      0.00326      0.00336      0.00346      0.00357
 0.00368      0.00379      0.00392      0.00407
 4291290.99 |       0.00329      0.00339      0.00348      0.00357      0.00370
 0.00381      0.00396      0.00416      0.00437
 4291273.99 |       0.00342      0.00349      0.00359      0.00370      0.00383
 0.00398      0.00420      0.00449      0.00472
 4291256.99 |       0.00358      0.00368      0.00381      0.00394      0.00408
 0.00424      0.00452      0.00486      0.00515
 4291239.99 |       0.00381      0.00394      0.00411      0.00428      0.00445
 0.00464      0.00494      0.00535      0.00575
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                          ***        12:48:12

                                     PAGE  20
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL       ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                 L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                   *** NETWORK ID: ROSEHIGH ;  NETWORK TYPE:
GRIDCART ***

                                        ** CONC OF DPM      IN MICROGRAMS/M**3
                  **

    Y-COORD  |                                              X-COORD (METERS)
    (METERS) |     649850.20    649862.20
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

4291409.99	0.00295	0.00302
4291392.99	0.00311	0.00319
4291375.99	0.00328	0.00338
4291358.99	0.00349	0.00359
4291341.99	0.00371	0.00383
4291324.99	0.00397	0.00412
4291307.99	0.00426	0.00445
4291290.99	0.00457	0.00481
4291273.99	0.00495	0.00524
4291256.99	0.00541	0.00577
4291239.99	0.00607	0.00644

*** THE PERIOD (43680 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***

INCLUDING SOURCE(S): L0000001 , L0000002 , L0000003 , L0000004 , L0000005 , L0000006 , L0000007 , L0000008 , L0000009 , L0000010 , L0000011 , L0000012 , L0000013 , L0000014 , L0000015 , L0000016 , L0000017 , L0000018 , L0000019 , L0000020 , L0000021 , L0000022 , L0000023 , L0000024 , L0000025 , L0000026 , L0000027 , L0000028 , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
650194.23	4291271.45	0.00594	650195.61	4291266.76	0.00566
650196.44	4291262.63	0.00542	650197.82	4291257.94	0.00518
650199.75	4291253.25	0.00495	650201.96	4291248.01	0.00472
650204.16	4291242.49	0.00450	650205.82	4291236.70	0.00429

650212.33 4291238.72 0.00427 650218.31 4291240.52 0.00426
650224.69 4291242.51 0.00425 650232.67 4291245.31 0.00425
650241.05 4291248.30 0.00425 650249.22 4291250.89 0.00425
650256.60 4291253.68 0.00425 650266.17 4291257.07 0.00425
650206.35 4291276.22 0.00593 650208.54 4291273.23 0.00572
650210.14 4291268.64 0.00546 650212.33 4291264.65 0.00523
650235.26 4291286.19 0.00592 650236.66 4291283.00 0.00572
650238.25 4291279.81 0.00553 650239.25 4291276.22 0.00534
650239.65 4291273.03 0.00518 650256.40 4291291.97 0.00582
650258.00 4291286.79 0.00552 650259.99 4291279.81 0.00516
650260.59 4291272.43 0.00484 650263.78 4291266.05 0.00457
649381.16 4290586.76 0.00301 649394.57 4290600.17 0.00307
649410.67 4290612.69 0.00309 649425.86 4290624.31 0.00310
649417.82 4290633.25 0.00334 649410.67 4290643.08 0.00364
649391.89 4290566.20 0.00262 649400.83 4290559.05 0.00247
649406.20 4290552.79 0.00237 649414.24 4290537.59 0.00219
649435.70 4290606.43 0.00275 649444.64 4290599.28 0.00260
649449.11 4290591.23 0.00248 649458.05 4290584.08 0.00235
649458.05 4290643.98 0.00304 649468.77 4290628.78 0.00273
649481.29 4290618.95 0.00252 649497.38 4290607.32 0.00230
649452.68 4290733.37 0.00539 649462.52 4290744.99 0.00555
649473.24 4290753.04 0.00556 649487.55 4290761.98 0.00549
649458.94 4290719.07 0.00469 649482.18 4290692.25 0.00356
649496.49 4290676.16 0.00310 649494.70 4290750.36 0.00483
649510.79 4290725.33 0.00380 649531.35 4290701.19 0.00310

```
         649512.58    4290658.28        0.00271                      649505.43
4290620.73        0.00237
         649581.89    4290816.00        0.00478                      649595.63
4290822.01        0.00463
         649605.89    4290832.53        0.00471                      649616.82
4290841.57        0.00473
         649599.29    4290800.42        0.00397                      649604.66
4290787.90        0.00361
         649623.43    4290818.30        0.00394                      649627.90
4290802.21        0.00354
         649634.60    4290882.58        0.00579                      649644.44
4290891.53        0.00586
         649657.85    4290903.15        0.00591                      649662.32
4290845.92        0.00387
         649670.37    4290910.31        0.00578                      649672.16
4290855.76        0.00393
         649681.10    4290918.35        0.00578                      649690.04
4290926.40        0.00584
         649703.46    4290939.81        0.00599                      649686.47
4290867.38        0.00395
         649698.09    4290813.73        0.00291                      649718.66
4290834.29        0.00297
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***       07/12/23
 *** AERMET - VERSION  19191 ***   ***
                           ***       12:48:12

                                     PAGE  22
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL       ***
                                   INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                 L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS
***

                                        ** CONC OF DPM      IN MICROGRAMS/M**3
                    **

       X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)
Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
- - - - - - - - - - - - - - - - - - - - - - - - -
         649741.01    4290850.39         0.00296                            649763.37
4290863.80         0.00292
         649701.67    4290877.22         0.00390                            649715.08
4290890.63         0.00398
         649732.07    4290904.94         0.00403                            649910.92
4290991.68         0.00313
         649928.80    4291003.31         0.00308                            649945.79
4291014.04         0.00304
         649962.79    4291022.98         0.00299                            650053.10
4291107.93         0.00333
         650064.73    4291089.15         0.00294                            650085.30
4291104.35         0.00296
         650070.09    4291118.66         0.00332                            650083.51
4291131.18         0.00338
         650146.10    4291166.06         0.00332                            650157.73
4291151.75         0.00300
         650140.74    4291144.59         0.00303                            650115.70
4291125.82         0.00298
         650113.91    4291149.07         0.00334                            650178.30
4291183.94         0.00335
         650190.82    4291167.85         0.00299                            650434.94
4291167.85         0.00199
         650417.06    4291189.31         0.00222                            650401.86
4291217.03         0.00256
         650207.81    4291177.68         0.00301                            650225.69
4291183.05         0.00298
         650240.89    4291188.41         0.00296                            650258.78
4291195.57         0.00296
         650280.24    4291200.93         0.00292                            650293.65
4291207.19         0.00294
         650315.11    4291215.24         0.00295                            650333.89
4291220.60         0.00293
         650352.67    4291225.08         0.00289                            650374.13
4291231.34         0.00287
         650013.76    4291462.05         0.00343                            649930.59
4291369.05         0.00408
         649914.50    4291349.37         0.00428                            649935.06
4291335.96         0.00492
         649907.34    4291317.18         0.00499                            649919.86
4291361.00         0.00412
         649909.13    4291335.07         0.00455                            649903.77
4291306.45         0.00524
         649917.18    4291272.47         0.00680                            649911.81
4291301.09         0.00555
         649924.33    4291302.87         0.00577                            650053.10
4291363.68         0.00580
         650066.52    4291373.52         0.00575                            650079.04
4291366.37         0.00628
         649216.78    4290755.24         0.00568                            649667.26
```

```
4291204.25        0.00371
         649647.43    4291189.03        0.00368                        649627.60
4291173.81        0.00367
         649607.77    4291158.59        0.00371                        649587.93
4291143.37        0.00378
         649568.10    4291128.14        0.00378                        649548.27
4291112.92        0.00375
         649528.43    4291097.70        0.00372                        649508.60
4291082.48        0.00374
         649488.77    4291067.26        0.00375                        649468.94
4291052.04        0.00372
         649449.10    4291036.82        0.00366                        649429.27
4291021.60        0.00367
         649409.44    4291006.38        0.00371                        649389.61
4290991.16        0.00370
         649358.62    4290967.62        0.00367                        649339.01
4290952.12        0.00366
         649319.40    4290936.61        0.00364                        649299.79
4290921.11        0.00362
         649280.17    4290905.61        0.00359                        649260.56
4290890.10        0.00356
         649240.95    4290874.60        0.00352                        649221.34
4290859.10        0.00348
         649201.72    4290843.59        0.00344                        649182.11
4290828.09        0.00340
         649158.28    4290816.10        0.00319                        649684.20
4291223.82        0.00357
         649247.52    4290740.02        0.00752                        649225.72
4290769.65        0.00548
         649245.57    4290784.86        0.00555                        649265.41
4290800.06        0.00560
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                           ***       07/12/23
 *** AERMET - VERSION  19191 ***   ***
                           ***       12:48:12

                                     PAGE  23
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

                                  *** THE PERIOD ( 43680 HRS) AVERAGE CONCENTRATION
VALUES FOR SOURCE GROUP: ALL      ***
                                      INCLUDING SOURCE(S):     L0000001    , L0000002
 , L0000003    , L0000004    , L0000005    ,
                 L0000006    , L0000007    , L0000008    , L0000009    , L0000010
 , L0000011    , L0000012    , L0000013    ,
                 L0000014    , L0000015    , L0000016    , L0000017    , L0000018
 , L0000019    , L0000020    , L0000021    ,
                 L0000022    , L0000023    , L0000024    , L0000025    , L0000026
 , L0000027    , L0000028    ,  . . .      ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
649285.25	4290815.27	0.00564	649305.10	4290830.48	0.00568
649324.94	4290845.68	0.00570	649344.78	4290860.89	0.00572
649364.63	4290876.10	0.00574	649384.47	4290891.31	0.00577
649404.31	4290906.51	0.00578	649424.16	4290921.72	0.00582
649444.00	4290936.93	0.00584	649463.84	4290952.13	0.00586
649483.69	4290967.34	0.00588	649503.53	4290982.55	0.00590
649523.37	4290997.75	0.00592	649543.21	4291012.96	0.00594
649563.06	4291028.17	0.00596	649582.90	4291043.37	0.00598
649602.74	4291058.58	0.00599	649622.59	4291073.79	0.00600
649642.43	4291088.99	0.00600	649662.27	4291104.20	0.00593
649682.12	4291119.41	0.00598	649701.96	4291134.62	0.00599
649673.19	4291162.96	0.00451	649653.34	4291147.75	0.00455
649633.50	4291132.55	0.00458	649613.66	4291117.34	0.00461
649593.81	4291102.13	0.00461	649573.97	4291086.92	0.00460
649554.13	4291071.72	0.00459	649534.28	4291056.51	0.00457
649514.44	4291041.30	0.00456	649494.60	4291026.10	0.00455
649474.75	4291010.89	0.00452	649454.91	4290995.68	0.00449
649435.07	4290980.48	0.00448	649415.22	4290965.27	0.00448
649395.38	4290950.06	0.00447	649375.54	4290934.86	0.00445
649355.70	4290919.65	0.00443	649335.85	4290904.44	0.00441

*** THE SUMMARY OF MAXIMUM PERIOD (43680 HRS) RESULTS ***

** CONC OF DPM IN MICROGRAMS/M**3 **

GROUP ID	NETWORK AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00752 AT (649247.52, 4290740.02, 49.72, 49.72, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.00680 AT (649917.18, 4291272.47, 53.51, 53.51, 1.80)	DC	
	3RD HIGHEST VALUE IS	0.00644 AT (649862.20, 4291239.99, 53.70, 53.70, 1.80)	GC	ROSEHIGH
	4TH HIGHEST VALUE IS	0.00628 AT (650079.04, 4291366.37, 56.37, 56.37, 1.80)	DC	
	5TH HIGHEST VALUE IS	0.00607 AT (649850.20, 4291239.99, 53.90, 53.90, 1.80)	GC	ROSEHIGH
	6TH HIGHEST VALUE IS	0.00600 AT (649642.43, 4291088.99, 52.59, 52.59, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.00600 AT (649622.59, 4291073.79, 52.18, 52.18, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.00599 AT (649703.46, 4290939.81, 51.07, 51.07, 1.80)	DC	
	9TH HIGHEST VALUE IS	0.00599 AT (649602.74, 4291058.58, 51.83, 51.83, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.00599 AT (649701.96, 4291134.62, 53.47, 53.47, 0.00)	DC	

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION 22112  ***   *** 3RD LEG LAYOVER OPERATIONAL EMISSIONS
                          ***        07/12/23
 *** AERMET - VERSION  19191 ***   ***
                           ***       12:48:12

                                     PAGE  25
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  FLGPOL  URBAN  ADJ_U*

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            6 Warning Message(s)
 A Total of          996 Informational Message(s)

 A Total of        43680 Hours Were Processed

 A Total of          452 Calm Hours Identified

 A Total of          544 Missing Hours Identified (  1.25 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 SO W320     231        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 SO W320     232        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 SO W320     233        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 SO W320     234        PPARM: Input Parameter May Be Out-of-Range for Parameter
       VS
 ME W186     260       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
 ME W187     260       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


    ***********************************
    *** AERMOD Finishes Successfully ***
    ***********************************
```

*HARP - HRACalc v22118 7/12/2023 1:40:57 PM - Cancer Risk - Input File: D:\Documents\Roseville to Sacram

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK
2			9901	DieselExhF	0.0075	6.49E-06	30YrCance	*	6.49E-06

ento Third Rail\2023 update\aermod Layover operate\third layover operationHRAInput.hra

SOIL_RISK	DERMAL_F	MMILK_RI	WATER_RI	FISH_RISK	CROP_RISI	BEEF_RISK	DAIRY_RIS	PIG_RISK	CHICKEN_I
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

EGG_RISK	1ST_DRIVE	2ND_DRIV	PASTURE_	FISH_CON	WATER_CONC
0.00E+00	INHALATION		0.00E+00	0.00E+00	0.00E+00

*HARP - HRACalc v22118 7/12/2023 3:27:05 PM - Cancer Risk - Input File: D:\Documents\Roseville to Sacram

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK
1			9901	DieselExhF	0.0054	9.60E-07	1YrCancer	*	9.60E-07

ento Third Rail\2023 update\aermod Layover constuct\HARP\HARP output\thrd layover consrct miigatedHRA

SOIL_RISK	DERMAL_F	MMILK_RI	WATER_RI	FISH_RISK	CROP_RISI	BEEF_RISK	DAIRY_RIS	PIG_RISK	CHICKEN_I
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Input.hra

EGG_RISK	1ST_DRIVE	2ND_DRIV	PASTURE_	FISH_CON	WATER_CONC
0.00E+00	INHALATION		0.00E+00	0.00E+00	0.00E+00

*HARP - HRACalc v22118 7/18/2023 4:57:17 PM - Cancer Risk - Input File: D:\Documents\Roseville to Sacram

INDEX	GRP1	GRP2	POLID	POLABBRE	CONC	RISK_SUM	SCENARIO	DETAILS	INH_RISK
1			9901	DieselExhF	0.0127	2.26E-06	1YrCancer	*	2.26E-06

ento Third Rail\2023 update\aermod Layover constuct\HARP\HARP output\thrd layover consrct unmiigatedH

SOIL_RISK	DERMAL_F	MMILK_RI	WATER_RI	FISH_RISK	CROP_RISI	BEEF_RISK	DAIRY_RIS	PIG_RISK	CHICKEN_I
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

RAInput.hra

EGG_RISK	1ST_DRIVE	2ND_DRIV	PASTURE_	FISH_CON	WATER_CONC
0.00E+00	NA	NA	0.00E+00	0.00E+00	0.00E+00